NTA
UGC
NET/SET/JRF
PAPER I
Teaching and Research Aptitude

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Preface

The UGC-NET Exam is conducted by the National Testing Agency (NTA) on behalf of the University Grants Commission (UGC). It is an eligibility test for candidates aspiring for a teaching career in higher education as well as for enrolling for Junior Fellowship Research programmes offered in institutions across India. Being a highly coveted exam, it is very important for the aspirants to plan well and prepare from the right resources, thoroughly and comprehensively.

In the past few years, the pattern and syllabus of the exam have changed several times. In January 2019, UGC announced one of the most major changes to the UGC syllabus, resulting in the addition of many new topics, such as digital initiatives in higher education, Indian Logic, and education in ancient India. These changes are further discussed in the Syllabus and Strategy section of the book and a video has been provided for you to understand the implications.

The inspiration for writing this book came from my students who are always looking for a good book to help them prepare well. Though there are scores of books available in the market, none of them fulfils all the requirements, namely adequate syllabus coverage, previous years' questions, shortcut tricks to solve difficult questions. I have tried to cover all the requirements in this book, including addition of the new topics mentioned in the latest syllabi.

Many aspirants make the mistake of focusing heavily on Paper II and ignoring Paper I. It has been observed that most candidates score well in Paper II, but due to lesser marks in Paper I they are not able to make it to the top 6%. Paper I has equal weightage and scoring good marks in it will ensure a higher percentile, besides giving you significant advantage over the competition by maximizing your overall score.

KEY FEATURES

- Provides comprehensive coverage of all the topics of the NEW 2019 Syllabus
- Explains concepts in a simple and lucid language for easy understanding
- Includes numerous Tips as well as shortcut tricks to help solve tough questions in the quickest possible time
- Includes Lecture Videos for all chapters which can be viewed via the Oxford Areal app (available free on Google Play Store and iOS App Store)
- Provides numerous Practice Questions at the end of each chapter along with section-wise coverage of Previous Years' Question Papers
- Enables real-time practice through five free Mock Tests, which can be accessed on the portal *Egzaminer* using a scratch code provided in the inside cover

CONTENTS AND COVERAGE

The syllabus of the UGC-NET exam is covered in the following ten chapters of the book.

Chapter 1 *Teaching Aptitude* discusses the nature, objectives, characteristics, and basic requirements of teaching. The chapter also highlights the characteristics of learners, factors affecting teaching, and various methods of teaching and teaching support systems.

Chapter 2 *Research Aptitude* focusses on the basics of research, including its meaning, objectives, characteristics, and types. It also explains the importance of positivism and post-positivitic approach to research, besides explaining the steps of research, and thesis writing, and also research ethics and some other commonly used terms.

Chapter 3 *Comprehension* explains the basics of comprehension, the approaches for finding answers to questions, and the common mistakes which aspirants commit while answering questions, while Chapter 4 *Communication* discusses the types of communication, barriers in communication, effective classroom communication, and mass media and society.

Chapter 5 *Mathematical Reasoning and Aptitude* includes topics such as coding–decoding, blood relations, directions, series, and mathematical reasoning and Chapter 6 *Logical Reasoning* includes topics such as syllogism, square of opposition, statements and assumptions, assertion and reason, and Indian logic.

Chapter 7 *Data Interpretation* highlights that to better understand data it needs to be presented in the form of tables, charts, or graphs.

Chapter 8 *Information and Communication Technology* discusses the role of ICT and its applications in education. It also highlights the various digital initiatives in the Indian education scenario.

Chapter 9 *People Developement, and Environment* includes topics such as people and environment interaction, pollution and its impact on environment, and mitigation strategies for natural hazards. The chapter also highlights various conventions related to climate change held in India and across the globe.

Chapter 10 *Higher Education System* analyses the current scenario of education in India, its evolution from ancient times, and the problems related to higher education. The chapter also includes topics on governance, polity, and administration.

Appendix *Solved Question Papers* The book also includes an appendix comprising the latest five solved questions papers—December 2018, July 2018 (retest), July 2018, November 2017, and January 2017.

This book will not only be helpful for aspirants of UGC-NET exam, but can also be used by teachers and educators. Moreover, candidates appearing in other competitive exams, such as the bank tests, Railway Recruitment Board (RRB) tests, UPSC CSAT, State Civil Services CSAT, will find the chapters on Comprehension, Mathematical Reasoning and Aptitude, Logical Reasoning, and Data Interpretation helpful.

Doubts and suggestions are welcome and can be sent to me at harpreetkaur.theofficial@gmail.com or on Facebook or YouTube with the username @harpreetkaur.theofficial.

ACKNOWLEDGEMENTS

Harpreet Kaur

About NTA UGC-NET Exam ▶

National Testing Agency (NTA) has been given the responsibility of conducting UGC-NET by the University Grants Commission (UGC). UGC-NET is conducted to determine the eligibility 'only for Assistant Professor' and 'for Junior Research Fellowship and Assistant Professor both' in Indian universities and colleges. For the first time, in December 2018 the exam was conducted exclusively in the computer-based mode.

Eligibility

	Minimum marks in master's degree (without rounding off)
General Category	55%
Other Backward Classes (OBC) belonging to non-creamy layer/	50%
Scheduled Caste (SC)/Scheduled Tribe (ST)/Persons with Disability (PwD) category	
Transgender Category	50%
Ph.D. degree holders who have completed Master's level examination on or after 19 September 1991	50%
Final year students can also apply	

Age Limit

Assistant professor	No age limit
JRF	30 Years

Papers

	Duration	Questions	Marks
Paper-I	1 hour	50	100
Paper-II	2 hours	100	200
Total	3 hours	150	300

Relaxations

OBC (Non-creamy layer), SC/ST/PwD/Transgender categories and women applicants	5 years
Candidates with Research Experience	Duration of Research (Max. 5 years)
Candidates with LLM degree	3 years
Candidates who served in Armed Forces	Service Duration (Max. 5 years)

Note: Total relaxation should not be more than 5 years.

Important notes

1. Mark appearing for 'both JRF and Assistant Professor' in the form. Candidates who mark 'Assistant Professor only' will not be considered for award of JRF.
2. The award for JRF is valid only for three years within which the awarded candidate has to join the Ph.D. for availing the benefit of JRF.
3. There is no negative marking for attempting wrong answers.

Important websites

Online Registration: www.ntanet.nic.in
Syllabus and NET Certificates: www.ugcnetonline.in
Official Mock Tests: data.nta.ac.in/Quiz

Strategy to Crack NET Exam in the First Attempt

1. Try to understand the syllabus. Watch the lecture video provided with each chapter for better understanding.

2. Set your target score on the basis of cut-off of previous exams.

3. Analyse the trend from the previous years' questions provided at the end of each chapter.

4. Make a list of your strong and weak areas; then plan accordingly.

5. STAY FOCUSED. Before starting the chapter, take a look at the previous years' questions.

6. Follow the chapter thoroughly and then attempt the questions. It will give you an idea about your preparation level. If you are able to solve questions, then proceed to the next chapter. But if you are unable to solve questions, then revise the chapter once more.

7. Practise the shortcut tricks provided in the chapters on Comprehension, Mathematical Aptitude and Reasoning, Logical Reasoning, and Data Interpretation.

8. Acquire time management skills so as to complete the paper on time.

9. Take short breaks during the study sessions.

10. REVISION IS THE ONLY KEY to remember things. If you don't revise from time to time, you will not be able to recall the topics and facts in examination hall.

11. ATTEMPT MOCK TESTS for better preparation. **To avail the five mock tests that have been provided with this book, visit www.egzaminer.com**.

12. If you get stuck anywhere or need any help, contact the author at harpreetkaur.theofficial@gmail.com

13. Read the newspaper. It will help in staying updated with the latest facts and reports. Also, it will help in improving vocabulary and reading speed which will help in comprehension.

14. DO NOT IGNORE PAPER-I.

15. Do not overload yourself with too many study material.

16. Do not waste time in discussions about the expected cut-off.

17. BE CONFIDENT about your preparation.

> If you can dream it, you can achieve it!
> Good Luck

Syllabus

Paper-I   **General Paper on Teaching and Research Aptitude**   **Code No. 00**

The main objective is to assess the teaching and research capabilities of the candidates. The test aims at assessing the teaching and research aptitude as well. Candidates are expected to possess and exhibit cognitive abilities, which include comprehension, analysis, evaluation, understanding the structure of arguments, deductive and inductive reasoning. The candidates are also expected to have a general awareness about teaching and learning processes in higher education system. Further, they should be aware of the interaction between people, environment, natural resources and their impact on the quality of life.

The details of the syllabus are as follows:

Unit	Contents
Unit-I	**Teaching Aptitude** • Teaching: Concept, Objectives, Levels of Teaching (Memory, Understanding and Reflective), Characteristics and Basic Requirements. • Learner's characteristics: Characteristics of Adolescent and Adult Learners (Academic, Social, Emotional and Cognitive), Individual Differences. • Factors Affecting Teaching Related to: Teacher, Learner, Support material, Instructional Facilities, Learning Environment and Institution. • Methods of Teaching in Institutions of Higher Learning: Teacher-centred vs Learner-centred Methods; Off line vs On line Methods (Swayam, Swayamprabha, MOOCs, etc.). • Teaching Support System: Traditional, Modern, and ICT Based. • Evaluation Systems: Elements and Types of Evaluation, Evaluation in Choice Based Credit System in Higher Education, Computer-based Testing, Innovations in Evaluation Systems.
Unit-II	**Research Aptitude** • Research: Meaning, Types, and Characteristics, Positivism and Post-positivistic Approach to Research. • Methods of Research: Experimental, Descriptive, Historical, Qualitative and Quantitative Methods. • Steps of Research. • Thesis and Article Writing: Format and Styles of Referencing. • Applications of ICT in Research. • Research Ethics.
Unit-III	**Comprehension** • A passage of text be given. Questions be asked from the passage to be answered.
Unit-IV	**Communication** • Communication: Meaning, Types and Characteristics of Communication. • Effective Communication: Verbal and Non-verbal, Inter-cultural and Group Communications, Classroom Communication. • Barriers to Effective Communication. • Mass Media and Society.
Unit-V	**Mathematical Reasoning and Aptitude** • Types of Reasoning. • Number Series, Letter Series, Codes and Relationships. • Mathematical Aptitude (Fraction, Time and Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages etc.).

Unit	Contents
Unit-VI	**Logical Reasoning** • Understanding the Structure of Arguments: Argument Forms, Structure of Categorical Propositions, Mood and Figure, Formal and Informal Fallacies, Uses of language, Connotations and denotations of Terms, Classical Square of opposition. • Evaluating and Distinguishing Deductive and Inductive Reasoning. • Analogies. • Venn Diagram: Simple and Multiple Use for Establishing Validity of Arguments. • Indian Logic: Means of Knowledge. • Pramanas: Pratyaksha (Perception), Anumana (Inference), Upamana (Comparison), Shabda (Verbal testimony), Arthapatti (Implication) and Anupalabddhi (Non-apprehension). • Structure and Kinds of Anumana (Inference), Vyapti (Invariable Relation), Hetvabhasas (Fallacies of Inference).
Unit-VII	**Data Interpretation** • Sources, Acquisition and Classification of Data. • Quantitative and Qualitative Data. • Graphical Representation (Bar-chart, Histograms, Pie-chart, Table-chart and Line-chart) and Mapping of Data. • Data Interpretation. • Data and Governance.
Unit-VIII	**Information and Communication Technology (ICT)** • ICT: General abbreviations and terminology. • Basics of Internet, Intranet, E-mail, Audio and Video-conferencing. • Digital initiatives in higher education. • ICT and Governance.
Unit-IX	**People, Development and Environment** • Development and Environment: Millennium Development and Sustainable Development Goals. • Human and environment interaction: Anthropogenic Activities and Their Impact on Environment. • Environmental Issues: Local, Regional and Global; Air pollution, Water Pollution, Soil Pollution, Noise Pollution, Waste (Solid, Liquid, Biomedical, Hazardous, Electronic), Climate Change and its Socio-Economic and Political Dimensions. • Impacts of Pollutants on Human Health. • Natural and Energy Resources: Solar, Wind, Soil, Hydro, Geothermal, Biomass, Nuclear, and Forests. • Natural Hazards and Disasters: Mitigation Strategies. • Environmental Protection Act (1986), National Action Plan on Climate Change, International Agreements/efforts -Montreal Protocol, Rio Summit, Convention on Biodiversity, Kyoto Protocol, Paris Agreement, International Solar Alliance.
Unit-X	**Higher Education System** • Institutions of higher learning and education in Ancient India. • Evolution of Higher learning and research in Post-Independence India. • Oriental, Conventional, and Non-conventional Learning Programmes in India. • Professional, Technical, and Skill-based Education. • Value Education and Environmental Education. • Policies, Governance, and Administration.

Note: (i) Five questions each carrying 2 marks are to be set from each module.

(ii) Whenever graphical/pictorial question(s) are set for sighted candidates, a passage followed by equal number of questions and weightage be set for visually impaired candidates.

Contents

Appendix

Oxford Areal

Setting up and using the free Oxford Areal app is easy. Simply follow the steps given below.

Oxford **Areal** is a magical app that makes your textbook come alive! The digital content can be accessed through the ▶ icon marked on the relevant pages.

1 Search and install the free Oxford Areal app from the App Store (iOS)/Play Store (Android).

2 Run the app and locate your book using the SEARCH box.

3 Tap the book cover to select it.
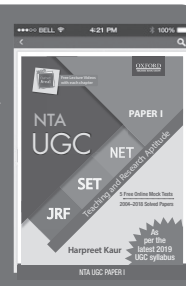
4 Tap GET THIS BOOK.

5 Tap SCAN and scan any page that has the ▶ icon. Tap DOWNLOAD to save the Oxford Areal content for that page.

6 Once you have scanned and downloaded a page, you will be able to view the digital content linked to it offline. To do so, simply tap the cover of the book and then the scanned page. To scan a new page, tap SCAN.
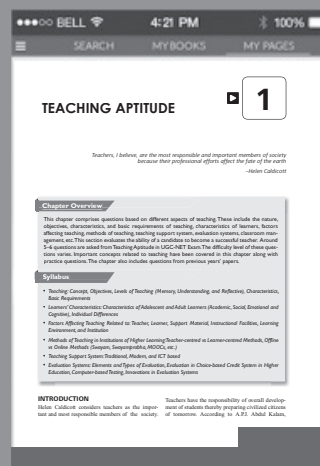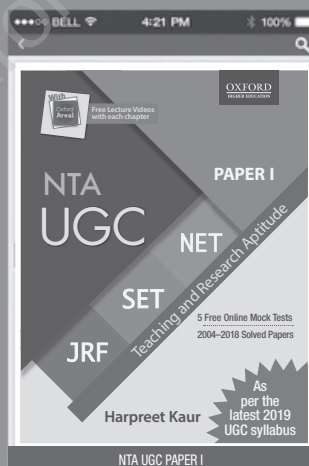
Use Oxford Areal to view Lecture Videos of chapters.

TEACHING APTITUDE

Teachers, I believe, are the most responsible and important members of society because their professional efforts affect the fate of the earth

–Helen Caldicott

Chapter Overview

This chapter comprises questions based on different aspects of teaching. These include the nature, objectives, characteristics, and basic requirements of teaching, characteristics of learners, factors affecting teaching, methods of teaching, teaching support system, evaluation systems, classroom management, etc. This section evaluates the ability of a candidate to become a successful teacher. Around 5–6 questions are asked from Teaching Aptitude in UGC-NET Exam. The difficulty level of these questions varies. Important concepts related to teaching have been covered in this chapter along with practice questions. The chapter also includes questions from previous years' papers.

Syllabus

- *Teaching: Concept, Objectives, Levels of Teaching (Memory, Understanding, and Reflective), Characteristics, Basic Requirements*
- *Learners' Characteristics: Characteristics of Adolescent and Adult Learners (Academic, Social, Emotional and Cognitive), Individual Differences*
- *Factors Affecting Teaching Related to: Teacher, Learner, Support Material, Instructional Facilities, Learning Environment, and Institution*
- *Methods of Teaching in Institutions of Higher Learning: Teacher-centred vs Learner-centred Methods, Offline vs Online Methods (Swayam, Swayamprabha, MOOCs, etc.)*
- *Teaching Support System: Traditional, Modern, and ICT based*
- *Evaluation Systems: Elements and Types of Evaluation, Evaluation in Choice-based Credit System in Higher Education, Computer-based Testing, Innovations in Evaluation Systems*

INTRODUCTION

Helen Caldicott considers teachers as the important and most responsible members of the society.

Teachers have the responsibility of overall development of students thereby preparing civilized citizens of tomorrow. According to A.P.J. Abdul Kalam,

'Teaching is a noble profession that shapes the character, calibre, and future of an individual. If people remember me as a good teacher, that will be the biggest honour to me'.

The meaning of 'teaching' is *to instruct someone or impart knowledge regarding a subject or a skill*. It is the process of flow of ideas, instructions, and knowledge from one mature person (teacher) to other less mature persons (students). Teaching has been defined by various experts in the following ways:

Teaching is defined as an interactive process primarily involving classroom talk which takes place between teacher and pupil and occurs during certain definable activity.

–Edmund Amidon

Teaching process is designed and performed to produce change in student behaviour.

–Clarke

Teaching is an intimate contact between a more mature personality and a less mature one which is designed to further the education of the latter.

–Morrison

Teaching is concerned with the activities which are concerned with the guidance or direction of learning of others.

–Ryan

Teaching is the stimulation, guidance, direction, and encouragement of learning.

–Burtan

Teaching needs three qualities, **Knowledge**, **Communication Skills**, and **Aptitude**.

When you think about 'teaching', there will be an image in your mind of an interaction between a teacher and a group of students in a classroom set-up. This is 'formal teaching'. But there can be teaching even outside the classroom as well. This is 'informal teaching', where one learns from family, friends, society, etc. So, teaching can be formal or informal. Teaching leads to skill development which improves the prosperity of the nation as educated and skilled workforce will earn better. The meaning of 'aptitude' is the ability to do something. 'Teaching Aptitude' means the tendency to teach. Questions based on Teaching Aptitude relate to different aspects of teaching and test the ability of a candidate to teach.

> ## *Sustainable development goals*
>
> **Aim:** To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030.

OBJECTIVES OF TEACHING

The objectives of teaching are given below:

- To provide knowledge and skills to learners so that they can cope with the fast-changing world
- To mould and shape learners
- To nurture students during all stages of learning
- To inculcate values, morals, punctuality, and discipline in students
- To develop a sense of solidarity, brotherhood, communal unity, teamwork, leadership, etc., in learners with the use of classroom activities
- To prepare students to be better citizens of tomorrow

In other words, the main objective of teaching is all-round development of students.

LEVELS OF TEACHING

Memory Level

- The main proponent of Memory Level of teaching is Herbart.
- This is the initial level of teaching and a prerequisite for Understanding and Reflective levels of teaching.
- The different phases of memory include learning, retaining, recalling, and recognizing.
- At this level, the teacher focuses on memorization of facts and information by learners. There is no attention on understanding of information, procedures, and concepts.
- The habit of rote learning is developed at this stage so that learners can retain and recall the information whenever required.
- Teachers occupy the primary position with their authoritarian and dominant role, while learners occupy the secondary position.
- At this level, teacher-centred and subject-centred methods are used.

- It is suitable especially for lower classes.
- Oral and written tests and essay-type questions are used to evaluate the learning.

Understanding Level

- The main proponent of Understanding Level of teaching is Morrison.
- This level is an extension of Memory level. It also lays the foundation for Reflective level.
- The memory level of teaching focused only on rote memorization of concepts, while at the understanding level, emphasis is on mastery of the subject by developing understanding and insights.
- At this level, learners get to know about the meaning of concepts, generalizations, principles, and theories along with their applications.
- Teachers and learners play an active role in the development of intellectual behaviour in learners.
- Techniques used are teacher-centred and subject-centred.
- More comprehensive techniques like essay and objective-type questions are used for evaluation at the understanding level.
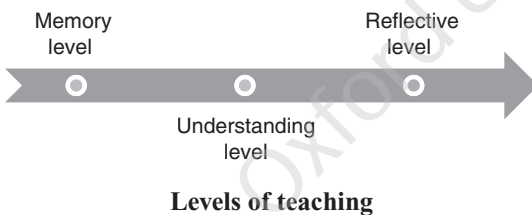
Levels of teaching

Reflective Level

- The main proponent of Reflective Level of teaching is Hunt.
- It is the highest level of teaching and makes use of knowledge and research skills of learners for solving real-life problems.
- It involves the use of problem-centric approach.
- Classroom environment is open and independent at this level of teaching.
- It also leads to the development of creative skills.
- Learners occupy the primary position and participate actively in learning, while teachers playing democratic role occupy the secondary position.
- Techniques used are student-centred.
- It is useful especially for higher classes as students of lower classes might not possess the requisite skills.
- Tests with essay-type questions are used for evaluation at this level. Also, there is evaluation of attitude, beliefs, involvement in learning and development of critical and creative skills.

NATURE AND CHARACTERISTICS OF TEACHING

Teaching is a science   Teaching is a science as it is a systematic, logically planned activity. The aim of teaching is to shape the behaviour of students in a desired manner and it is outlined before starting teaching. It involves the use of scientific strategies, practices, and techniques to enhance learning. Teachers experiment with different strategies to test their effectiveness among themselves and among students. Teachers also maintain a record of the score of students in tests to keep track of their performance.

Teaching is an art   Teaching is based on creativity of the teacher to use different methods and aids of teaching. What suits one student, may not suit others; so teachers have to adjust the strategies, practices, and techniques to the requirements, levels, and personality of the students. There is flexibility in teaching. Teaching also depends upon the aptitude, ability, personality, and knowledge of the teacher. Thus, teaching is an art.

Teaching is a craft   A craft requires skills or a set of skills that have been acquired through experience. Teaching is also a craft as it requires some skills like communication skills, creative thinking, critical thinking, class management skills, presentation skills, and confidence. It should be noted that these skills are not inherent always, but these can be learned through experience, observation, or training. Successful career in teaching is an outcome of knowledge, skills, and hard work.

Teaching is a moral activity   The purpose of education is all-round development of students.

Teachers should not just focus on the prescribed syllabus while ignoring the moral development of students. Students are the citizens of tomorrow. Classroom plays an important role in shaping them into citizens with good moral character. Moral and ethical aspects should be integrated in the curriculum.

Teaching is dynamic   The teacher's activities are influenced by various qualities and incidents and change accordingly. They are not executed in strict routines and regimes. So, teaching is dynamic and flexible.

Teaching is a complex activity   Teaching is a science, an art, as well as a craft. Due to these multiple aspects of the nature of teaching, it is a complex activity for which diverse sets of skills and abilities are required. A teacher has to deal with students of different personalities at the same time. While planning the teaching activity, a lot of factors have to be considered like student's prior knowledge, pace of learning, interests, etc.

Teaching is diverse   Diverse means 'showing a great deal of variety'. There is diversity in every classroom; so teachers have to use diverse sets of strategies, methods, and techniques depending upon the students.

Teaching is continuous   Teaching can be seen as a lifelong learning process. It is not completed in just one step; rather it is a continuous process. Learning is now considered to be continuously a part of the journey from 'Cradle to Grave'. Robert E. Lee remarks 'the education of a man is never completed until he dies'.

Teaching can be formal or informal   As seen already, teaching can be formal, as the interaction between teacher and student in a classroom set-up. On the other hand, teaching can also take place outside the classroom, which is informal teaching.

Teaching is interactive   Teaching is a two-way interaction between the teacher and learners. There is flow of knowledge from both the sides. Teachers as well as students learn in this communication process. Earlier, teaching practices were more teacher-centric, but now the focus has shifted to learners.

Students are now encouraged to ask questions and take part enthusiastically in classroom activities. Teaching should be a dialogue, instead of being a monologue.

Other than the characteristics mentioned above, teaching is a rational and reflective process. It is goal-oriented, the goal here is the all-round development of students. Teaching facilitates learning.

> *A teacher is like a small ship sailing from the land of ignorant people to the land of knowledgeable people.*
> —Socrates

BASIC REQUIREMENTS OF TEACHING

- The basic requirements of teaching include *Teacher* (the independent variable) and *Student*s (the dependent variable).
- The teacher uses different methods, strategies, aids, and learning materials, which act as *intervening variables*.
- Teaching is a continuous process, so patience, motivation, determination, and focus are the real forces which keep students on track.
- Teaching is a complex activity; so the teacher needs to be devoted and determined for the better future of students.
- Students should also have an interest in the subject, activities, learning materials, etc.
- Classroom activity facilitates learning and helps students retain information for a longer period.
- There is need of continuous and comprehensive evaluation so as to assess the performance of students and suggest remedial measures for improvement.
- Discipline is an important requirement of teaching. In the absence of discipline in the class, the teacher will not be able to teach students, no matter how qualified he/she is.
- Classroom environment should be such that it encourages effective communication and interaction.
- Knowledge of teaching methods, effects of teaching, principles of teaching, knowledge of subject, knowledge of the nature of students, etc., are also required for effective teaching.

PRINCIPLES OF TEACHING

Principle of activity   The teacher should involve the students in learning through some activity. This will help in better retention and they will not forget what they have learnt. If the teacher is not able to engage the students, then they will not focus on what is being taught. Activities can be classified into physical activity and mental activity. Benjamin Franklin said, 'Tell me and I forget. Teach me and I remember. Involve me and I learn'. So, learning takes place when students are involved in it. This principle is used in Montessori Method, Role Playing Method, Project Method, Kindergarten Method, etc.

Principle of interest   According to this principle, students must have interest in the class. A teacher should only teach if the students have interest. In case, students lack interest, then the teacher should first develop curiosity in them for learning. It can be done by telling them how they will be able to use the new information in real life or by giving questions first and then telling the concept used to answer them. The teacher should relate theoretical knowledge with practical examples from real life. He can also improve or change the teaching method if students lack interest. Teaching aids can also be used to capture the interest of students.

Principle of linking with life   Theoretical knowledge should be integrated with examples from real life. By this, students will learn at a faster pace and they will be able to retain the new information which they have gained.

Principle of definite aim   The aims of teaching must be predetermined and clearly defined so that the teaching activities can be planned accordingly along with the selection of teaching method and aids. The aim and objective of the course and lesson should also be communicated to students at the beginning of class. This will help in developing curiosity in them.

Principle of selection   Material should be selected in such a way that it helps in fulfilment of the aims of teaching. The content should be updated from time to time with respect to the updates in the field. It should also be adjusted according to the needs of the students.

Principle of planning   Teaching activities, methods, and aids should be planned in such a way that they help in optimum use of resources for the fulfilment of predetermined goals of teaching within the time limit. Without planning, it is difficult to complete the syllabus within the specified time. Course plan, lesson plan, test schedules, assignments, etc., should be planned.

Principle of division   It is not possible for a teacher to teach a whole concept at once. The teacher should divide the topic into smaller units which are interrelated, so that on completion of one unit, students should be curious to learn the next unit. This makes learning easy and interesting as they will be dealing with only one unit at a time.

Principle of revision   It is human tendency to forget whatever we read even within a few days. So, to retain knowledge, revision is compulsory. Students should revise at home what they have covered in the class. Homework should also be planned in such a way that it leads to revision of class work. Tests should be planned from time to time so that students revise the content continuously.

Principle of democratic dealing   The teacher can play a democratic or authoritarian role. If the teacher's behaviour is authoritarian, then students will get little or no opportunity to participate in learning and they will be passive listeners. This will also affect the confidence of students. But if the behaviour of the teacher is democratic, then students will actively participate in learning. Student-centric methods should be used in such classrooms which will help in developing self-confidence, self-esteem, and self-respect in students.

Principle of motivation   Every student possesses some unique skill and this need to be appreciated. If a student is not much good in studies, he might be good in some other activities. The teacher should encourage the skills of students and motivate them to pursue a career of their choice and encourage them to sharpen their skills for a better future. Students should be motivated for participating actively in learning for better results. Rewards, gifts, praise, etc., can be used for motivating students. Stories of great personalities and their experiences can also arouse motivation in students.

Principle of recreation   Recreation can be used for tackling the fatigue of lengthy classes which usually end with bored and frustrated students. It will enhance creativity in class and engage the students.

Principle of individual differences No two students have the same ability, skill, and personality. So, the teacher should be able to recognize the individual difference in students and address their specific needs for effective teaching. Though students have individual differences, teaching should be planned in such a way that all students have equal opportunities and no one is left behind.

Principle of remedial teaching The teacher should be able to identify and understand the problems, and suggest remedial measures for these problems.

Principle of sympathy A teacher should be kind, caring, and sympathetic. This will help him in building cordial and trustworthy relation with students. This will also have an effect on the teaching.

Principle of creativity The teacher should encourage creativity and critical thinking in students. Teaching methods should be selected in such a way that they help in enhancing the students' creativity and critical thinking.

Principle of reinforcement Teachers can reinforce students verbally, by praising them, or by giving gifts and rewards for good and responsible behaviour, correct answers, good grades, etc. This will encourage them to continue their hard work and practice good habits.

Principle of training the senses Sensory organs play an important role in learning. Different activities, methods, and aids involve the use of different sensory organs such as the eyes and ears.

DID YOU KNOW?

World Teachers Day is celebrated every year on 5th October.

How to Teach

A teacher should keep the following in mind while teaching:

1. Students understand simple things easily. So, a teacher should approach from *simple to complex* content. Explain simple concepts first, and then the complex.

2. It is easy for students to build new knowledge if they are able to relate it to what they already know. So, teaching should flow from *known to unknown*. Past experiences of the students should be linked to new teaching.

3. Similarly, the teacher can plan the lesson to flow from *seen to unseen*. Such an approach can be used for better understanding of students.

4. The teacher should explain the established facts first and then move on to abstract facts. So, teaching should proceed from *concrete to abstract facts*.

5. Specific facts should be discussed first, and then these should be used to generalize, by following the approach from *particular to general*. Such an approach is inductive in nature.

6. It might be difficult for students to understand the whole topic at once. The teacher should present the whole topic by breaking it into smaller parts, so that they can grasp it easily. The approach used here is from *whole to part*.

7. While planning the lecture, the teacher should keep in mind the psychological needs of students first and then go into the logical arrangement of concepts. By addressing the psychological needs first, the teacher will be able to engage the students. So, the lesson planning should be from *psychological to logical*.

8. The teacher should first teach *analysis* and then *synthesis*. According to *the Oxford English Dictionary*, 'analysis' means 'the process of separating something into its constituent elements' and 'synthesis' means 'the combination of components or elements to form a connected whole'. So, for better understanding and clarity, a problem should be divided into parts for analysis and then the parts can be combined to solve the whole problem by synthesizing.

9. Empirical knowledge is based on experience while rational knowledge is based on logic. Teaching can start with *empirical knowledge* and *proceed to rational knowledge*. Empirical knowledge is specific and rational knowledge is general.

10. The teacher should always encourage *self-study* among students.

LEARNERS' CHARACTERISTICS

There has been a growing usage of the term 'Learner' as a synonym for 'Student', similar to the use of 'Learning' for 'Teaching'. But there is some difference between these terms. Learning can take place even without teaching, but teaching is unimaginable without some form of learning. Similarly, the term 'Learner' is broader than 'student', as learners can learn even in the absence of the teacher, but a teacher is required for students. Learning can take place inside as well as outside the classroom, but teaching is only inside the classroom. Learning is a lifelong pursuit, so the excitement and willingness to find and learn should be nurtured throughout life. The characteristics of learners revolve around their personality, attitude, confidence levels, prior knowledge, ability, etc.

On the basis of nature, characteristics of adolescent and adult learners can be categorized as: *personal, academic, social* or *emotional,* and *cognitive.*

Personal characteristics	Academic characteristics	Social or emotional characteristics	Cognitive characteristics
• Include demographic information of the learners • Age, gender, maturity level, language, socioeconomic status, cultural background, etc.	• Learning goals, prior knowledge, and educational level of learners	• Based on the relation of a group or of an individual with the group • Group structure, place of the individual within a group, sociability, self-image, mood, etc.	• Determine how the learner perceives, remembers, thinks, solves problems, organizes, and represents information in her/his brain • Attention span, memory, mental procedures, and intellectual skills

The teacher should plan the classroom activity on the basis of the above-stated characteristics of the students.

Characteristics of good learners

1. Good learners are **persistent**. The process of development for good learners is continuous and gradual.

2. They know how to **make use of their knowledge**, that is, how it can be used to solve real-life problems.

3. They **share their knowledge** with others and do not restrict it to just themselves. They know very well that knowledge increases by sharing.

4. They are **free from negative emotions** which weaken the learning abilities such as anger, jealousy, greed, and so on.

5. They are always **curious to learn** about something they do not know. They are always in search of new knowledge.

6. They always **find time for reading, analysing, and evaluating** the information they have gathered.

7. They **enjoy learning and don't dishearten** over the hardships which arise in the journey of learning.

8. They have a lot of questions. They seek to **learn new things** while finding answers to their questions. As said by Langer, 'If we would have new knowledge, we must get a whole world of new questions'. So, getting answers also leads to another set of questions and the learning continues.

9. They have the ability to **associate new knowledge with what they know** already. Their knowledge base is updated continuously.

LEVELS OF LEARNING

Bloom's Taxonomy

In 1956, under the leadership of Dr. Benjamin Bloom a new vision for teaching, now called Bloom's Taxonomy, was developed which focused on understanding, analysing, and evaluating concepts, principles, and procedures.

According to Bloom's Taxonomy (also known as KSA), there are three domains of learning:

- Cognitive Domain – focuses on **K**nowledge
- Psychomotor Domain – focuses on **S**kills
- Affective Domain – focuses on **A**ttitude

Cognitive domain   Cognitive domain comprises six sub-categories, namely (arranged from simple to complex) *Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation*. Knowledge, comprehension, and application involve low order thinking skills and the other three, analysis, synthesis, and evaluation, involve high order thinking skills.

Cognitive domain was revised by Lorin Anderson and David Krathwohl in 2001. The new version involves *Remembering, Understanding, Applying, Analysing, Evaluating,* and *Creating*.

Affective domain   This domain was proposed by Krathwohl. It is concerned with feelings and emotions, which can be arranged as (from simple to complex) *Receiving, Responding, Valuing, Organization,* and *Characterization*.

Psychomotor domain   Also called **kinesthetic domain**, it relates to natural, autonomic responses or reflexes. There are different models of psychomotor domain. Simpson had included *Perception, Set, Guided Response, Mechanism, Complex Overt Response* (to know what will be the result immediately after performance), *Adaptation,* and *Origination*. Dave used *Imitation, Manipulation, Precision, Articulation,* and *Naturalization*. Harrow talks about movements by using *Reflex Movements, Fundamental Movements, Perceptual Abilities, Physical Abilities, Skilled Movements,* and *Non-Discursive Communication*.

Gagne's Nine Levels of Learning

It is also known as Gagne's Nine Conditions of Learning, Gagne's Nine Events of Instruction, or Gagne's Taxonomy of Learning. Robert Gagne in his book *The Conditions of Learning* identified the following mental conditions essential for effective learning:

Reception   Gain attention of students. Voice modulations, gestures, short introductory video, handouts, etc. can be used for this purpose.

Expectancy   Inform them about the objectives of what they are about to learn so that their interest will be developed.

Retrieval   Relate the new information with their prior knowledge.

Selective perception   Present the new information in an effective and easy-to-understand manner using different methods and aids depending on the needs and level of students.

Semantic encoding   Help students to learn and retain new information by use of examples, case studies, storytelling, etc.

Responding   At this stage, students can demonstrate what they have learnt through question–answer rounds, role playing, etc.

Reinforcement   Provide feedback to students on the basis of their responses and reinforce important points for their clearing doubts and helping in retaining new information.

Retrieval   Assess their performance through some tests.

Generalizations   Students should apply what they have learnt to new situations and conditions, then with practice they will be able to generalize it.

In general, the levels of learning can be simplified as shown in the below figure:
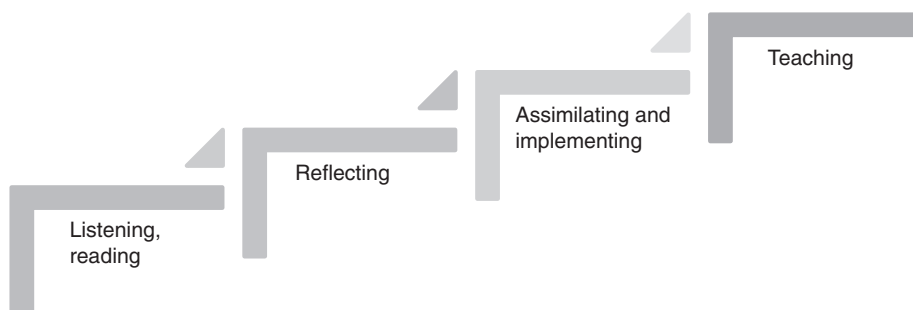
INDIVIDUAL DIFFERENCES AMONG LEARNERS

In the case of learning, 'one size fits all' is not true. Not everyone can learn in the same manner. For example, while some students cannot study without loud music, others need a calm environment. Some learners can be comfortable with online courses, but others may prefer textbooks over online study material. Thus, there are differences among learners. These differences are discussed below:

Intelligence There is difference in intelligence level of different learners. It can affect their ability to grasp content. Some learners can understand quickly, while others may need to spend more time. It also affects their ability to remember, recall, and reinforce.

Aptitude This is the ability to do something. The learner's aptitude affects his performance. In many research studies, it has been found that higher level of aptitude results in better performance in learning and retaining it. It is also related to critical thinking of the learners.

Age Age affects the curiosity to learn. We know that kids are more curious to acquire new knowledge. But as we grow older, our curiosity levels decrease.

Motivation Every learner may have different motivating force for learning a skill or anything else. It could be the desire of employment, better salary, business success, a hobby, or fulfilling parents' wish, etc. It will help learners in staying focused.

Personality The personality of a learner also impacts his ability to learn. His interaction with others will depend on his personality. Different personality traits such as extraversion, agreeableness, conscientiousness, neuroticism, and openness are related to job performance, academic achievement, leadership, and well-being.

Prior knowledge Prior knowledge of the learner also makes a difference in his learning ability. A learner will be able to learn better if he is able to relate it with his prior knowledge. If a person does not know the basic mathematical operations, then how will he learn advanced mathematics? So, prior knowledge and experience of the learner affects his learning.

Learning style Every learner has a different learning style. Some need complete silence, while others may need music to concentrate. Some may learn better with discussions, while others may like to study alone. Some may prefer e-books and other online materials, whereas others may be more comfortable with textbooks.

Attitude The attitude of the learner is also a very significant factor. A positive attitude will help in learning effectively. The different aspects of attitude such as interest, open-mindedness, cheerfulness, prejudice, and affection help in shaping the personality of the learner.

Environment For effective learning, the learner should be in a comfortable environment. Different learners can be comfortable in different types of environment. Some can learn better in groups or if there are other learners around them, such as in a library, whereas some others may prefer learning individually.

Health The health of the learner influences his ability to learn, remember, and recall. A learner with poor health will not be able to concentrate. The teacher should take extra care of a student with poor health; for example, a student with poor eyesight, can be seated in the first row in the classroom.

The individual differences of the learners are not addressed in teacher-centred methods of teaching, as in these methods, the teaching activities are of 'one size fits all' type. But in the case of learner-centred methods of teaching, the individual needs and differences of the students are addressed and also students have the option to learn as per their comfort level.

FACTORS AFFECTING EFFECTIVENESS OF TEACHING

Educational qualification For effective teaching, suitably qualified teachers should be employed. The teacher must possess the minimum qualification required as per the class level of students. A specialized teacher in the field teaches in a better way as compared to an unspecialized teacher.

Skills The teacher should have the appropriate skills needed for teaching. These include presentation skills, communication skills, ability to manage class,

etc. Some skills are inherent, while some are learnable. So, for effective teaching, the teacher must have gone through the prerequisite training before starting his job. If they don't possess these skills, then they may face problems in managing the class.

Building trust   The teacher's ability to build a trusting relationship with students also affects the effectiveness of teaching. The teacher should always be willing to help students if any problem arises. This will help in the creation of a safe, positive, and productive learning environment. Students will follow the advice of the teacher only if they trust him.

Pace of teaching and learning   The teacher should know about the pace and capacity of students and plan the course accordingly. If the pace of teaching is too fast, then students will not be able to match it and if it is too slow, then the syllabus will not be completed on time. So, the teacher should adjust the pace of teaching as per the need of the students to improve its effectiveness.

Ability to engage students   If the teacher doesn't have the ability to engage students, then it will be difficult for him to manage the class and present the content efficiently. Teaching methods and activities should be adjusted according to the characteristics of students so as to keep them focused.

Personality of teacher   In order to have productive learning environment, the teacher should have patient, caring, and kind personality. He/she should not be rude towards students. A dedicated teacher will ensure safe, positive, and productive classroom for students.

Learners   Learners are a significant part of the teaching–learning process. The aptitude, attitude, personality, prior knowledge, age, level of determination, etc., of the learners influences the effectiveness of the teaching.

Support material   The availability and use of the study material, audios and videos, online courses, online tests, and other teaching aids also increase the effectiveness of the teaching and learning.

Instructional facilities   These include the classrooms, laboratories, seminar rooms, projectors, whiteboards, and so on which are used in delivering instructions to students. Their availability ensures effective teaching, but if these are not available in adequate amount as per the number of students, then students will not be able to learn properly.

Characteristics of a good teacher

1. Well qualified and knowledgeable. A teacher with good knowledge of the subject will address the class confidently.
2. Acts as facilitator and encourages learners' ability to think, communicate, and work together with others.
3. Motivates students to succeed in life.
4. Plans the course content considering the pace and capacity of students.
5. Presents the learning material in an interesting manner so as to engage students.
6. A lifelong learner and keeps on updating himself continuously.
7. Has knowledge of different teaching models, methods, and strategies. He also knows about how to use these effectively according to the need and personality of students.
8. Has positive attitude and a good sense of humour.
9. A role model for students. His achievements and experiences act as a source of motivation for students.
10. Not authoritarian in class. He encourages students to take part in classroom activities.
11. Believes in justice. He manages classroom conflicts very well and further develops the feelings of brotherhood, communal unity, etc. in students to avoid conflicts in future.
12. Always keen in accepting feedback from students. He takes criticism positively and uses it in improving himself.

Learning environment Effectiveness of teaching also depends upon the learning environment. If the teacher and learner are comfortable in the surrounding environment, then the learning will be effective; else, both the teacher and students will be distracted, leading to ineffective learning. In a noisy class, no matter how well-qualified the teacher is, he will not be able to teach effectively.

Policies of the institution Effectiveness of teaching is also affected by the policies framed by institutions. These policies can give autonomy to the teacher or can control the classroom activity. If the teacher feels extremely controlled, then his performance will suffer. On the other hand, autonomy to teachers to choose teaching methods and classroom activities will bring an element of flexibility.

Other factors which affect effectiveness of teaching include the financial incentives offered to teachers, parental pressure, prior knowledge of students, dedication of teacher, interest of students, etc.

TEACHING MODELS

School faculties and individual teachers create life in schools by models of teaching, they choose and create.

–Bruce Joyce

For effective teaching, a teacher should have good knowledge of teaching models and should choose the appropriate model, keeping in mind the needs of students and the subject. These models help in boosting interest, creativity, motivation, and innovations. The different types of models are given as follows:
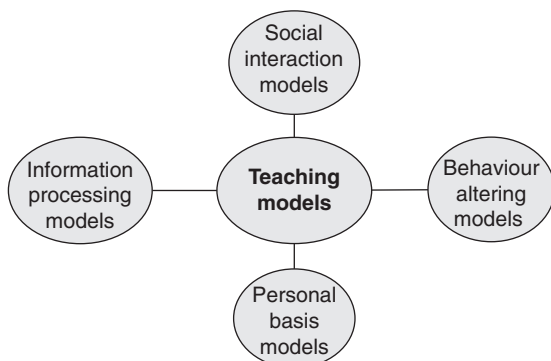
Social Interaction Models

This type of model focuses on the importance of social relations and interactions. According to these models, social interactions act as the source of learning. It is a student-centred approach for teaching. In such type of teaching, students participate in group activities such as group discussions, while the teacher monitors their activities. Students learn by way of questions, reflections, helping each other, etc. Commonly used strategies are *Group Discussions, Projects, Graffiti Model, Role Playing, Cooperative Learning, Social Inquiry,* etc.

SOCIAL INTERACTION MODELS

Group investigation model	– John Dewey and Herbart Thelim
Social inquiry model Laboratory model	– Benjamin Cox and Byron

Behaviour Altering Models

As the name suggests, these models of teaching focus on altering the behaviour of students so as to make them better citizens of tomorrow. B.F. Skinner is one of the proponents of this model. These models are based on achieving predetermined and observable goals and objectives. Common strategies used in such models are Desensitization, Direct Instruction, Direct Teaching, Direct Training, Behaviourism, Hunter Learning Model, Self-control, Simulation, etc.

BEHAVIOUR ALTERING MODELS

Mastery learning	– Benjamin Bloom, James Block
Direct instruction	– Tom Good, Jere Brophy, Carl Gereiter, Ziggy Engleman, Wes Becker
Simulation	– Carl Smith, Mary Smith
Social learning	– Albert Bandura, Carl Thoresen, Wes Becker
Programmed schedule (task performance reinforcement)	– B.F. Skinner

Information Processing Models

These are based on the ability of learners to process the information they receive from their surroundings. Some models encourage creative thinking, concept formation, hypothesis testing, etc., in learners, while others provide concepts and information directly. The different strategies used in these models help students to acquire, organize, process, and retain data and information so as to use it further for problem solving.

INFORMATION PROCESSING MODELS

Inductive thinking	– Hilda Taba, Bruce Joyce
Concept attainment	– Jerome Bruner, Fred Light hall, Tennyson, Cocchiarella, Bruce Joyce
Mnemonics	– Michael Pressley, Joel Levin, Richard Anderson
Advance organizers	– David Ausubel, Lawton and Wanska
Scientific inquiry	– Joseph Schwab
Inquiry training	– Richard Suchman, Howard Jones
Synectic	– Bill Gordont

Personal Basis Models

Such models enhance self-esteem, self-efficacy, and understanding. These relate to the uniqueness of each learner. The ultimate aim of such models is to stimulate creativity, self-expression, and confidence, so as to develop integrated, competent, and confident individuals. These take into consideration the individual differences which arise due to physical and social environment.
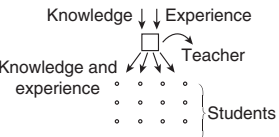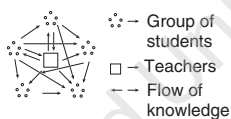
PERSONAL BASIS MODELS

Non-directive model	– Carl Rogers
Enhancing self-esteem	– Abraham Maslow
Relaxation and stress reduction, self-awareness	– Fritz Pauls and W. Schutz
Creative model	– William Gordon

METHODS OF TEACHING IN INSTITUTIONS OF HIGHER LEARNING

Effective teaching also depends upon the choice of appropriate teaching method. There are many methods which can be used by teachers depending on the basis of availability of resources, interest of learners, curriculum, level of students, policy of the institute, demand of subject, etc. The important teaching methods are given below:

Teacher-centred methods	Learner-centred methods
• It is a conventional approach.	• It is relatively a modern concept.
• The main focus is on the teacher.	• It focuses on students as well as instructor.
• Teacher delivers lecture to students who act as passive learners.	• Students are active learners due to their active participation in learning.
• Flexibility is lesser in such methods.	• These have greater flexibility as the learning needs to be adjusted according to the individual needs of students.
• Students work on their own and not in groups.	• Students can work in groups or on their own depending upon the activity.
• Teacher monitors students.	• Students can learn even in the absence of teacher.
• Learning is evaluated by teachers.	• Learning can be evaluated by teachers, students on their own, or by their peer groups.
• Teacher chooses the topic, study material, time to be devoted, classroom activities, evaluation techniques, etc. and students have no choice.	• Students have choice over the study material, learning activities, timelines, evaluation techniques, etc. Teacher can provide the syllabus for course and guide the students for referring to authentic sources.

Teacher-centred methods	Learner-centred methods
• There is usually pin-drop silence as students are not allowed to talk.	• Such classrooms are lively as students participate actively in discussions and activities that enhance student participation.
• There is generally one way flow of knowledge, i.e. from teacher to students.	• There can be multiple channels of flow of knowledge.
• Teacher centred methods include Lecture, Team Teaching, TV/Video Presentation, Differentiated Instruction, etc.	• Student-centred methods include Tutorial, Assignment, Project Work, Case study, Programmed Instruction, Computer Assisted Learning, Interactive Video, Open Learning, Personalized System of Learning, Heuristic Method, etc.

The teacher can also use a mix of both the teacher-centred and student-centred methods to achieve the desired goals.

Lecture Method

An oral presentation of the lesson by the teacher is known as Lecture. Lecture is considered as the most ancient method of instruction. It has propagated from the Idealism philosophy of teaching. It is the most ideal and most commonly used method for addressing large classrooms. Generally there is only one-way communication between teacher and student with little or no participation from learners.

Merits

• For addressing larger groups, usually lectures are presented.

• It is economic as more information can be provided to students in a short span of time.
• There is flexibility as the teacher can adjust the flow of information depending upon the time and needs of the class.

Demerits

• There is little or no participation from students' side.
• The teacher controls the flow of information.
• It has the tendency of becoming boring if the teacher has not planned properly.
• Individual needs of the students are not addressed.

Demonstration Method

Demonstration method is different from lecture method as instead of an oral presentation, teachers demonstrate the procedure to students for their better understanding. Demonstration means explaining or showing students practically the working of any procedure or object. It is most commonly used in teaching mathematics and sciences.

Merits

• It helps in boosting the interest of students which enhances understanding of the topic.
• Students remain more active while watching demonstrations.
• Ideas, procedures, and concepts can be explained in an effective way using demonstrations.

Demerits

• It can be costly sometimes due to the use of expensive materials.
• Students are not actively involved in demonstrations as they only watch the teacher using objects and they don't perform them by themselves.
• It can also be time-consuming.
• The teacher needs to be an expert in the field for giving demonstrations.

Depending upon the requirement of the class and subject, the teacher can use Lecture-cum-Demonstration method, by combining lecture with demonstration.

Heuristic Method

Heuristic method was proposed by Armstrong. The word 'Heuristic' is derived from Greek word 'heuriskein', which means 'find'. The aim of this method is to make students learn curiously by discovery, instead of receiving information as such from teachers. Students should try to explore, explain, describe, and predict the topic given to them by the teacher. Principles of activity, logical thinking, known to unknown, purposeful experience, self-thinking, self-study, etc. are used in Heuristic method. In this method, the teacher gives a topic or problem to students and they have to find the solution using library, laboratory, online resources, workshops, seminars, etc.

Merits

- It is a student-centred approach.
- The teacher encourages students to learn on their own.
- It focuses on developing scientific attitude in students for problem solving.
- It helps in the all-round development of students.
- It also develops confidence in students.

Demerits

- It is not meant for students of primary level.
- Not all students possess the same set of skills. So, below-average students will not be comfortable with this method.
- It is important here for students to have access to library, laboratory, and internet, but some institutes might not be able to provide these. So, in such circumstances, it will be difficult to use this method.

Flipped Classroom

A modern concept that has become popular since 2007, here teachers record their lectures and share them with students. It is named 'Flipped Classroom' as it is the opposite of a normal classroom. In a normal classroom set-up, the teacher instructs the students and gives them assignments as homework. But in a flipped classroom, the teacher shares the link for video lectures with students and they watch these at their own pace at home. The students then work on the assignments in the classroom.

Merits

- Students can study video lectures and handouts at their own pace.
- There can be better discussions on assignments in the classroom.

Demerits

- Teachers as well as students should be aware of the latest technologies which can be used for recording and sharing lectures.
- There could be problems if teachers and students do not have good internet connection.

Kinesthetic Learning

This is also known as *Tactile Learning* or *Hands on Learning*. In such learning, there is more emphasis on physical activities, instead of lectures or demonstration. Students learn by experiences, role playing, drama, sports, drawing, etc.

Merits

- It involves lesser use of technology.
- Such activities are good in engaging students so that they learn with greater interest and curiosity.
- It helps students in retaining what they have learnt.

Demerits

- Not all subjects can be taught using such method. For example, to teach students about rockets, it will not be affordable for every school to provide hands-on experience at the space centre.
- Students might understand the working easily using this method, but they will not have deep knowledge of concepts. To overcome this, it should be used with lecturing, but not as a substitute of lecturing.

Discussions

Discussions can act as a better source of learning than lecturing or explaining, as discussion involves two-way communication and lecture involves only one-way communication. There can be discussion between the teacher and students, or discussion between students, where the teacher initiates the discussion and then listens to the viewpoint of students. At the end of the discussion, the teacher can summarize all the points discussed. Discussions can be planned, partly planned, or totally unplanned.

Merits

- Discussions can enhance confidence of students, if they are encouraged to speak.
- There is a tendency of high student participation in discussions.
- It also improves communication skills, critical thinking, creative thinking, etc. of students.
- It is a group-centred approach.

Demerits

- It can turn out to be time-consuming.
- It may also lead to emergence of inferiority complex in introvert and shy students as they will have difficulty in participating in discussions.
- It is suitable only for small groups.

Team Teaching Method

In team teaching, not only one teacher plans the class activity, rather two or more teachers plan the activities, aids, evaluation strategies, etc., for the same set of students.

Merits

- It encourages friendship among teachers which will bring positivity in the learning environment.
- Different teachers have different teaching styles, ideas, so their collaboration will improve the learning.
- It is helpful for interdisciplinary approach in learning.
- It is a teacher-centred approach.

Demerits

- There is a need of consensus among teachers regarding the methods, aids, strategies, etc., to be used.
- Such an approach cannot be used for all subjects.

Open Learning

Open Learning is a form of learning in which there are no barriers of age, place, time, etc. Students can learn wherever and whenever they wish to. Learning is the responsibility of students. Even students have choice about when they will attend exams. Housewives, employed persons, students from remote areas, etc., can complete the course without any restriction of attending lectures. There is a difference between open learning and distance learning. Distance learning, also known as *correspondence course,* takes place when the teacher and student are geographically distant. Students can learn from postal courses, audio or video call, television programmes, books, newspaper, online materials, etc. UGC, CBSE, and other educational institutes provide video lectures to students through YouTube. Students can enrol for such forms of learning with Indira Gandhi National Open University (IGNOU), State Open Universities, or other universities offering open courses. But before enrolling, the student should verify the validity and authenticity of the institute and course from UGC's website. Also, there are online platforms like edX and others which offer courses offered by foreign universities as well as reputed Indian institutes free of cost.

Merits

- Open learning is a student-centred approach of learning.
- Students can study at their own pace, place, and time.
- It is helpful for those students who cannot attend regular classes.
- There are no restrictions on learning.
- Open learning has greater flexibility.
- It saves time and money.

Demerits

- There is a high tendency of getting distracted as students will not meet the teacher and other classmates every day. Everyday interactions keep one aware of the deadlines; also students learn from the peer groups.
- Students have to keep themselves motivated and dedicated to successfully complete the course.
- Many 'open learning scams' have been reported.

Project Method

It was developed by William Heard Kilpatrick. The Project method involves activity-based learning. Project can be static or working model, or it can be in the form of a report. Project work is also a part of many degree programmes. In project reports, students conduct research, carry out survey, and then present the findings of research in the form of a report. Projects can be used in sciences as well as social sciences. Projects can be allocated to students individually, or in groups.

Merits

- It is easy to evaluate.
- It is a student-centred method of learning.

Demerits

- It can be time-consuming.
- Readymade projects are also available in the market easily; if students purchase these, instead of preparing on their own, then the purpose of projects is not fulfilled.

Panel Discussion

In panel discussion, discussions about a topic are held among the panel members. Panel members can be chosen from within the class or subject experts can be invited for panel discussions.

Merits

- If planned and executed well, these can engage more listeners than a lecture or single speaker activity.
- Students will get to learn from experts in the field.
- By observing the discussions, students will learn how to communicate their ideas and viewpoints.

Demerits

- Discussion will not be of any use if the members do not have adequate knowledge regarding the topic.
- Rest of the class might get bored during such an activity.

Brainstorming

Brainstorming sessions are marked by spontaneity. In such sessions, participants have to share their opinion or idea about the topic. Ideas flow without any evaluation. Ideas are noted on a board or on paper, and then at the end of the session, the best ideas are chosen and similar ideas are clubbed. The teacher acts as facilitator in such sessions.

Merits

- The views presented by the students during the session are not subject to criticism.
- It is a group-centred approach.
- These can generate many ideas within a short span of time.

- There is greater scope for participation by almost all students.
- Such sessions boost creativity, confidence, and innovations.
- It can be used for small as well as large groups.

Demerits

- Some students might hesitate in participating.
- Such sessions may not always be effective.
- These may not always be peaceful sessions.
- More focus on quantity than quality.
- It can be time-consuming if not planned well.

Programmed Instruction

Programmed learning takes place in a series of controlled and sequential steps. Programmed material is provided to students and they cover it as per their convenience. One of the features of this method is immediate feedback to student. Students are provided correct answers immediately after they have solved the questions. They progress gradually with the content. Such type of method can also be used in the absence of the teacher. The programmer has to fragment the topic into small sections. There will be evaluative tests after each section and correct responses are provided immediately.

Merits

- It addresses individual differences.
- 'Learning by doing' principle is used in this method.
- There is flexibility in teaching and learning.

Demerits

- This is time-consuming, so it will be difficult to cover the entire syllabus in a limited time period.
- It can be costly.
- It is not meant for primary level students.
- There is need of experts for planning programmed instructions.

Personalized System of Instruction

Personalized Learning refers to a set of methods, strategies, experiences, and techniques which are used to address the diverse needs, interests, and aspirations of the students. Learning style, pace of content, environment can vary from student to student on the basis of experience, prior knowledge,

requirements, interest, and goals of students. The learner has choice over what material he should use to meet the course targets. The course objective also varies from student to student. It is a student-centred method of teaching. The students learn from what they do. They accomplish their own learning. It is an alternative to 'one size fits all' approach of teaching.

Merits

- Learning is self-paced and student-centred.
- Learners are more autonomous and independent.

Demerits

- Students need to be self-disciplined in order to complete the course within the specified duration.
- It cannot be used for primary level students.
- It will be difficult to use in case of swiftly changing course content.

Differentiated Instruction

The Differentiated system of instruction is different from personalized system of instruction. The latter is student-centred, while the former is teacher-centred. The goals to be achieved will be the same, but the teacher can differentiate the subject matter, learning practices, learning environment, etc., to address the individual needs of students. There is flexibility in instruction, grouping, and evaluation.

Merits

- It is a teacher-centred method.
- It is flexible and can be adjusted according to the requirement of students.
- It can be used effectively for small groups.

Demerits

- The teacher needs to understand all students before planning differentiated activities for them.
- There will be difficulty in implementing such a method for a large group of students.

Role Playing

In this method, roles are assigned to students and then interaction takes place between them. This form of instruction is used to make students aware of the different persons and their perspectives. It helps in sharpening the critical thinking, creative thinking, debating, negotiating, and reasoning ability of students.

Merits

- It is interactive and helps students in retaining what they have learnt.
- It improves the communication skills of students.
- Such a method can be used effectively to shape the attitude of students.
- It helps in developing confidence in students.

Demerits

- It relates to real-life situations, which are very complex.
- The outcomes of such an activity cannot be pre-determined due to their unpredictable nature.
- Nature of students varies depending upon their personality; introverts and shy students will not be able to take part in such activities.

Simulation

Simulation is also a form of role playing. It is based on experimental learning, where students learn in an environment similar to real-life situations. This way they get prepared for solving problems similar to real-life situations. It is helpful for providing training to medical students, management students, defence forces, pilots, drivers, etc.

Merits

- It develops problem-solving abilities in students.
- It is economical.
- It helps in skill development.

Demerits

- Sometimes, expensive equipment may be required for training.
- It is not easy to recreate the real-life situations in artificial setting due to their complex nature.

TV or Video Presentation

Another way of engaging students is playing some educational video presentations or educational channels on television. It can be used specially for showing documentaries. There can be a discussion session or question hour followed by the presentation.

Videos can be shown in the classroom or these can be uploaded online. If it is uploaded online, then its link can be shared with students to watch it at their own pace.

Merits

- It can help in gaining the interest of students.
- Students will be able to retain information.
- Lectures of teachers from highly reputed institutes and other experts can be shown to students even in remote areas. For example, there are online lectures available of professors of IITs, IIMs, and other reputed institutes. Those who were not able to get admitted in these institutes can also watch these lectures and discussions online.
- Students can save video lectures for further use.

Demerits

- It is difficult to update videos with new information. If there is any update regarding a topic, then a new video should be recorded.
- It can be expensive, as software and equipment are required to record videos and present these in the class.
- For accessing online lectures and presentations, good internet connectivity is required.
- There is only one-way communication. Queries of students are not resolved as they cannot ask questions to experts in the video.

Live Sessions

Video presentation or telecast on television has the drawback of lack of two-way communication. This can be overcome with the use of Live Sessions. Teachers can go live on their Facebook pages, groups, YouTube channels, etc. Students can provide feedback, ask questions in the chat section, or comments.

Merits

- No pre-recorded videos are required. Teacher can go live from his/her smartphone as well.
- Students can ask questions immediately.
- Video of live sessions gets uploaded online. If anyone has missed the live session, he/she can watch it later as well.
- Any number of viewers can watch it. There is no restriction on the number of viewers.

Demerits

- It will be difficult for students from remote areas who don't have smartphones and good internet connection to watch the sessions.

Interactive Video

In an interactive video, there are quiz questions along with the video. Video will take a pause and the viewer has to answer questions and responses will be marked immediately. So, the viewer will get immediate feedback. If any of the answers is wrong, he can rewind the video and clear that doubt.

Merits

- This approach is flexible.
- Students have immediate feedback in the form of correct responses.
- It improves the decision-making power of students.
- It is a student-centred approach.

Demerits

- It is time-consuming.
- Resources and experts are required for implementing such an approach.

Computer-assisted Learning

Computer-assisted learning has been gaining popularity as it makes learning active, efficient, easier, and convenient by the use of modern technology. Interactive whiteboards and smart classes can be used. With the use of new technology, learning has become very much faster as compared to the traditional techniques.

Merits

- Individual needs of the students can be addressed.
- It is a student-centred approach of learning.
- There is active participation by students.

Demerits

- It is expensive due to use of costly hardware and software.
- Teachers may not be willing to implement it.

Game-based Learning

It is one of the most engaging methods of teaching. As the name suggests, learning is imparted with the use of games. Rather than focusing on grades,

the focus is on inculcating skills, values, and morals in students, that is, on preparing the mindset of students. Online games involve the players as decision-makers. The game progresses with the choices they make and students receive badges and points for completing the objectives. There are gaming apps for building vocabulary, practising typing, memorizing the periodic table, solving mathematical problems, etc. The teacher can plan games according to the need of the curriculum.

Merits

- Use of games increases the student participation and also boosts their interest.
- Students don't have to wait for results, they get immediate results.
- Students can learn as per their convenience.
- It is not completely student-centred, as the teacher plans the activities.

Demerits

- It is expensive as costly equipment and software will be needed for its implementation.
- Teachers need to undergo training so that they can plan games according to the curriculum effectively.
- There is lack of willingness in teachers to use such methods.

Seminar

Seminars can also be used as a teaching method. Seminar is similar to classroom interaction, as there is an expert or a group of experts from similar areas who addresses a number of students or participants. Experts present the papers, which is followed by the question session in which queries of participants are resolved. Slides are also used in seminars to engage the participants. The topic of seminar is decided in advance and experts on that topic are invited to present papers. Seminars are organized in almost all educational institutes every year.

Merits

- Seminars are a great source of information as the experts of a particular field present the topics; so the information received is authentic.
- The presentation skills of participants improve in seminars.
- Participants get to know about research activities.

Demerits

- Organizing a seminar can be costly as expenses have to be incurred for inviting experts, arranging accommodation and food for participants and experts.
- It is time-consuming and at times could be boring for participants.
- If students don't participate wholeheartedly, then the purpose of organizing the seminar is not fulfilled.
- There is no mechanism in evaluating the knowledge which participants have received from seminars.

Tutorials

Tutorials are used as follow-up of classroom lecture. After delivering the lecture, a teacher can group students on the basis of their needs and queries. The teacher can then provide remedial teaching to clear their doubts in theory content or in practical work. If the concept is clear to students, then the teacher can assign them a topic to present in the class. The student presents and the teacher supervizes the presentation. It is followed by a question session, where other students can ask queries; if the presenter is not able to resolve the queries, the teacher can help.

Merits

- It is a student-centred approach.
- It is an effective way of teaching as the teacher addresses the individual needs of students.
- It sharpens the communication skills of students.

Demerits

- It will be difficult to implement in larger classrooms.
- It can be time-consuming and the syllabus will not be completed on time.

Assignments

The classroom activity can be followed by assignments. It helps in self-learning as it can be an extension of classroom learning, that is, students have to work on some additional information on a given topic after the class on their own. It develops research attitude in students. Assignment should be simple. While planning an assignment, the teacher

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should take into consideration the topic covered in the class, level of students, time required to spend on it, etc. If adequate time is not given to students, then it may lead to frustration, guilt, and inferiority complex in them. Assignments can be graded or ungraded; if the assignment is ungraded, then the teacher should inform the class that he/she will pick students randomly and check their assignment. If students are aware of this, they will complete the assignments on time; otherwise they may ignore these.

Merits

- It develops creative thinking in students.
- Grades can be awarded for completing assignments on time.
- Students learn time management skills by working with deadlines.
- It is a student-centred technique. Students have flexibility in completing it at their own convenience but before the deadline.

Demerits

- It is difficult for the teacher to check all assignments, especially in case of classes with large number of students.
- Deadlines for submitting assignments can pressurize students to focus on completing them without taking care of the quality of content.
- Students can copy assignments from each other.

Case Study

In case studies, cases based on real-life situations are assigned to the students. A case can be defined as an 'actual or near actual situation usually involving a decision, a challenge, an opportunity, a problem, an issue or a controversy affecting a person or persons in an organization'. Students act as problem solver and study the case from different perspectives. They work on a case by observing, analysing, recording, implementing, summarizing, or making recommendations in order to solve it. The teacher can arrange discussions on the case in class. Case studies ensure student-centred learning instead of traditional approach of teacher-centred learning. Students participate actively in solving cases and discussions. It involves the interdisciplinary approach.

Merits

- It is a student-centred method of teaching and learning.
- It boosts creativity, critical thinking, communication, interpersonal, and time management skills in students.
- Students work on solving real-life problems.
- These bridge the gap between theory and practical, that is, students learn to apply theory to tackle real-life situations.

Demerits

- Teachers should be trained properly so that they can use case studies effectively.
- It might be difficult to find a case from real-life situations involving the concept under study.
- There are chances of one perspective getting more focus, with little or no emphasis on another perspective.
- Case studies cannot be used effectively for short-term courses.

SOME GREAT TEACHERS

Confucius	– First private teacher in history
Friedrich Froebel	– Founder of kindergarten school
John Amos Comenius	– Father of modern education
Anne Sullivan	– Teacher of first graduate deaf–blind person
Dr. Sarvepalli Radakrishnan	– His birthday is celebrated as Teacher's Day in India
Savitribai Phule	– First female teacher of first women's school in India

E-LEARNING FACILITIES

MOOCs

Massive Open Online Courses (MOOCs) are online courses that are available free of cost. Such courses are taught by prestigious Indian and foreign institutes on platforms such as MIT OCW, SWAYAM, edX,

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Udacity, Coursera, and so on. Anyone can enrol in a course of his choice without any restrictions of the qualification. Online courses comprise videos, course handouts, suggested readings, and online tests. On successful completion of the course, certificates are also issued. The below given image is the certificate of an online course passed by the author of this book.
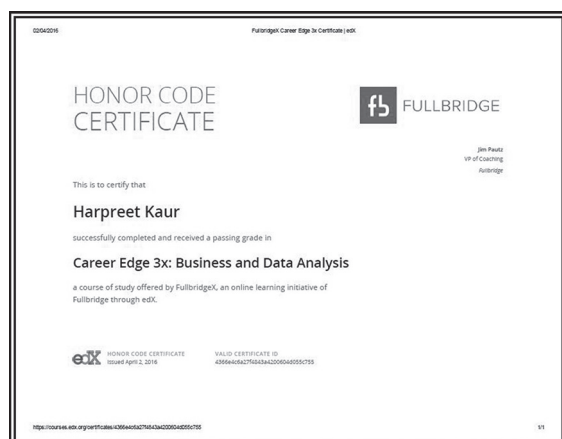
SWAYAM

SWAYAM, which stands for Study Webs of Active-Learning for Young Aspiring Minds, is a MOOC-based initiative by the Indian government, where courses from prestigious institutes are available online. Students can enrol in these courses free of cost.

SWAYAM PRABHA

SWAYAM PRABHA is a project of Ministry of Human Resources Development, Govt. of India, under the National Mission on Education through ICT. It is a set of 32 DTH channels which telecast high-quality educational programmes on 24 X 7 basis using the GSAT-15 satellite. The content is provided by UGC, CEC, IITs, IGNOU, NPTEL, NCERT, and NIOS. The website of SWAYAM PRABHA is maintained by INFLIBNET Centre. New content is telecast every day for at least four hours and it is then repeated five times in a day, so that the students can learn at time of their convenience. There are channels dedicated to school education and higher education in subjects of languages, humanities, social sciences, physical sciences, mathematics, life sciences, various engineering streams, agriculture, vocational and allied sciences, etc.

Consortium for Educational Communication (CEC)

CEC was set up in 1993 by the UGC for addressing the needs of higher education through the use of television and *information communication technology* (ICT). It is an inter-university centre and the nodal agency to coordinate, guide, and facilitate the production of educational content at the national level through its network of 21 media centres. Before the setting up of CEC, the educational programmes were managed by the media centres established by UGC in six universities. For this purpose, Countrywide Classroom Programmes was started in 1984. EDUSAT is the educational satellite launched by Indian Space Research Organization (ISRO) for interactive satellite-based distance education. It streams both the live as well as recorded sessions (available on YouTube). Students can interact with teachers through text mode, over the telephone, or through audio or videoconferencing.

ePathshala

The ePathshala is set up by the joint efforts of Ministry of Human Resource Development (MHRD), Govt. of India, and National Council of Educational Research and Training (NCERT). It is a platform which supports a collection of a wide range of educational e-resources including textbooks, audio, video, periodicals, and other materials. It can be used by teachers, researchers, educators, students, and their parents.

National Programme on Technology Enhanced Learning (NPTEL)

NPTEL is a joint initiative by the IITs (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras, and Roorkee) and IISc for improving the quality of technical education by providing online content which can be used by teachers and students. Teachers can use these courses to plan the classroom lectures.

ICT Based Teaching Support Systems

Most of the modern teaching support systems involve the use of ICT. The content can be made interesting using animations, videos, images in slides. Also, ICT is used to share the teaching resources. Videos, course handouts, tests, and the other course contents can be uploaded online.

Teachers can make use of online solutions like Google Classroom to share online content with students, have discussions, receive assignments, and conduct online tests.

TEACHING SUPPORT SYSTEMS

Teaching support systems are the resources which teachers use to make learning effective and long lasting. These are also known as *teaching aids*. Students understand better and in lesser time with the help of aids as compared to the traditional methods of teaching. These support systems make learning interesting for students. There is a wide range of teaching support systems, from simple ones like the blackboard to the complex computer programs. These can be based on audio, visual, or both.

	Traditional teaching support systems	**Modern teaching support systems**
In use	Since very long	Emerging with developments of new technology
Use of ICT	No	Yes
Prepared using	Papers, chart sheets, thermocol sheets, cardboard, chalk, colours	Hardware and softwares
Example	Blackboards, puppets, textbooks, charts, plays, drama, storytelling, puzzles, flash cards	Whiteboards, projector, radio broadcast, slides, TV channels, live sessions, e-books, smart boards, etc.

Offline methods of teaching	**Online methods of teaching**
• Teaching takes place inside the physical boundary of the classroom.	• There is no limit of physical boundary for classroom. Anyone from around the world can take part.
• Learners need to be physically present in the classroom.	• Teachers will upload the content online and learners can access it from any place.
• There is a limit on the number of students who can be enrolled depending on factors such as size of the classroom, faculty, availability of funds.	• Any number of students can watch the course videos online or enrol in the online courses.
• There are fixed timings for students to attend the classes.	• There are no fixed timings. Learners can access the online material any time as per their comfort.
• It can be used even in remote areas lacking electricity, internet, and gadgets.	• Internet connectivity is must for such courses for both the teacher and learners.
• The teacher is in direct contact with the students. He can analyse their behaviour, interest, values, etc. and can guide them.	• In online teaching, the teacher is not in direct contact with students. However, students can contact teachers through email or chat sessions.
• The teacher can resolve queries of students in the classroom. Students can also clarify their doubts with their class fellows.	• Queries can be resolved in discussion forums.
• These methods can be teacher-centred or learner-centred.	• These are usually student-centred.
• These lack flexibility as students have to attend classes and appear in exams at the specified date and time along with others.	• These are flexible in nature as students can learn and appear in tests as per their own schedule.
• Examples include kinesthetic teaching, role playing, simulations.	• Examples include computer-based learning, programmed instructions, live sessions, interactive videos, game-based learning.

Teaching activity involving lecture, demonstration, heuristics method, discussions, project work, panel discussions, presentations, seminars, tutorials, assignments, case study etc. can be planned in either offline or online mode.

There can be methods which will involve both offline and online teaching, such as 'flipped classrooms', in which students will learn content from videos uploaded online by their teachers and then will have discussions and solve assignments in class.

Benefits of Using Support Systems or Teaching Aids

- Students retain concepts for a longer time if taught using teaching aids.
- Teaching aids help in engaging students and they learn with interest.
- Teaching aids break the monotony of lectures.
- Teaching using an aid involves simultaneous use of multiple senses of the students due to which they learn easily.
- Experts can be brought to class with their audio or audio–visual clips, instead of being physically present. This way sharing of knowledge becomes easy. These clips can be used by students at various geographically distant places at the same time; thus it is possible for the teacher to instruct any number of geographically distant students together at once.
- Teaching aids motivate students for better learning.
- Students don't need to memorize or learn by rote as they will understand the topic in an effective way with the help of teaching aids.
- Teaching aids encourage active participation of students in classroom activities.
- These increase and reinforce learning.

Audio Aids

Audio Aids are those which appeal to the sense of hearing of students. These include use of radio, recorders, telephone, mobile, audio players, podcast, etc.

DID YOU KNOW?

- Establishment of 'Radio Club' at Calcutta in 1923 marked the arrival of radio in India.
- The regular broadcasting service started in 1927.
- In 1936, All India Radio (AIR) was launched when the government took over radio service.
- 13 February is celebrated as World Radio Day.

Radio Use of radio for educational purpose dates back to 1927. Before Independence, there were 30 AIR centres broadcasting educational programmes. Radio can be used for lecture streaming, news updates, streaming discussion sessions, and other educational programmes. Radio can be used as an effective aid for teaching due to its higher reach and availability in even remote areas.

Recorder Recorders can also be used to facilitate teaching. These can be used to record lectures, discussions, dialogues, conversations, etc. The recorded

Audio aids	Radio, Recordings, Audio players, Telephone and Mobile, Audio CD
Visual aids	Slides, Charts, Flash cards, Poster, Picture, Graph, Silent films, Maps, Mindmaps, Diagram, Display Boards, Summary cards, Projectors
Three dimensional aids	Models, Puppets, Globe, Specimen, Samples, Diorama
Audio–visual aids	Filmstrip, Cartoons, Puppets, Drama, Television, Online videos, Documentaries
Activity aids	Field trips, Experimentation

audio clips can be used later at any time. The recordings can be saved for personal use or these can be shared with others as well. Recordings can be streamed on radio as well to maximize its reach. There are special recorders available in the market to serve the purpose. For affordable recording, students can make use of the recorder in their phones.

Podcast Podcasts are also streamed like radio programmes, but the difference between radio and podcast is that podcasts are available over the internet. These are similar to internet radio. Podcasts are gaining popularity with their use by many institutions for streaming discussions or audio lectures. Podcast recordings are also uploaded online so that anyone who missed a lecture can listen to it later.

Other audio aids These include the telephone, mobile phone, audio CD, etc.

Visual Aids

Visual aids are designed to appeal to the eyes of the students. A few important visual aids are given below along with their images:

Slides Slides are one of the most common visual aids which can be used in nearly all fields. Software like Microsoft PowerPoint and Google Slides can be used to prepare slides. These can be projected in the class with the help of projectors. Printouts of slides can also be provided to students for further use. The teacher should make slides in such a way that these capture the interest of students. Animations, pictures, charts, text, etc., can be used in slides. The image given below shows a presenter delivering a lecture.

Charts and graphs Charts and graphs can be used to make learning easier. A teacher should have knowledge of charts, graphs, and their usage so that these can be used in a way to make teaching effective. These can be drawn manually or with the help of softwares. Charts and graphs are also discussed in chapters on Research Aptitude and Data Interpretation in this book. Image given below shows different types of charts and graphs:
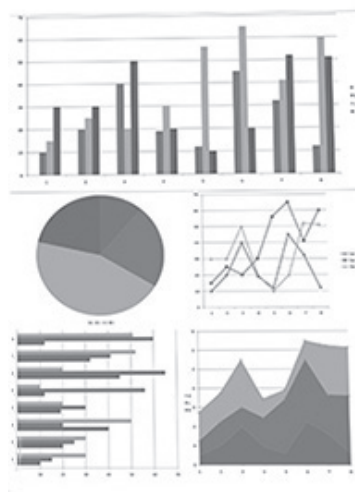
Flip chart Chart sheets are stacked on a board. These can be pre-designed or the teacher can also write over these in class. After discussion, the first chart is flipped to move to another chart. These can be used for discussing the sequential steps of an activity.
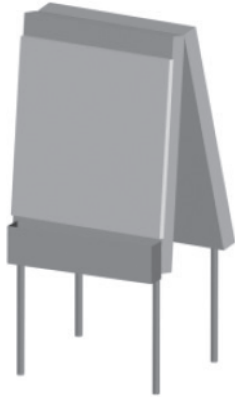
Flash cards   Flash cards are like compact cards. These are generally used in sets. One card is displayed immediately after another. Information can be presented on both sides of the card. These can be used for glossary, and quiz, where the question is displayed on front side of the card and the answer on rear. Flash cards can also be made with the help of computer softwares.

Mind maps   Mind maps are colourful, organized diagrams which can be drawn to list the complete information about a topic. These can be drawn with hand or using softwares. Students can paste mind maps of important topics on walls of their study area, this makes revision easier. It also boosts creativity.

Maps   Maps are of great use in teaching subjects like geography. These help in memorizing places easily by giving a pictorial representation of geographical regions.

Posters and pictures   Important instructions and concepts can be pasted on classroom walls in the form of posters or pictures. Students will see them

An example of a mind map
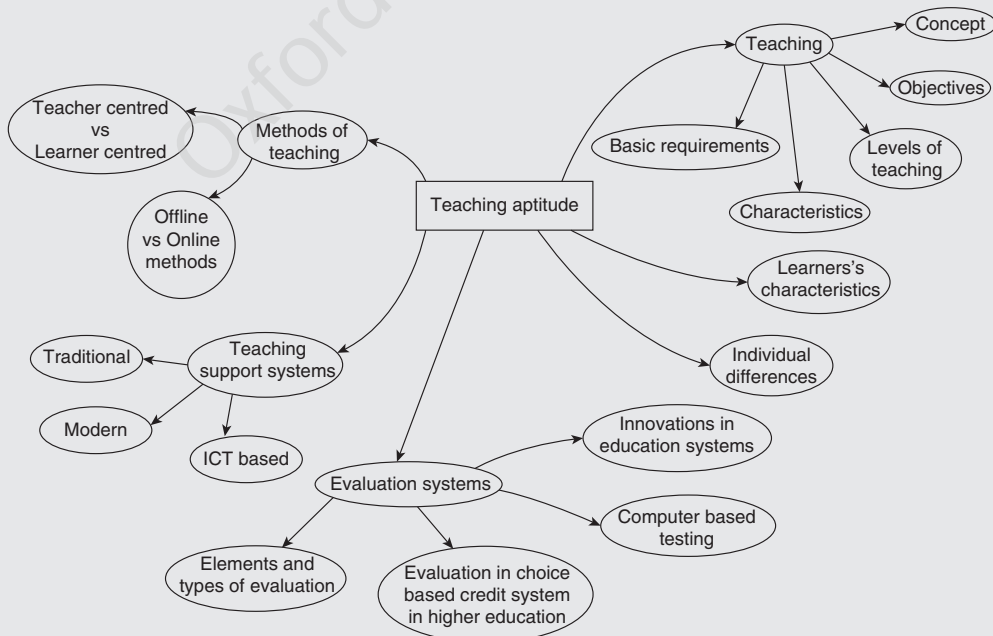
daily consciously or subconsciously and their brain will be tuned to follow those instructions. Students can be given homework assignments to prepare posters or pictures on a particular topic or it can be planned as a classroom activity. Poster making competitions can be arranged to enhance creative thinking and drawing skills of students.
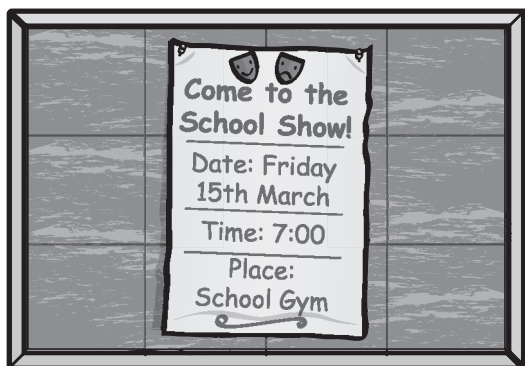
Diagram Diagrams are a common teaching aid used especially for sciences subjects. These help in remembering the structure of an object.
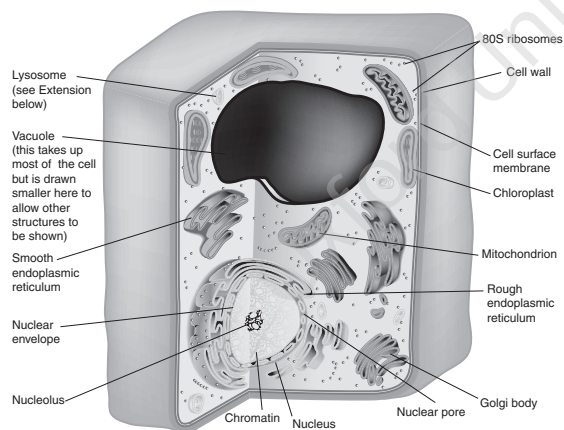
Display boards Display boards help in engaging students. There are different types of display boards as given below:

Blackboard Blackboard is one of the most popular and primitively used aids of teaching. In earlier times, the teacher used to write on individual slates of students to instruct them. Then with time the idea of a common board or slate for the whole class emerged,

this led to the use of the blackboard. It is considered as the most effective and universal medium for conveying basic points, teaching processes, explaining, notes, displaying diagrams, showing calculations, etc. White or coloured chalks can be used to write over these. These can be used for facilitating lectures, group meetings, and trainings.
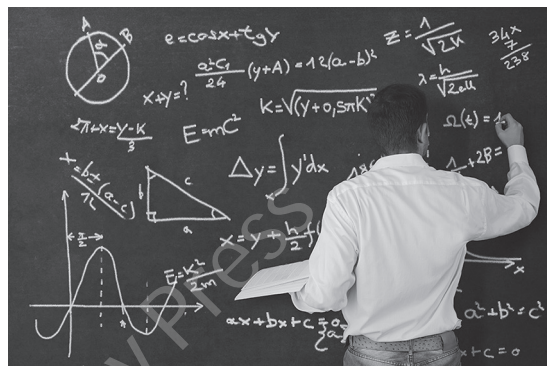
Black colour is sentimentally bad but, every black board makes the student's life bright.

–A.P.J. Abdul Kalam

Whiteboard Whiteboards are an updated version of the blackboard. Chalk dust from blackboards causes irritation. Today, the blackboard is being replaced by whiteboards which are like plastic boards. Instead of chalk, felt tip pens or markers are used to write on the whiteboards. Coloured markers can be used for highlighting important points on the board.
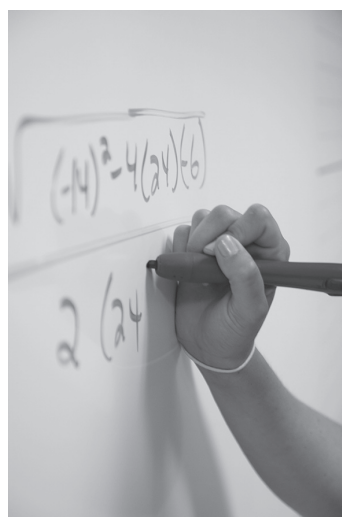
Peg boards These have holes to affix diagrams, fig-ures, posters, models, articles, etc., using pins, or hold-ers. These are simple and easy to use. However, use of peg boards can be time-consuming as the objects used for teaching needs a lot of time for preparation.
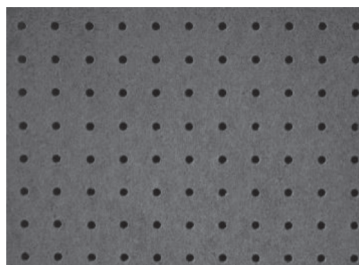
Magnetic boards These are a variation to the com-mon blackboard and whiteboards. Magnetic strips are used in the board and the objects to be used on the boards have iron so that these stick on the board. Objects can be moved across the board easily to show the movements. It is similar to refrigerator magnets.

Bulletin boards These are used to display impor-tant hand-outs, notices, diagrams, posters, instruc-tions, etc., for students' attention. Pins are used to fasten papers on the board.

Flannel board or felt board These boards are made of special fabrics like flannel, wool, or baize. The objects have sandpaper on the backside so they can be easily hanged on the board. This makes objects easy to hang and remove. Objects of similar order or involving similar principles can be clubbed together for demonstrations.

Such an activity may involve a lot of time as the teacher has to prepare objects needed for explaining.

Projectors These are visual projection aids. These have gained popularity in recent times. These are required to project slides, images, text, videos, diagrams, posters, etc., to facilitate the lecture or demonstration. These arouse interest in students. Students can also be given assignments to present in the class using projectors. This will improve the presentation skills of students. Projector can be over-head or handheld. Nowadays, projectors can even be connected to smartphones. While using projectors, the teacher should make sure that the content is nei-ther too small nor too big, it should be of optimal size so that it is visible to all students.

Summary cards Summary cards, as the name suggests, are pocket sized cards displaying brief and necessary information about a topic. These can be used effectively for revision. These have very con-densed form of major points about a topic. These act as memory booster and also help students in keeping track of what has been taught.

Three-dimensional Aids

Three-dimensional aids help in bringing to the classroom objects similar to real objects. In some cases, real objects can be shown to the students but in other cases real objects such as rockets, planets, mountains, wild animals, internal systems of human body, etc., cannot be brought to class. In such cases, a model can be used for effective teaching. Some of the common three-dimensional aids are models, diorama, globe, puppets, specimen, samples, and so on.

Audio–Visual Aids

Films Films, if chosen carefully, will act as wonderful medium with much impact. These bring the outdoor world into the classroom and facilitate learning. Educational films can be shown in the class for the better understanding of students. Films based on historical events create a visual representation of past events; hence students can learn from these easily and retain for longer time.

Films can also be used for learning outside the classroom as well due to their reach and huge impact. Films based on subjects like sanitation and cleanliness (*Toilet Ek Prem Katha*), use of sanitary napkins (*Padman*), etc. create awareness among masses.

Puppets Puppets are toys showing some characters; these can be used by tying them with strings, sticks, or putting them on hands and fingers (depending upon the size). The performer conveys some ideas using interactions between puppets, or puppet and humans. Such teaching aids help in engaging the students. These had been used even at the time of freedom struggle in India. Puppet shows are a part of traditions of India.

Cartoons Student engagement in cartoons is very high. These help in conveying important ideas and instructions along with fun and entertainment. Cartoons are effective especially for kids as the tendency to imitate is higher in them. Kids will try to imitate what their favourite cartoon character is doing. This way the habits of cleanliness, discipline, respecting each other, obeying parents, etc., can get inculcated in kids.

Drama or play Drama or play can be organized for spreading awareness. Such activities help in developing communication skills, presentation skills, creativity, cooperation, etc., in students who participate in drama. Such an activity should be planned and executed carefully so that the outcome is as intended. Real-life situations can be recreated in drama and students can be taught how to deal with these situations.

Television channels Television (TV) can also serve as a medium of education. Education channels can be launched for teaching different subjects. Experts from various reputed institutes can be called to record video lectures. Students at remote areas can also have access to these channels on TV.

For example, 'Swayam' is an initiative by the government under which TV channels have been launched for different subjects. Experts from IITs, IIMs, and other reputed institutes teach on these channels.

Online videos Like TV channels, channels can be created on YouTube or other platforms. There are a huge number of educational channels on YouTube. There are many websites as well on which educational videos are available. Video lectures are now available on a wide range of topics. The biggest advantage is that students can access these free of cost. They just need to have good internet connectivity and a smartphone or laptop or computer.

Documentaries can also be shared with students for gaining comprehensive knowledge on a topic.

Activity Aids

These are aids in which students learn by doing. Students retain more if they were actively engaged

in the learning and have acquired knowledge on the basis of some activity. These activities may be an experiment in a laboratory, a role play, a field trip, a presentation, assignments, field work, survey, computer-assisted learning, etc. Students understand better when they have been involved in the learning process instead of being passive receivers of knowledge.

> *I hear and I forget. I see and I remember. I do and I understand.*
>
> – Confucius

FACTORS AFFECTING EFFECTIVENESS OF TEACHING SUPPORT SYSTEMS

Choice   The choice of the teaching aid affects the effectiveness of teaching. An appropriate number of aids should be chosen. If the teacher uses too many teaching aids, it will confuse him/her as well as the students. So, for effective results an appropriate number of teaching aids should be chosen.

Simplicity   The teaching aid used should be simple to understand. If it involves the use of complex diagrams or aids, then the teacher should try to simplify these as much as possible for better understanding.

Availability of resources   Resource availability also affects the outcome of a teaching aid. If the required resources, that is, the hardware and software essential for using a teaching aid are not available in good condition and requisite quantity, then the results will be compromised.

Relevance   The relevance of aids varies from subject to subject. The maps used for teaching geography will not have much relevance in a mathematics class. So, the teaching aid should be selected while keeping in mind the needs of the subject.

Visibility   If the aid used is not visible or cannot be used by all students in the class, then it will not be effective. While designing aids, the teacher should take into consideration the size of content; it should not be too large or too small. If the size is

such that all students cannot see it at the same time, then it should be shown to students in groups.

Timeliness   Time factor also plays an important role in determining the effectiveness of an aid. Teaching aids should be used at the right time and place. For this, the teacher should have good knowledge of teaching aids and their effective use.

Flexibility   There should be flexibility in using teaching aids. Suitability of a teaching aid varies from teacher to teacher. Similarly, it varies for students, that is, what suits one student may not suit others. So, a teaching aid which suits the need of subject, interest of students, and is comfortable for the teacher as well should be chosen. If need arises, different aids can be used for different students or they can be given a choice to choose one from a group of aids.

Cost   The cost factor should not be ignored while choosing the teaching aid. Some aids require use of costly hardware and softwares, while others can be used with locally available material.

Attractiveness   Whatever aid a teacher chooses, should be appealing and attractive. In case of visual and audio–visual aids, colours can be used to make them look attractive, interesting, and highlight important points. But not more than four colours should be used in one slide. Colour combination should be chosen carefully. If any of the student has colour blindness, then pastel shades should not be used.

LEARNING DISORDERS

- **Dyscalculia** Students suffering from this disorder have difficulty in understanding mathematics and numbers, arithmetical operations, signs, etc.
- **Dysgraphia** It is related to handwriting and leads to poor handwriting, inconsistent spacing, wrong spellings, etc.
- **Dyslexia** It is related to problems in reading like in recognizing and understanding letters and words, low fluency, etc.
- **Dysphasia or Aphasia** It is related to problems in understanding a spoken language.

How much do we remember after two weeks?
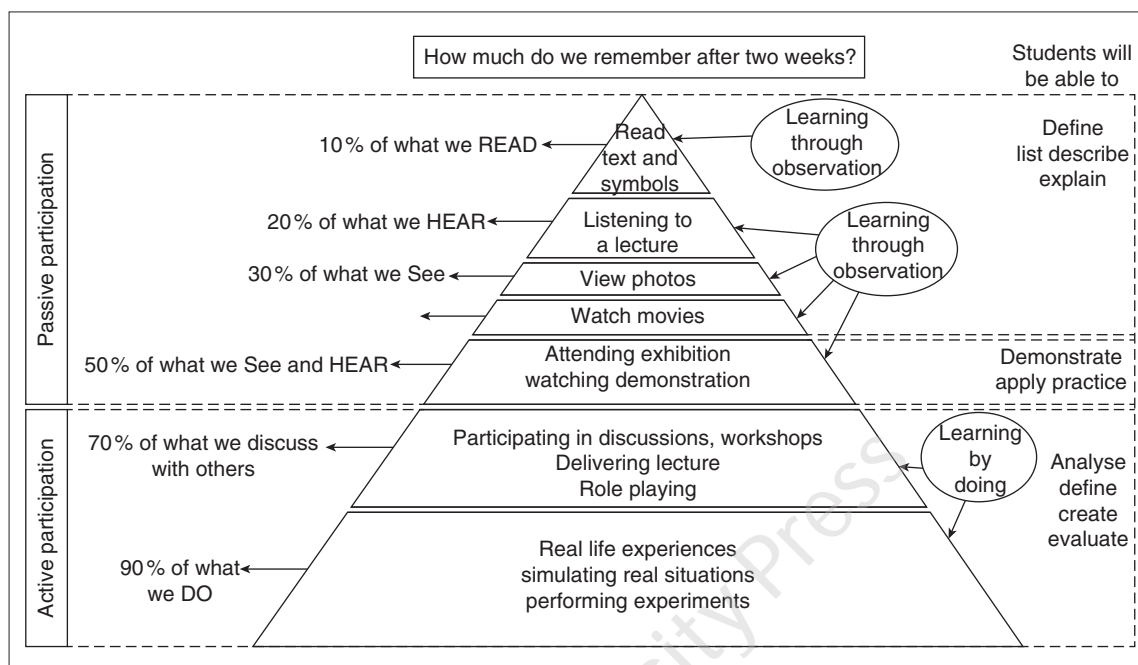
EVALUATION SYSTEM

Evaluation is a systematic process which involves the use of different types of activities for assessing the outcomes of teaching. It helps teachers to understand the needs, interest, and potential of students. According to the *Oxford English Dictionary*, evaluation is 'the making of a judgement about the amount, number, or value of something'. Evaluation can be defined as the process of collecting, examining, and interpreting data on knowledge, skills, beliefs, and attitude of students for assessing the magnitude of their learning. The data can be collected by taking a test of students, interviewing them, or by observing them silently. Teachers keep a record of students' performance data and analyse it to know about trends in their performance. If the students' performance turns out to be unsatisfactory, then changes can be made in the teaching methods and aids so that students understand better. Evaluation also stimulates the students to study.

Characteristics of Evaluation

1. Evaluation is a systematic process. This means it is carried out in a systematic and planned way.

2. It is a continuous process. It is accomplished along with the teaching–learning process and not just at the end of the teaching–learning process.

3. It is comprehensive. Evaluation is not intended to just assess the knowledge of students, but it stresses equally upon the other elements also. It focuses on examining the all-round personality of students.

4. It evaluates the fulfilment of instructional objectives.

5. It involves the use of diverse procedures, tests, and techniques.

6. It helps in identifying the problems and weaknesses of students so that remedial measures can be adopted.

7. It is pervasive and a crucial feature of teaching.

8. It helps student grow as they get to know about their weaknesses.

9. Well-planned evaluation provides reliable and valid measure of students' learning and potential.

10. Prior knowledge of students can also be evaluated before the beginning of teaching–learning process.

11. It is dynamic and flexible, which means it can be adjusted as per the requirement of circumstances.
12. It should be as realistic as possible.
13. There should be objectivity in evaluation, that is, the results should not be affected by the personal biases of teachers.

Functions of Evaluation

- It helps in detecting the problems and weaknesses in students' learning so that remedial measures can be recommended.
- It helps in identifying the potential and abilities of students. For example, UGC-NET exam tests the ability of candidates for research and teaching.
- By identifying the potential, candidates suitable for a course or a job can be selected.
- It is the basis for certification and awards. Certificates, degrees, awards are distributed to students if their performance turns out to be satisfactory in examination of the learning outcome.
- It helps in measuring the level of fulfilment of instructional and educational objectives.
- It acts as a source of feedback for teachers as they will get to know if students understand whatever is taught to them or not. If it turns out that students do not understand the subject matter, then the approach can be changed for their better understanding.

Elements of Evaluation

Evaluator and participants   The most important elements of an evaluation are the person who will evaluate and the person or persons who will be evaluated. In the absence of one, there will be no purpose of evaluation.

Purpose and objective of evaluation   It is a significant element of evaluation. The purpose of evaluation can be admitting students to a course; selecting candidates for a job; routine test to check the progress and understanding of students; or term-end examination for promoting students to a higher class. The teacher can also evaluate students to know whether they understood the content or he needs to change the methodology.

Resources   These are required for evaluation of question papers, answer sheets, or online tests. If the skill level of the candidates is to be evaluated, then equipment, hardware, and software will be required accordingly.

Analysis   There is a need of analysing the performance of the participants. In case of a written or oral test, marks can be assigned. Candidates can also be given marks or ranked on the basis of their skills, behaviour, attitude, personality, confidence level, etc. such as in interviews.

Decision-makers   Decision-makers are persons who will be making the final choice as per the results of the analysis of candidate's performance.

Types of Evaluation

Placement evaluation   This is also known as *pre-evaluation* or *initial evaluation*. Such an evaluation is carried out at the beginning of course or term. It helps in identifying if the person has prerequisite knowledge or not. It aims at checking the required entry-level eligibility conditions. It can also be conducted to check the aptitude and calibre of students before the beginning of the course. Quantitative techniques in the form of entrance tests and interviews or the qualitative techniques like observation, cumulative record cards, etc., can be used for evaluating students. Such an evaluation intends to analyse the cognitive, affective, and psychomotor domain.

Formative evaluation   Paul Black is considered as the proponent of this concept. Such an evaluation is carried out during the course of learning process. He has compared it with the evaluation which chefs conduct during cooking, which is to taste the food during the process of cooking. At this stage, improvements can be made depending upon the need. Similarly, during the teaching–learning process, the teacher can evaluate the understanding of students. If any problems are found, then the teaching methods, aids, or approach can be improved. This can be in the form of class test, quiz, pre-board exams, chapter test, unit test, weekly test, monthly test, etc. These are not graded. It will provide feedback to the teacher regarding effectiveness of the teaching methods, aids, and approach used. There is no risk of loss of marks in formative evaluation; so students will be interested in experimenting with ideas. It reinforces learning among students. It is also called *internal evaluation*.

Summative evaluation   Paul Black also propounded this concept. It is also known as *external evaluation*. It is carried out at the end of the term, course, or unit. Paul Black compared this kind of evaluation with the stage when the food is finally served to the customer. Now, the chef cannot make any changes and his dish will be judged by the customer. Similarly, at the end of term, the teacher's task of providing information to students is complete and there will be final assessment of students' learning. It can be in the form of term-end exams, final exams, board exams, projects to be submitted at the end of term, term papers, etc. These are graded and certificates and degrees are awarded depending on the performance. There is a risk of loss of marks in summative evaluation so students will have lesser interest in experimenting with ideas.

Diagnostic evaluation   This is one step ahead of formative evaluation. Formative evaluation identifies the problems, whereas diagnostic evaluation diagnoses the causes of such problems. It is more comprehensive. It is based on evaluation of affective domain with the use of qualitative techniques.

Diagnostic evaluation can also be used at the beginning of a course or term to know about prior knowledge of the learners, so that the teaching process can be adjusted accordingly.

Norm referenced evaluation and criterion referenced evaluation   Norm and criterion referenced evaluation are two different ways of evaluating a student's performance. In *norm referenced evaluation*, the performance of one student is compared with others, while in *criterion referenced evaluation*, there are no comparisons and results are stated on the basis of certain critera. For example, 'A has scored 98 per cent marks in test' is the criterion referenced evaluation as there is no comparison of marks of any other student. 'A has scored highest marks in test in class' is norm referenced evaluation, as there is comparison of marks scored by A with marks of other students of the class, which turned out to be lesser than A.

	Placement evaluation	Formative evaluation	Summative evaluation	Diagnostic evaluation
Function	To check entry-level eligibility conditions, pre-requisite knowledge and understanding	To identify problems in teaching–learning process and provide feedback for improvements and remedial measures during the course	To grade and certify students on the basis of their learning, and to test the effectiveness of teaching	To provide explanation for the problems identified in formative evaluation
Time of evaluation	Before beginning of course or term	During course or term	On the completion of course, term, or unit	During course or term
Domain evaluated	Cognitive, psychomotor or affective domain	Cognitive or psychomotor domain	Cognitive, psychomotor or affective domain	Affective domain
Technique of evaluation	Quantitative and qualitative techniques	Quantitative techniques	Quantitative and qualitative techniques	Qualitative techniques
Report	Selection or rejection	Not graded	Graded	Anecdotal report
Score comparison	Norm or criterion Referenced standards	Criterion referenced standards	Norm referenced standards	Comparison of actual and expected behaviour

Evaluation in Choice-based Credit System in Higher Education

In the Choice-based Credit System (CBCS), students can opt for subjects from the available choices. Students have to complete the required credits in order to obtain the course certificate. Credit points and grade points are awarded to students and on the basis of these, the semester grade point average (SGPA) is calculated. The cumulative grade point average (CGPA) is calculated on the basis of performance in all the semesters.

Grades   It is the index of performance denoted by O, A+, A, B+, B, C, P, and F.

Grade point   It is the numerical number assigned to each grade letter.

Letter Grade	Performance	Grade Points
O	Outstanding	10
A+	Excellent	9
A	Very Good	8
B+	Good	7
B	Above Average	6
C	Average	5
P	Pass	4
F	Fail	0

For courses of qualifying nature, 'satisfactory' or 'unsatisfactory' can be indicated.

Credit point   Grade point × Number of credits of subject

$$SGPA = \frac{Credit\ points\ secured\ in\ all\ subjects\ opted\ in\ a\ semester}{Total\ of\ credits\ of\ all\ the\ subjects\ opted\ in\ semester}$$

$$SGPA = \frac{Credit\ points\ secured\ in\ all\ semesters}{Total\ of\ credits\ of\ all\ semesters}$$

Universities can decide the minimum passing marks or CGPA required to pass the course. The percentage equivalent of a grade can be decided on the basis of absolute grading or relative grading.

Techniques of Evaluation

The traditional examination system used to assess only the cognitive objectives. But today, the range and scope of evaluation have widened. The evaluation techniques can now be used to examine the extent of fulfilment of objectives of cognitive as well as affective and psychomotor domain. The different techniques used in evaluation involve the following:

Tests   These can be oral or written. Oral test can be like viva or interview. Written tests can have *multiple choice questions, short questions,* or *essay-type questions*. Written tests can also have a mix of different types of questions. Multiple choice questions test the understanding of the students. Descriptive questions can be used to test the retaining ability of students or for testing their understanding. For example, the question 'Define Teaching Aptitude' can test the retaining and recalling power of student and a question like 'Define Teaching Aptitude in your own words' will test the understanding of students. So, tests examine the theoretical knowledge and understanding of students. In other words, it can be said that tests evaluate the cognitive domain. Tests can be pen and paper based, computer based (online), or adaptive. It is a quantitative technique of evaluation.

Practical examinations   These can also be conducted depending upon the subject. These evaluate the practical knowledge of students or the extent of skills that students have acquired, that is, these help in the diagnosis of psychomotor domain. Practical exams are also a quantitative technique of examination.

Observation   This is another technique of evaluation. Teachers can evaluate the confidence, attitude, aptitude, gestures, or behaviour of students by observing them. This involves assessment of affective domain. It is a qualitative technique of evaluation. Other qualitative techniques of evaluation

are *Interview, Checklist, Rating Scale, Attitudinal Scale, Anecdotal Records, Diaries,* or *Journals of Students,* etc.

Evaluation can be conducted internally or externally. *Internal evaluation* is like a class test, where the teacher evaluates the students. *External evaluation* involves any other examiner either from the same institute or any other institute, such as in university exams, board exams, or entrance exams. There are chances of biases arising in internal evaluation.

While selecting evaluation techniques, their effectiveness, simplicity, usefulness, appropriateness, practicability, and availability of resources should be kept in mind.

Innovations In Evaluation Systems

With advancement in technology, newer means of evaluating the progress made by students are also being developed. Earlier, only oral and written tests were used for evaluation. Teachers had to check the answer sheets manually which led to delays in the declaration of results. Students could copy answers from chits or from other students as the paper was same for everyone. It was not possible for

the teacher to set different paper for each student. Now, these shortcomings have been taken care in the new methods of evaluation such as computer-assisted evaluation and computer-based evaluation. In computer-based evaluation, the test is conducted on computer and the test can be programmed in such a way that each student will either get a question paper with different questions or with questions in a different order. Since the test is conducted online, the recorded responses will also be saved in the computer. Hence, these can be evaluated in much lesser time than manual checking. For instance, the recent NTA UGC-NET exam was held on 22 December 2018, and the result was declared on 5 January 2019. The result was announced in less than 15 days' time. Online tests or quizzes can be conducted on Google forms.

Other than the changes in the mode of conducting the exam, there have been changes in the type of questions. Earlier, a question like 'Define evaluation' will check the memory and retaining power of the student. Students have to answer the question based on what they had memorized earlier, for which they used to get marks. But nowadays, the questions are more of conceptual nature

Computer-based evaluation and computer-assisted evaluation

The terms 'Computer-based evaluation' and 'Computer-assisted evaluation' may seem to be similar as both involve the use of computer in conducting tests. Computer-based evaluation implies the use of online quizzes and tests, where the candidates can attempt the paper on computer. The test can be uploaded online and students will be given its link so that they can access it anywhere. It is used in MOOCs, online courses, online mock tests, etc. Another way of using computer-based evaluation is for students to visit the designated examination centres and take the test. Competitive exams are conducted in this method. NTA also uses this method, where candidates will appear in UGC-NET papers in the examination centres allotted to them. It can be used for both objective and descriptive questions. For recruitment in banking sector, the mains exam also

includes English language test comprising Essay and Letter writing, other than multiple choice questions.

Computer-assisted evaluation implies the use of computer in evaluation. In competitive exams, optical mark reader (OMR) answer sheets are provided to the candidates. The responses marked by the candidates on OMR sheets can be scanned by the OMR device and the scanned data can be recorded in the computer. Then the responses can be evaluated using the computer programs. It will lead to declaration of the result in lesser time as compared to manual checking. The student performance data can be presented in graphs and charts, to analyse their trend of progress. This way in computer-assisted evaluation, computers are used for evaluating and not for conducting test.

such as 'Define evaluation in your own words.' A person having sound conceptual clarity can answer it correctly. Multiple choice questions, fill in the blanks, assertion–reason questions, statement–conclusions, statement–argument, statement–assumption type questions figure in most question papers.

The teacher can also evaluate students even without conducting tests, through observation. The teacher can observe students, their behaviour, values, etc. Students can be given assignments, one-minute paper, assigned roles, practical performance, etc. At the end of the topic or lecture, the teacher can tell students to rewrite the content covered in the class in a few words. Students can also be required to analyse their performance themselves, or get it reviewed by their peer group. The results of the evaluation can be declared online as well.

Classroom Management

Classroom management is a set of learnable skills and techniques that are used by teachers to run the class efficiently, without chaotic behaviour from students. It should be noted here that classroom management skills are learnable and not inherent traits. A chaotic classroom environment hampers the learning of students and also results in higher stress levels in teachers. No matter how much a teacher knows about the subject, he/she will not be able to deliver the content appropriately if the class is not disciplined. On the other hand, a well-managed classroom

- is academically productive,
- maximizes active learning,
- eliminates behaviour that hinder learning,
- facilitates social and emotional growth, and
- encourages student participation.

Effective classroom management facilitates or improves student learning using different factors, such as behaviour, environment, expectations, materials, or activities that teachers use to engage students. Student disinterest, behavioural problems, or disorganized classes are a result of poorly designed lessons, boring learning materials, or unclear expectations. Good teaching and good classroom management are indistinguishable to some degree.

Tips for classroom management

1. Before beginning teaching, students should be informed about the course plan, syllabus. If they know how the knowledge or skills they acquire from the course can impact their life and how use it in real-life situations, then they will pay more attention to it.

2. The teacher should try to understand the behaviour of students, their strengths, and their weaknesses and then plan the classroom activity according to their needs.

3. The teacher should clearly specify that misbehaviour, such as indiscipline, coming late to class, disrespecting others, etc., will not be tolerated on the very first day of the class. He should also tell them about the consequences of such types of behaviour.

4. The popular idiom, 'Spare the rod and spoil the child' implies that undesirable behaviour must be punished. The teacher should not ignore misbehaviour of students in class. If ignored, such behaviour will be repeated.

5. At first, the teacher should give students non-verbal signals such as looking at them, walking to their seats while teaching, asking them questions, or to use their name in example to grab their attention.

6. If a student continues to disrupt the class even after non-verbal signals, then the teacher can change his seat or direct him to stop distracting the class.

7. If he stills continues with his behaviour then appropriate action should be taken.

(Continued)

Tips for classroom management

8. The teacher should discuss the behaviour of students with their parents if they continue to misbehave in class.

9. Students should also be praised in front of their parents for their achievements and good behaviour.

10. On the first day of class, the teacher should introduce himself to the class and let students know about his achievements. The more students know about their teacher, the more they will trust him.

11. The teacher should share his experiences with the class. This will motivate students.

12. The students should be praised for their achievements either privately before or after class, or publicly in the class.

13. The teacher should have positive relationship with the class.

14. Students should be encouraged to participate in classroom discussions.

15. The teacher should ask students for feedback from time to time and accept it in a positive manner. Feedback responses can be used to alter teaching aids, methods, strategy for better learning of future students.

16. The class should always start with an outline of what will be covered in the lecture. It should end with a summary of what has been covered in the day's lecture.

17. Time should be given to students during the lecture to ask queries and clear their doubts.

18. Never humiliate students even if they lack basic conceptual knowledge. If teachers humiliate them in front of class, their confidence will be affected. They will not ask again even if they have any doubt next time. Embarrassing the students because of lack of knowledge will lead to development of inferiority complex.

19. If the teacher does not like any student personally, then he/she should not behave badly with them. Rather he/she should try to resolve the issue with student.

20. Maya Angelou states, 'I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel.' So, do not make students feel bad due to lack of knowledge or skills; instead try to bring out the best in them and they will remember you for their lifetime.

21. If a teacher feels students are not interested in what is being taught in classroom, then he/she can try to change the activity or teaching method, or divert them by sharing something of their interest.

22. While giving assignments to students, the teacher should clearly specify them the consequences if they do not complete them by the required time.

23. If behaviour of a student has changed suddenly, the teacher should try to understand the reason behind it by observation or asking him directly. If he is facing any problem, then the teacher should help him. If need arises, parents should also be informed about the issue.

PRACTICE QUESTIONS

1. What should the teacher do if a student is unable to answer questions in class?
   (a) Advise him to study properly
   (b) Punish him so that he answers next time
   (c) Scold him in class and make him feel insulted
   (d) Try to understand why he was unable to answer

2. If you found that many students were deliberately absent on the day of class test, then you should
   (a) Stop taking test
   (b) Inform the principal and parents of students about such behaviour
   (c) Take surprise test from next time
   (d) Take retest of absent students when they come to class

3. Why should one join teaching?
   (a) It is a dignified profession.
   (b) The teacher can demand free gifts from students to which they can't deny.
   (c) One has interest in teaching.
   (d) It is his parents' wish.

4. If you don't know the answer of a student's question, then you
   (a) Ignore him and his question
   (b) Tell him to not ask such questions
   (c) Tell him that you will find the answer and let him know by the next class
   (d) Discourage him from asking such questions

5. Which among the following will make teaching effective?
   (a) Keep on repeating the same topic again and again till all the students understand it.
   (b) Give them a lot of homework.
   (c) Punish students for talking and discussing in the class.
   (d) Give time to students to ask questions and queries after finishing the topic.

6. Classroom environment is not 'Open and Independent' at which of the following level(s) of teaching?
   (a) Memory level of teaching
   (b) Reflective level of teaching
   (c) Understanding level of teaching
   (d) Both (a) and (c)

7. Audio–visual aids
   (a) Distract students
   (b) Are more beneficial for slow learners
   (c) Are difficult to use
   (d) Are not meant for higher classes

8. Students are impressed by teachers because of _____.
   (a) Looks
   (b) Educational qualification and knowledge
   (c) Sense of humour
   (d) Moral character

9. What should be done so that latecomers also come on time for class?
   (a) Punish them
   (b) Do not let them enter the class
   (c) Inform their parents
   (d) Report to the principal

10. Democratic teaching is
    (a) Teacher-centred
    (b) Learner-centred
    (c) Subject-centred
    (d) Experience-centred

11. If the teacher is not in the mood of teaching due to poor health, fatigue, or any other reason, then he/she should
    (a) Ask his/her fellow teachers to take extra class.
    (b) Let students play and enjoy.
    (c) Teach students no matter how he/she feels.
    (d) Tell his/her experiences and other motivational stories to students.

12. Evaluation should be
    (a) Continuous   (b) Annual
    (c) Quarterly   (d) Monthly

13. The correct sequence of different levels of teaching is
    (a) Understanding level, Reflective level, Memory level
    (b) Memory level, Reflective level, Understanding level
    (c) Reflective level, Memory level, Understanding level
    (d) Memory level, Understanding level, Reflective level

14. What should be done if students don't complete homework regularly?
    (a) Complain about them to the principal/head of the institute.
    (b) Tell them they can go home only after completing work.
    (c) Discuss the problem with them privately after class and try to help them.
    (d) Scold and insult them publicly in the class.

15. If the son of a famous personality is your student, then you should
    (a) Ignore him
    (b) Ask him for gifts
    (c) Pay more attention to him
    (d) Consider him same like other students and scold him on his mistake

16. Which of the following should be used to engage students?
    (a) Teaching aids
    (b) Real-life examples
    (c) Discussions in class
    (d) All of the above

17. Which of the following statement(s) is/are NOT true?
    (a) Teaching is just an art.
    (b) Teachers can be trained.
    (c) Teachers are born.
    (d) All of the above.

18. What should a teacher do if students criticize any other teacher in his presence?
    (a) Join them in criticising the teacher.
    (b) Encourage them to share it with the principal.
    (c) Punish them.
    (d) Scold them and then tell them to not criticize anyone.

19. In teaching–learning process, which of the following is a dependent variable?
    (a) Students   (b) Principal
    (c) Teacher   (d) Parents

20. Match the following and choose the correct code:

Set-I (Level of teaching)	Set-II (Main proponent)
(A) Memory level	(i) Hunt
(B) Reflective level	(ii) Morrison
(C) Understanding level	(iii) Herbart

Codes:

	(A)	(B)	(C)
(a)	(iii)	(i)	(ii)
(b)	(i)	(ii)	(iii)
(c)	(ii)	(iii)	(i)
(d)	(iii)	(ii)	(i)

21. If a student is going through any problem and he wants to share it with a teacher, then the teacher should
    (a) Not listen to him
    (b) Listen and try to help him
    (c) Listen to him and tell other students, teachers, and the principal about it
    (d) Listen to him and ask for money for helping him

22. For attending a seminar, a teacher should
    (a) Take leave from school by making excuse of poor health
    (b) Ask for permission from head of the institute
    (c) Not ask for permission from head of institute
    (d) Tell any other fellow teacher to take classes during his absence

23. A good teacher
    (a) Focuses on all-round development of students
    (b) Follows discipline strictly
    (c) Punishes students
    (d) Make students do his work

24. Which of the following domains is related to attitude, value, and motivation?
    (a) Cognitive domain
    (b) Learning domain
    (c) Psychomotor domain
    (d) Affective domain

25. Which of the following statements is true about teaching–learning process?
    (a) Teacher and student are dependent variables, while parents are independent variable.
    (b) Teachers are independent variable, students are dependent variable, and subject matter is intervening variable.
    (c) Students are independent variable, teachers are dependent variable, and subject matter is intervening variable.
    (d) None of these.

26. Authoritarian teaching is
    (a) Teacher-centred   (b) Learner-centred
    (c) Subject-centred   (d) Experience-centred

27. What should a teacher do if a student misbehaves with him?
    (a) Complain the matter to the principal and his parents.
    (b) Expel him from the class.
    (c) Punish him so that neither he nor any other student repeats such behaviour.
    (d) Warn him and pardon.

28. Which of the following should be acceptable in class?
    (a) Incomplete homework
    (b) Asking too many questions
    (c) Eating food and snacks during lecture
    (d) Playing games during lecture

29. If a student has problem in understanding your subject, then you should
    (a) Ask the principal for help.
    (b) Inform his parents to arrange tuition classes.
    (c) Discuss it with him and try to change your approach, so that he can understand better.
    (d) Order intelligent students to help him.

30. Instructional objectives should not be
    (a) Specific   (b) Measurable
    (c) Long term   (d) Realistic

31. The objective of teaching is
    (a) Source of income for teachers
    (b) All-round development of students

(c) Provide information to students
(d) Prepare students for job

32. The standard of education can be improved by
    (a) Increasing the salaries of teachers
    (b) Amending the syllabus
    (c) Improving the infrastructure of building
    (d) Continuous evaluation of students

33. If a student does not agree with your viewpoint, then you should
    (a) Send him out of the class
    (b) Be rude with him
    (c) Justify your viewpoint rationally
    (d) None of these

34. Which of the following are levels of teaching?
     (i) Andragogical level of teaching
    (ii) Memory level of teaching
   (iii) Reflective level of teaching
    (iv) Pedagogical level of teaching
     (v) Understanding level of teaching
    Codes:
    (a) (i), (ii), (iii), (iv)   (b) (ii), (iii), (iv), (v)
    (c) (i), (iii), (iv)   (d) (ii), (iii), (v)

35. Which of the following domains is related with physical and technical skills?
    (a) Psychomotor domain
    (b) Cognitive domain
    (c) Learning domain
    (d) Affective domain

36. You have caught some students resorting to malpractices in examination, what would you do now?
    (a) Stay silent and let them continue practising it.
    (b) Ask them for money or gift to let them continue.
    (c) Discuss the matter with fellow teachers and take strict action accordingly.
    (d) Take away their sheets and don't let them sit in the examination.

37. What should you do if students ask you questions during class which are not related to your subject?

(a) Answer them

(b) Ignore them

(c) Tell them to ask someone else

(d) Answer them after class

38. There is more indiscipline in class if
    (a) Number of students is large.
    (b) Teacher is not able to capture interest of students.
    (c) Students have completed the work before time.
    (d) All of the above.

39. Which of the following is not true about nature of teaching?
    (a) It is a science as well as an art.
    (b) It is static.
    (c) It is continuous.
    (d) It is diverse.

40. There is shift in teaching paradigm from _____ to _____
    (a) Learner-centred, Teacher-centred
    (b) Teacher-centred, Group-centred
    (c) Group-centred, Learner-centred
    (d) Teacher-centred, Learner-centred

41. Which of the following domain is related with intellectual skills?
    (a) Cognitive domain
    (b) Psychomotor domain
    (c) Affective domain
    (d) Learning domain

42. Consider the statements:
    (i) There is no difference between teaching and learning.
    (ii) Teaching is different from instruction.

    Which of the above statement(s) is/are not correct?
    (a) Only (i)   (b) Only (ii)
    (c) Both (i) and (ii) (d) Neither (i) nor (ii)

43. Who has the least chance of becoming an effective teacher?
    (a) One who is a strict disciplinarian
    (b) One who knows his subject well

(c) One who has no interest in teaching

(d) One who teaches moral values

44. Consider the following:
    (i) From abstract to concrete
    (ii) From complex to simple
    (iii) From particular to general
    (iv) From unknown to known
    (v) From analysis to synthesis

    Which of the above are maxims of teaching?
    (a) (ii), (iii), and (v)   (b) (iii), (iv), and (v)
    (c) (i) and (v)   (d) (iii) and (v)

45. In classes with large number of students, teachers face difficulty in
    (a) Paying individual attention to students
    (b) Understanding learning problems faced by students
    (c) Bringing flexibility in teaching
    (d) All of the above

46. Which of the following statements is not correct?
    (a) A good communicator cannot be a good teacher.
    (b) A good communicator has a good sense of humour.
    (c) A good communicator has wide reading knowledge.
    (d) A good communicator has command over language.

47. How can social and moral values be inculcated in students?
    (a) Through TV programmes, movies, and videos
    (b) Through inspirational speech, lectures, and seminars on values
    (c) By involving them in extracurricular activities
    (d) By harsh punishments for wrong behaviour

48. A teacher will become effective communicator, if
    (a) He uses instructional aids.
    (b) He helps students get meaning out of what he teaches.
    (c) He asks questions in between teaching.
    (d) He helps students get correct answer to the questions on the topic.

49. Teaching in higher education implies
    (a) Presenting the information given in the text-book
    (b) Asking questions in the class and conducting examination
    (c) Helping students prepare for and pass the examination
    (d) Helping students to learn

50. Teaching will be effective if the teacher
    (a) Is the master of subject
    (b) Has much experience in teaching the subject
    (c) Starts from what students know already
    (d) Uses many instructional aids

51. A college teacher will really help the students when she
    (a) Dictates notes in the class
    (b) Is objective in her evaluation
    (c) Encourages students to ask questions
    (d) Covers the syllabus completely in class

52. Which is the most desirable outcome of teaching in higher education?
    (a) Increase in student achievement
    (b) Increase in level of independent thinking of students
    (c) Higher percentage of results
    (d) Increase in number of students who opt for subject

53. Books can be a powerful source of communication, provided
    (a) The content is abstract.
    (b) The content is illustrative.
    (c) The medium is Hindi.
    (d) The content is presented through good print.

54. Good teaching is best reflected by
    (a) Attendance of students
    (b) Number of distinctions
    (c) Meaningful questions asked by students
    (d) Pin-drop silence in class

55. The main aim of classroom teaching is

    (a) To give information
    (b) To develop inquiring mind
    (c) To develop personality of students
    (d) To help students pass examination

56. Students prefer those teachers who
    (a) Dictate notes in the class
    (b) Give important questions before examination
    (c) Can clear their difficulties regarding subject matter
    (d) Are themselves disciplined

57. The main objective of teaching is to
    (a) Prepare students for job
    (b) Help them in getting a degree
    (c) Develop their thinking capability
    (d) Cover the syllabus

58. Which of the following is true about teacher's role in higher education?
    (i) Develop the personality of students
    (ii) Tell some favourite students about important questions before examination
    (iii) Motivate students for self-study
    (iv) Encourage creativity and critical thinking in students
    (v) Force students for tuitions after classes
    (a) (i), (ii), (iii), and (iv)
    (b) (ii), (iii), (iv), and (v)
    (c) (i), (iii), and (v)
    (d) (i), (iii), and (iv)

59. An effective teacher will ensure
    (a) Co-operation among his students
    (b) Laissez faire role
    (c) Competition among students
    (d) Competition or co-operation as the situation demands

60. A new teacher to start with will have to
    (a) Enforce discipline in class
    (b) Establish rapport with students
    (c) Cut jokes with the students
    (d) Tell the students about his qualifications

61. How can a teacher establish a good rapport with students?
    (a) By giving them gifts and chocolates
    (b) Telling them important questions before exams
    (c) Helping them during the exam by telling the answer
    (d) Guiding and assisting them in decision-making

62. How can the quality of teaching be assessed?
    (a) By marks scored by students
    (b) By environment of class, whether it is silent or noisy
    (c) By number of students in the class
    (d) By knowledge and all-round development of students

63. What should the teacher do if he is unable to draw attention of his students?
    (a) Resign from his post
    (b) Give them hand-outs
    (c) Should change the teaching method and aids
    (d) Scold and punish inattentive students

64. A teacher should not
    (a) Motivate students
    (b) Encourage competition among students
    (c) Ask for gifts or favour in return for giving good marks to students
    (d) Be friendly with students

65. A teacher should have
    (a) Friendly approach
    (b) Good communication skills
    (c) Command over the subject
    (d) All of the above

66. In his free time, the teacher should
    (a) Rest
    (b) Talk to students
    (c) Help in administrative work
    (d) Do research

67. The skills required for teaching are
    (i) Command over the subject
    (ii) Communication skills
    (iii) Knowledge of technology
    (iv) Conflict management skills
    (v) Good decision-making skills
    (vi) Subjectivity
    Select the correct code:
    (a) (i), (ii), (iii), (iv), (v)
    (b) (ii), (iii), (iv), (v), (vi)
    (c) (i), (ii), (iii), (v), (vi)
    (d) (i), (ii), (iii), (iv)

68. Micro teaching can be used for
    (a) Lower classes
    (b) Senior classes
    (c) 8th to 10th class
    (d) Both for lower and senior classes

69. Micro teaching was popularized by
    (a) Stanford University
    (b) Oxford University
    (c) Harvard University
    (d) MIT

70. The full form of CAI is
    (a) Computer Assisted Instruction
    (b) Company Analysing Intelligence
    (c) Computer Automated Induction
    (d) Computer Assistance Inquiry

71. Student participation is high in
    (a) Discussion   (b) Lecture
    (c) Assignments   (d) Presentation

72. The most important challenge before a teacher is
    (a) To maintain discipline in the class
    (b) To make students do their homework
    (c) To prepare question paper
    (d) To make teaching–learning process enjoyable

73. The psychological aspects of the classroom are best managed by the
    (a) Class teacher   (b) Subject teacher
    (c) Principal   (d) Student themselves

74. Students can be classified into four types on the basis of their learning. Which one of the following seeks meaning and reasoning to the learning?
    (a) Innovative learner
    (b) Analytic learner

(c) Common sense learner

(d) Dynamic learner

75. While presenting your ideas in a classroom it is better to

 (i) Recognize that there can be other views

 (ii) Recognize that students are not a homogenous mass

(iii) Take dissenting view also in consideration

Codes:

(a) Both (i) and (iii)　　(b) Only (iii)

(c) Only (ii) and (iii)　　(d) (i), (ii), and (iii)

76. The best way to react to a wrong answer given by a student is

(a) To scold him for not having learnt the lesson

(b) To explain why the answer is wrong

(c) To ask another student to give the correct answer

(d) To ignore the wrong answer and pass on to the next question

77. When a student asks a question to which the teacher has no direct, correct answer, he should

(a) Give some vague answer and satisfy the student

(b) Tell the student not to ask such questions

(c) Tell the student that he would give the correct answer later

(d) Ask the student to find out the answer by himself from books in the library

78. Failure of teacher to communicate his ideals well to the students may result in

(a) Classroom indiscipline

(b) Loss of students' interest in the topic being taught

(c) Increased number of absentees in the class

(d) All of the above

79. If the students do not understand what is taught in the class, the teacher should

(a) Repeat the lesson once again

(b) Teach the lesson again using suitable examples

(c) Check the previous knowledge of the students in the topic

(d) Proceed to the next topic

80. An ideal situation in a classroom would be where

 (i) A teacher comes fully prepared to deliver his lecture.

 (ii) Students come fully prepared and discuss the subject with each other in teacher's presence.

(iii) Teachers and students discuss the subject.

(iv) The teacher uses audio–visual aids while learning.

Codes:

(a) Both (i) and (iii)　　(b) Both (iii) and (iv)

(c) Only (ii)　　(d) Only (iv)

81. What is more desirable in a classroom?

(a) A teacher delivering a lecture on the basis of the text and his own research

(b) A teacher delivering a lecture on the basis of course content and standard books

(c) A teacher answering questions raised by students

(d) A teacher maintaining strict discipline and taking attendance regularly

82. Which of the following should a teacher adopt in a lecture?

(a) Precise and low tone

(b) Elongated tone

(c) Precise and high tone

(d) Moderate tone

83. If students do not understand what is taught in the classroom, the teacher should feel

(a) Terribly bored

(b) To explain it in a different way

(c) That he is wasting time

(d) Pity for the students

84. Discussion in class will be more effective if the topic of discussion is

(a) Not introduced

(b) Stated before the start of the discussion

(c) Written on the board without introducing it

(d) Informed to the students in advance

85. Teaching is

(a) Comfortable　　(b) Complex activity

(c) Boring　　(d) Financially lucrative

86. Consider the following Assertion and Reason:
    Assertion (A): Teaching should not be influenced by the individual differences among the learners.
    Reason (R): A teacher should not discriminate students on the basis of their colour, caste, creed, or religion.

    Select the correct code:
    (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
    (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
    (c) (A) is true and (R) is false.
    (d) (A) is false and (R) is true.

87. The individual differences among learners arise due to
    (a) Aptitude and intelligence
    (b) Personality and attitude
    (c) Prior knowledge
    (d) All of the above

88. Consider the following statements:
    (i) Study material has no impact on the effectiveness of teaching.
    (ii) Effectiveness of teaching can be improved by the use of teaching support systems.

    Select the correct code:
    (a) Only (i)   (b) Only (ii)
    (c) Both (i) and (ii)   (d) Neither (i) nor (ii)

89. To maximize the effectiveness of teaching, a teacher should use
    (a) Offline methods of teaching
    (b) Online methods of teaching
    (c) Either offline or online methods of teaching
    (d) A mix of both offline and online methods of teaching

90. Students can use _____ methods of learning without the restrictions of space and time.
    (a) Online   (b) Offline
    (c) Teacher-centred   (d) Learner-centred

91. Which of these methods of teaching can be used in remote areas?
    (a) Online methods
    (b) Offline methods

    (c) Teacher-centred methods
    (d) Learner-centred methods

92. Which of the following methods has features of both offline and online methods of teaching?
    (a) Flipped classrooms
    (b) Kinesthetic learning
    (c) Heuristics method
    (d) Simulations

93. Which of these is not a platform for MOOC?
    (a) MIT OCW   (b) Udacity
    (c) SWAYAM   (d) Egzaminer

94. SWAYAMPRABHA is an initiative of
    (a) IITs and IISc
    (b) Ministry of Education
    (c) Ministry of Human Resource Development
    (d) NCERT

95. Consortium for Educational Communication is
    (a) Nodal agency to coordinate the production of educational content
    (b) Inter-university centre
    (c) A guide and facilitator for production of educational content
    (d) All of the above

96. Epathshala is an initiative of
    (a) IITs and IISc
    (b) Ministry of Human Resource Development
    (c) NCERT
    (d) Both (b) and (c)

97. NPTEL is an initiative of
    (a) IITs and IISc
    (b) Ministry of Education
    (c) Ministry of Human Resource Development
    (d) NCERT

98. Consider the following statements:
    (i) In choice-based credit system, the burden on teachers and students increases.
    (ii) There is no condition of scoring minimum passing marks in choice-based credit system.

Which of the above statement(s) is/are not correct?

(a) Only (i)

(b) Only (ii)

(c) Both (i) and (ii)

(d) Neither (i) nor (ii)

99. OMR stands for

(a) Online Marked Response

(b) Optically Marked Response

(c) Optical Mark Reader

(d) Online Mark Reader

PREVIOUS YEARS' QUESTIONS

January 2017

1. Which of the following set of statements represents acceptable propositions in respect of teaching–learning relationships? Choose the correct code to indicate your answer.

   (i) When students fail in a test, it is the teacher who fails.

   (ii) Every teaching must aim at ensuring learning.

   (iii) There can be teaching without learning taking place.

   (iv) There can be no learning without teaching.

   (v) A teacher teaches but learns also.

   (vi) Real learning implies rote learning.

   Codes:

   (a) (ii), (iii), (iv), and (v)

   (b) (i), (ii), (iii), and (v)

   (c) (iii), (iv), (v), and (vi)

   (d) (i), (ii), (v), and (vi)

2. **Assertion (A):** Learning is a lifelong process.

   Reason (R): Learning to be useful must be linked with life processes.

   Choose the correct answer from the following codes:

   (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

   (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

   (c) (A) is true, but (R) is false.

   (d) (A) is false, but (R) is true.

3. Effectiveness of teaching has to be judged in terms of

   (a) Course coverage

   (b) Students' interest

   (c) Learning outcomes of students

   (d) Use of teaching aids in the classroom

4. In which teaching method is learner's participation made optimal and proactive?

   (a) Discussion method

   (b) Buzz session method

   (c) Brainstorming session method

   (d) Project method

5. One of the most powerful factors affecting teaching effectiveness is related to the

   (a) Social system of the country

   (b) Economic status of the society

   (c) Prevailing political system

   (d) Educational system

6. **Assertion (A):** Formative evaluation tends to accelerate the pace of learning.

   Reason (R): As against summative evaluation, formative evaluation is highly reliable.

   Choose the correct answer from the following codes:

   (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

   (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

   (c) (A) is true, but (R) is false.

   (d) (A) is false, but (R) is true.

August 2016

7. Which of the following set of statements reflects the basic characteristics of teaching?

   Select the correct alternative from the codes:

   (i) Teaching is the same as training.

   (ii) There is no difference between instruction and conditioning when we teach.

(iii) Teaching is related to learning.

(iv) Teaching is a 'task' word while learning is an 'achievement' word.

(v) Teaching means giving information.

(vi) One may teach without learning taking place.

Codes:

(a) (i), (ii), and (iii) (b) (iii), (iv), and (vi)

(c) (ii), (iii), and (v) (d) (i), (iv), and (vi)

8. Which of the following factors affect teaching?

Choose the correct code to indicate your answer.

(i) Teacher's internal locus of control

(ii) Learner-motivation

(iii) Teacher's biographical data

(iv) Teacher's self-efficacy

(v) Learner's interest in co-curricular activities

(vi) Teacher's skill in managing and monitoring

(vii) Teacher's knowledge of the subject including general knowledge

Codes:

(a) (i), (ii), (iv), (vi), and (vii)

(b) (i), (ii), (iii), (iv), and (v)

(c) (iii), (iv), (v), (vi), and (vii)

(d) (ii), (iii), (iv), (v), and (vi)

9. Which combination of methods of teaching is likely to optimize learning?

(a) Lecturing, discussions, and seminar method

(b) Interactive discussions, planned lectures, and PowerPoint based presentations

(c) Interactive lecture sessions followed by buzz sessions, brainstorming, and projects

(d) Lecturing, demonstrations and PowerPoint based presentations

10. **Assertion (A):** Teaching aids have to be considered as effective supplements to instruction.

Reason (R): They keep the students in good humour.

Choose the correct answer from the codes given below:

Codes:

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).

(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(c) (A) is true, but (R) is false.

(d) (A) is false, but (R) is true.

11. The purpose of formative evaluation is to

(a) Grade students' learning outcomes

(b) Accelerate students' learning performance

(c) Check students' performance graph

(d) Provide feedback to teacher effectiveness

12. Which of the following learner characteristics are likely to influence the effectiveness of teaching aids and evaluation systems to ensure positive results?

(a) Learner's family background, age, and habitation

(b) Learner's parentage, socio-economic background, and performance in learning of the concerned subject

(c) Learner's stage of development, social background, and personal interests

(d) Learner's maturity level, academic performance level, and motivational dispositions

13. Internal and external factors that affect message reception by the students in the classroom are referred to as

(a) Feedback (b) Fragmentation

(c) Channelization (d) Noise

14. A teacher in a classroom has immediate control over

(a) The self, the selected methods of communication, and the message

(b) The audience, the noise, and the reception

(c) The feedback, the technology and the audience experience

(d) The communication channel, other communicators, and external factors

15. As a good classroom communicator, you are supposed to know your

(a) Audience emotions

(b) Silent cues

(c) Artful pauses

(d) Counter arguments

July 2016

16. The best way for providing value education is through

(a) Discussions on scriptural texts

(b) Lecture/discourses on values

(c) Seminars/symposia on values

(d) Mentoring/reflective sessions on values

17. Which set of learner characteristics may be considered helpful in designing effective teaching–learning systems? Select the correct alternative from the codes given below:

   (i) Prior experience of learners in respect of the subject

   (ii) Interpersonal relationships of learner's family friends

   (iii) Ability of the learners in respect of the subject

   (iv) Student's language background

   (v) Interest of students in following the prescribed dress code

   (vi) Motivational-orientation of the students

   Codes:

   (a) (i), (ii), (iii), and (iv)

   (b) (i), (iii), (iv), and (vi)

   (c) (ii), (iii), (iv), and (v)

   (d) (iii), (iv), (v), and (vi)

18. A college-level assistant professor has planned his/her lectures with the intent to develop cognitive dimensions of students centred on skills of analysis and synthesis. Below given are two sets of items Set-I consisting of levels of cognitive interchange and Set-II comprising basic requirements for promoting them. Match the two sets and indicate your answer by choosing the correct alternative from the code:

Set-I (Levels of cognitive interchange)	Set-II (Basic requirements for promoting cognitive interchange)
(A) Memory level	(i) Giving opportunity for discriminating examples and non-examples of a point.
(B) Understanding level	(ii) Recording the important points made during the presentations.
(C) Reflective level	(iii) Asking the students to discuss various items of information.
	(iv) Critically analysing the points to be made and discussed.

Codes:

	(A)	(B)	(C)
(a)	(ii)	(iv)	(i)
(b)	(iii)	(iv)	(ii)
(c)	(ii)	(i)	(iv)
(d)	(i)	(ii)	(iii)

19. Match the items of the first set with that of the second set in respect of the evaluation system. Choose the correct code:

Set-I	Set-II
(A) Formative evaluation	(i) Evaluating cognitive and co-cognitive aspects with regularity
(B) Summative evaluation	(ii) Tests and their interpretations based on a group and certain yardsticks
(C) Continuous and comprehensive evaluation	(iii) Grading the final learning outcomes
(D) Norm and criterion referenced	(iv) Quizzes and discussions tests

Codes:

	(A)	(B)	(C)	(D)
(a)	(iv)	(iii)	(i)	(ii)
(b)	(i)	(ii)	(iii)	(iv)
(c)	(iii)	(iv)	(ii)	(i)
(d)	(i)	(iii)	(iv)	(ii)

20. Select the alternative which consists of positive factors contributing to effectiveness of teaching:

   List of factors:

   (i) Teacher's knowledge of the subject

   (ii) Teacher's socio-economic background

   (iii) Communication skill of the teacher

   (iv) Teacher's ability to please the students

   (v) Teacher's personal contact with students

   (vi) Teacher's competence in managing and monitoring the classroom transactions

   Codes:

   (a) (ii), (iii), and (iv)　　(b) (iii), (iv), and (vi)

   (c) (ii), (iv), and (v)　　(d) (i), (iii), and (vi)

21. The use of teaching aids is justified on the grounds of
    (a) Attracting students' attention in the classroom
    (b) Minimizing indiscipline problems in the classroom
    (c) Optimizing learning outcomes of students
    (d) Effective engagement of students in learning tasks

22. **Assertion (A):** The purpose of higher education is to promote critical and creative thinking abilities among students.
    Reason (R): These abilities ensure job placements.
    Choose the correct answer from the following code:
    (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
    (b) Both (A) and (R) are true but (R) is not the correct explanation of (A).
    (c) (A) is true and (R) is false.
    (d) (A) is false and (R) is true.

23. As a teacher, select the best option to ensure your effective presence in the classroom.
    (a) Use of peer command
    (b) Making aggressive statements
    (c) Adoption of well-established posture
    (d) Being authoritarian

24. Identify the important element that a teacher has to take cognizance of while addressing students in a classroom.
    (a) Avoidance of proximity
    (b) Voice modulation
    (c) Repetitive pause
    (d) Fixed posture

December 2015

25. Greater the handicap of the students coming to the educational institutions, greater the demand on the:
    (a) Family   (b) Society
    (c) Teacher   (d) State

26. What are the characteristics of continuous and comprehensive evaluation?
    (i) It increases the workload on students by taking multiple tests.
    (ii) It replaces marks with grades.
    (iii) It evaluates every aspect of the student.
    (iv) It helps in reducing examination phobia.
    Select the correct answer from the codes given below:
    (a) (i), (ii), (iii) and (iv)
    (b) (ii) and (iv)
    (c) (i), (ii), and (iii)
    (d) (ii), (iii), and (iv)

27. Which of the following attributes denote great strengths of a teacher?
    (i) Full-time active involvement in the institutional management
    (ii) Setting examples
    (iii) Willingness to put assumptions to the test
    (iv) Acknowledging mistakes
    Select the correct answer from the codes given below:
    (a) (i), (ii), and (iv)   (b) (ii), (iii), and (iv)
    (c) (i), (iii), and (iv)   (d) (i), (ii), (iii), and (iv)

28. Which one of the following statements is correct in the context of multiple choice type questions?
    (a) They are more objective than true/false type questions.
    (b) They are less objective than essay type questions.
    (c) They are more subjective than short-answer type questions.
    (d) They are more subjective than true/false type questions.

29. As the chairman of an independent commission on education, Jacques Delors report to UNESCO was titled
    (a) International Commission on Education Report
    (b) Millennium Development Report
    (c) Learning: The Treasure Within
    (d) World Declaration on Education for All

30. What are required for good teaching?
    (i) Diagnosis   (ii) Remedy
    (iii) Direction   (iv) Feedback

Select the correct answer from the codes given below:

(a) (i), (ii), (iii), and (iv)

(b) (i) and (ii)

(c) (ii), (iii), and (iv)

(d) (iii) and (iv)

31. The main objectives of student evaluation of teachers are:

 (i) To gather information about student weaknesses

 (ii) To make teachers take teaching seriously

 (iii) To help teachers adopt innovative methods of teaching

 (iv) To identify the areas of further improvement in teacher traits

 Identify the correct answer from the codes given below:

 (a) Only (i) and (ii)

 (b) Only (ii), (iii), and (iv)

 (c) Only (i), (ii), and (iii)

 (d) Only (i)

32. Using the central point of classroom communication as the beginning of a dynamic pattern of ideas is referred to as:

 (a) Systemization   (b) Problem-orientation

 (c) Idea protocol   (d) Mind mapping

33. Most often, the teacher–student communication is:

 (a) Spurious   (b) Critical

 (c) Utilitarian   (d) Confrontational

34. In a classroom, a communicator's trust level is determined by:

 (a) The use of hyperbole

 (b) The change of voice level

 (c) The use of abstract concepts

 (d) Eye contact

June 2015

35. Which of the following is the highest level of cognitive ability?

 (a) Knowing   (b) Understanding

 (c) Analysing   (d) Evaluating

36. Which of the following factors does not impact teaching?

 (a) Classroom activities that encourage learning

 (b) Socio-economic background of teachers and students

 (c) Learning through experience

 (d) Teacher's knowledge

37. Which of the following statements about teaching aids are correct?

 (i) They help in retaining concepts for longer duration.

 (ii) They help students learn better.

 (iii) They make teaching–learning process interesting.

 (iv) They enhance rote learning.

 (a) (i), (ii), (iii), and (iv)

 (b) (i), (ii), and (iii)

 (c) (ii), (iii), and (iv)

 (d) (i), (ii), and (iv)

38. Techniques used by a teacher to teach include

 (i) Lecture   (ii) Interactive lecture

 (iii) Group work   (iv) Self study

 (a) (i), (ii), and (iii)   (b) (i), (ii) (iii), and (iv)

 (c) (ii), (iii), and (iv)   (d) (i), (ii), and (iv)

39. Achievement tests are commonly used for the purpose of

 (a) Making selections for a specific job

 (b) Selecting candidates for a course

 (c) Identifying strengths and weaknesses of learners

 (d) Assessing the amount of learning after teaching

40. A good teacher is one who

 (a) Gives useful information

 (b) Explains concepts and principles

 (c) Gives printed notes to students

 (d) Inspires students to learn

December 2014

41. Maximum participation of students during teaching is possible through

 (a) Lecture method

 (b) Demonstration method

 (c) Inductive method

 (d) Textbook method

42. Diagnostic evaluation ascertains
    (a) Students' performance at the beginning of instructions
    (b) Learning progress and failures during instructions
    (c) Degree of achievements of instructions at the end
    (d) Causes and remedies of persistent learning problems during instructions

43. Instructional aides are used by the teacher to
    (a) Glorify the class
    (b) Attract the students
    (c) Clarify the concepts
    (d) Ensure discipline

44. Attitude of the teacher that affects teaching pertains to
    (a) Affective domain
    (b) Cognitive domain
    (c) Connative domain
    (d) Psychomotor domain

45. 'Education is the manifestation of perfection already in man' was stated by
    (a) M.K. Gandhi
    (b) R.N. Tagore
    (c) Swami Vivekananda
    (d) Sri Aurobindo

46. Which of the following is not a prescribed level of teaching?
    (a) Memory   (b) Understanding
    (c) Reflective   (d) Differentiation

47. In the classroom, the teacher sends the message either as words or images. The students are really
    (a) Encoders   (b) Decoders
    (c) Agitators   (d) Propagators

48. A smart classroom is a teaching space which has
    (i) Smart portion with a touch panel control system
    (ii) PC/laptop connection and DVD/VCR player
    (iii) Document camera and specialized software
    (iv) Projector and screen

    Select the correct answer from the codes given below:

    (a) Only (i) and (ii)
    (b) Only (ii) and (iv)
    (c) Only (i), (ii), and (iii)
    (d) (i), (ii), (iii), and (iv)

June 2014

49. Which one of the following is considered a sign of motivated teaching?
    (a) Students asking questions
    (b) Maximum attendance of the students
    (c) Pindrop silence in the classroom
    (d) Students taking notes

50. Which one of the following is the best method of teaching?
    (a) Lecture   (b) Discussion
    (c) Demonstration   (d) Narration

51. Dyslexia is associated with
    (a) Mental disorder   (b) Behavioural disorder
    (c) Reading disorder   (d) Writing disorder

52. The e-content generation for undergraduate courses has been assigned by the Ministry of Human Resource Development to
    (a) INFLIBNET
    (b) Consortium for Educational Communication
    (c) National Knowledge Commission
    (d) Indira Gandhi National Open University

53. Classroom communication is normally considered as
    (a) Effective   (b) Cognitive
    (c) Affective   (d) Selective

54. Who among the following propounded the concept of paradigm?
    (a) Peter Haggett   (b) Von Thunen
    (c) Thomas Kuhn   (d) John K. Wright

December 2013

55. While delivering a lecture if there is some disturbance in the class, a teacher should
    (a) Keep quiet for a while and then continue
    (b) Punish those causing disturbance
    (c) Motivate to teach those causing disturbance
    (d) Not bother of what is happening in the class

56. Effective teaching is a function of
    (a) Teacher's satisfaction
    (b) Teacher's honesty and commitment
    (c) Teacher's making students learn and understand
    (d) Teacher's liking for professional excellence

57. The most appropriate meaning of learning is
    (a) Acquisition of skills
    (b) Modification of behaviour
    (c) Personal adjustment
    (d) Inculcation of knowledge

58. Arrange the following teaching process in order:
    (i) Relate the present knowledge with previous one
    (ii) Evaluation
    (iii) Reteaching
    (iv) Formulating instructional objectives
    (v) Presentation of instructional materials
    (a) (i), (ii), (iii), (iv), (v)
    (b) (ii), (i), (iii), (iv), (v)
    (c) (v), (iv), (iii), (i), (ii)
    (d) (iv), (i), (v), (ii), (iii)

59. CIET stands for
    (a) Centre for Integrated Education and Technology
    (b) Central Institute for Engineering and Technology
    (c) Central Institute for Education Technology
    (d) Centre for Integrated Evaluation Techniques

60. Teacher's role in higher education is to
    (a) Provide information to students
    (b) Promote self-learning in students
    (c) Encourage healthy competition among students
    (d) Help students to solve their problems

61. The Verstehen School of Understanding was popularized by
    (a) German social scientists
    (b) American philosophers
    (c) British academicians
    (d) Italian political analysts

September 2013

62. A good teacher must be
    (a) Resourceful and autocratic
    (b) Resourceful and participative
    (c) Resourceful and authoritative
    (d) Resourceful and dominant

63. Which one of the following is the best method of teaching?
    (a) Lecture method
    (b) Discussion method
    (c) Demonstration method
    (d) Question–Answer method

64. Successful communication in classroom teaching is
    (a) Circular   (b) Reciprocal
    (c) Directional   (d) Influential

65. Which one of the following types of evaluation assesses the learning progress to provide continuous feedback to both teachers and students during instruction?
    (a) Placement evaluation
    (b) Formative evaluation
    (c) Diagnostic evaluation
    (d) Summative

66. Which one of the following is a scaled down teaching situation?
    (a) Macro teaching
    (b) Team teaching
    (c) Cooperative teaching
    (d) Micro teaching

67. CLASS stands for
    (a) Complete Literacy and Studies in Schools
    (b) Computer Literates and Students in Schools
    (c) Computer Literacy and Studies in Schools
    (d) Centre for Literacy and Studies in Schools

June 2013

68. The blackboard can be utilized best by a teacher for
    (a) Putting the matter of teaching in black and white
    (b) Making the students attentive

(c) Writing the important and notable points

(d) Highlighting the teacher himself

69. Nowadays the most effective mode of learning is
    (a) Self-study
    (b) Face-to-face learning
    (c) e-Learning
    (d) Blended learning

70. At the primary school stage, most of the teachers should be women because they
    (a) Can teach children better than men
    (b) Know basic content better than men
    (c) Are available on lower salaries
    (d) Can deal with children with love and affection

71. Which one is the highest order of learning?
    (a) Chain learning
    (b) Problem-solving learning
    (c) Stimulus–response learning
    (d) Conditioned-reflex learning

72. A person can enjoy teaching as a profession when he
    (a) Has control over students
    (b) Commands respect from students
    (c) Is more qualified than his colleagues
    (d) Is very close to higher authorities

73. 'A diagram speaks more than 1000 words.' The statement means that the teacher should
    (a) Use diagrams in teaching
    (b) Speak more and more in the class
    (c) Use teaching aids in the class
    (d) Not speak too much in the class

December 2012

74. For an efficient and durable learning, the learner should have
    (a) Ability to learn only
    (b) Requisite level of motivation only
    (c) Opportunities to learn only
    (d) Desired level of ability and motivation

75. Classroom communication must be
    (a) Teacher-centric   (b) Student-centric
    (c) General-centric   (d) Textbook-centric

76. The best method of teaching is to
    (a) Impart information
    (b) Ask students to read books
    (c) Suggest good reference material
    (d) Initiate a discussion and participate in it

77. Interaction inside the classroom should generate
    (a) Argument   (b) Information
    (c) Ideas   (d) Controversy

78. 'Spare the rod and spoil the child', gives the message that
    (a) Punishment in the class should be banned.
    (b) Corporal punishment is not acceptable.
    (c) Undesirable behaviour must be punished.
    (d) Children should be beaten with rods.

79. The type of communication that the teacher has in the classroom, is termed as
    (a) Interpersonal
    (b) Mass communication
    (c) Group communication
    (d) Face-to-face communication

June 2012

80. If you get an opportunity to teach a visually challenged student along with normal students, what type of treatment would you like to give him in the class?
    (a) Not giving extra attention because the majority may suffer.
    (b) Take care of him sympathetically in the classroom.
    (c) You will think that blindness is his destiny and hence you cannot do anything.
    (d) Arrange a seat in the front row and try to teach at a pace convenient to him.

81. Which of the following is not a characteristic of a good achievement test?
    (a) Reliability   (b) Objectivity
    (c) Ambiguity   (d) Validity

82. Which of the following does not belong to a projected aid?
    (a) Overhead projector
    (b) Blackboard
    (c) Epidiascope
    (d) Slide projector

83. For a teacher, which of the following methods would be correct for writing on the blackboard?
    (a) Writing fast and as clearly as possible
    (b) Writing the matter first and then asking students to read it
    (c) Asking a question to students and then writing the answer as stated by them
    (d) Writing the important points as clearly as possible

84. A teacher can be successful if he/she
    (a) Helps students in becoming better citizens
    (b) Imparts subject knowledge to students
    (c) Prepares students to pass the examination
    (d) Presents the subject matter in a well-organized manner

85. Dynamic approach to teaching means
    (a) Teaching should be forceful and effective.
    (b) Teachers should be energetic and dynamic.
    (c) The topics of teaching should not be static, but dynamic.
    (d) The students should be required to learn through activities.

December 2011

86. By which of the following methods is the true evaluation of the students possible?
    (a) Evaluation at the end of the course
    (b) Evaluation twice in a year
    (c) Continuous evaluation
    (d) Formative evaluation

87. Suppose a student wants to share his problems with his teacher and he visits the teacher's house for the purpose, the teacher should
    (a) Contact the student's parents and solve his problem
    (b) Tell him that he should never visit his house
    (c) Tell him to meet the principal and solve the problem
    (d) Extend reasonable help and boost his morale

88. When some students attempt to disturb the discipline of the class by making mischief, what will be your role as a teacher?
    (a) Expel those students
    (b) Isolate those students
    (c) Reform the group with your authority
    (d) Give them an opportunity for introspection and improve their behaviour

89. Which of the following belongs to a projected aid?
    (a) Blackboard   (b) Diorama
    (c) Epidiascope   (d) Globe

90. A teacher is said to be fluent in asking questions, if he can ask
    (a) Meaningful questions
    (b) As many questions as possible
    (c) Maximum number of questions in a fixed time
    (d) Many meaningful questions in a fixed time

91. Which of the following qualities is most essential for a teacher?
    (a) He should be a learned person.
    (b) He should be a well-dressed person.
    (c) He should have patience.
    (d) He should be an expert in his subject.

June 2011

92. For maintaining effective discipline in the class, the teacher should
    (a) Allow students to do what they like.
    (b) Deal with the students strictly.
    (c) Give the students some problem to solve.
    (d) Deal with them politely and firmly.

93. An effective teaching aid is one which
    (a) Is colourful and good looking
    (b) Activates all faculties
    (c) Is visible to all students
    (d) Easy to prepare and use

94. Those teachers are popular among students who
    (a) Develop intimacy with them
    (b) Help them solve their problems
    (c) Award good grades
    (d) Take classes on extra tuition fee

95. The essence of an effective classroom environment is
    (a) A variety of teaching aids
    (b) Lively student–teacher interaction

(c) Pin-drop silence

(d) Strict discipline

96. On the first day of his class, if a teacher is asked by the students to introduce himself, he should

(a) Ask them to meet after the class

(b) Tell them about him in brief

(c) Ignore the demand and start teaching

(d) Scold the student for this unwanted demand

97. Moral values can be effectively inculcated among the students when the teacher

(a) Frequently talks about values

(b) Himself practices them

(c) Tells stories of great persons

(d) Talks of gods and goddesses

December 2010

98. Some students in a class exhibit great curiosity for learning. It may be because such children

(a) Are gifted

(b) Come from rich families

(c) Show artificial behaviour

(d) Create indiscipline in the class

99. The most important quality of a good teacher is

(a) Sound knowledge of subject matter

(b) Good communication skills

(c) Concern for students' welfare

(d) Effective leadership qualities

100. Which one of the following is appropriate in respect of teacher–student relationship?

(a) Very informal and intimate

(b) Limited to classroom only

(c) Cordial and respectful

(d) Indifferent

101. The academic performance of students can be improved if parents are encouraged to

(a) Supervise the work of their wards

(b) Arrange for extra tuition

(c) Remain unconcerned about it

(d) Interact with teachers frequently

102. In a lively classroom situation, there is likely to be

(a) Occasional roars of laughter

(b) Complete silence

(c) Frequent teacher–student dialogue

(d) Loud discussion among students

103. If a parent approaches the teacher to do some favour to his/her ward in the examination, the teacher should

(a) Try to help him

(b) Ask him not to talk in those terms

(c) Refuse politely and firmly

(d) Ask him rudely to go away

June 2010

104. Which one of the following is the most important quality of a good teacher?

(a) Punctuality and sincerity

(b) Content mastery

(c) Content mastery and reactive

(d) Content mastery and sociable

105. The primary responsibility for the teacher's adjustment lies with

(a) The children

(b) The principal

(c) The teacher himself

(d) The community

106. As per the NCTE norms, what should be the staff strength for a unit of 100 students at B.Ed. level?

(a) 1 + 7   (b) 1 + 9

(c) 1 + 10   (d) 1 + 5

107. Research has shown that the most frequent symptom of nervous instability among teachers is

(a) Digestive upsets   (b) Explosive behaviour

(c) Fatigue   (d) Worry

108. Which one of the following statements is correct?

(a) Syllabus is an annexure to the curriculum.

(b) Curriculum is the same in all educational institutions.

(c) Curriculum includes both formal and informal education.

(d) Curriculum does not include methods of evaluation.

109. A successful teacher is one who is
    (a) Compassionate and disciplinarian
    (b) Quite and reactive
    (c) Tolerant and dominating
    (d) Passive and active

December 2009

110. The university which telecasts educational programmes through its own channel is
    (a) Osmania University
    (b) University of Pune
    (c) Annamalai University
    (d) Indira Gandhi National Open University (IGNOU)

111. Which of the following skills are needed for present-day teacher to adjust effectively with the classroom teaching?
    (i) Knowledge of technology
    (ii) Use of technology in teaching-learning
    (iii) Knowledge of students' needs
    (iv) Content mastery
    (a) (i) and (iii)   (b) (ii) and (iii)
    (c) (ii), (iii), and (iv)   (d) (ii) and (iv)

112. Who has signed an MOU for Accreditation of Teacher Education Institutions in India?
    (a) NAAC and UGC   (b) NCTE and NAAC
    (c) UGC and NCTE   (d) NCTE and IGNOU

113. The primary duty of the teacher is to
    (a) Raise the intellectual standard of the students
    (b) Improve the physical standard of the students
    (c) Help all-round development of the students
    (d) Imbibe value system in the students

114. Micro teaching is more effective
    (a) During the preparation for teaching-practice
    (b) During the teaching-practice
    (c) After the teaching-practice
    (d) Always

115. What quality does the students like the most in a teacher?
    (a) Idealist philosophy
    (b) Compassion
    (c) Discipline
    (d) Entertaining

116. Which of the following is more interactive and student centric?
    (a) Seminar   (b) Workshop
    (c) Lecture   (d) Group discussion

117. **Assertion (A):** For an effective classroom communication at times it is desirable to use the projection technology.

    Reason (R): Using the projection technology facilitates extensive coverage of course contents.
    (a) Both (A) and (R) are true, and (R) is the correct explanation.
    (b) Both (A) and (R) are true, but (R) is not the correct explanation.
    (c) (A) is true, but (R) is false.
    (d) (A) is false, but (R) is true.

June 2009

118. Good evaluation of written material should not be based on:
    (a) Linguistic expression
    (b) Logical presentation
    (c) Ability to reproduce whatever is read
    (d) Comprehension of subject

119. Why do teachers use teaching aid?
    (a) To make teaching fun-filled
    (b) To teach within the understanding level of students
    (c) For students' attention
    (d) To make students attentive

120. Attitudes, concepts, skills, and knowledge are products of:
    (a) Learning   (b) Research
    (c) Heredity   (d) Explanation

121. Which among the following gives more freedom to the learner to interact?
    (a) Use of film
    (b) Small group discussion
    (c) Lectures by experts
    (d) Viewing country-wide classroom programme on TV

122. Which of the following is not a product of learning?
    (a) Attitudes   (b) Concepts
    (c) Knowledge   (d) Maturation

December 2008

123. According to Swami Vivekananda, teacher's success depends on:
    (a) His renunciation of personal gain and service to others
    (b) His professional training and creativity
    (c) His concentration on his work and duties with a spirit of obedience to God
    (d) His mastery on the subject and capacity in controlling the students

124. Which of the following teacher will be liked the most?
    (a) A teacher of high idealistic attitude
    (b) A loving teacher
    (c) A teacher who is disciplined
    (d) A teacher who often amuses his students

125. A teacher's most important challenge is:
    (a) To make students do their homework
    (b) To make teaching–learning process enjoyable
    (c) To maintain discipline in the classroom
    (d) To prepare the question paper

126. Value-education stands for:
    (a) Making a student healthy
    (b) Making a student to get a job
    (c) Inculcation of virtues
    (d) All-round development of personality

127. When a normal student behaves in an erratic manner in the class, you would:
    (a) Pull up the student then and there
    (b) Talk to the student after the class
    (c) Ask the student to leave the class
    (d) Ignore the student

June 2008

128. The teacher has been glorified by the phrase 'Friend, philosopher and guide' because:
    (a) He has to play all vital roles in the context of society.
    (b) He transmits the high value of humanity to students.

(c) He is the great reformer of the society.
(d) He is a great patriot.

129. The most important cause of failure for teacher lies in the area of:
    (a) Interpersonal relationship
    (b) Lack of command over the knowledge of the subject
    (c) Verbal ability
    (d) Strict handling of the students

130. A teacher can establish rapport with his students by:
    (a) Becoming a figure of authority
    (b) Impressing students with knowledge and skill
    (c) Playing the role of a guide
    (d) Becoming a friend to the students

131. Education is a powerful instrument of:
    (a) Social transformation
    (b) Personal transformation
    (c) Cultural transformation
    (d) All of the above

132. A teacher's major contribution towards the maximum self-realization of the student is affected through:
    (a) Constant fulfilment of the students' needs
    (b) Strict control of classroom activities
    (c) Sensitivity to students' needs, goals, and purposes
    (d) Strict reinforcement of academic standards

December 2007

133. Verbal guidance is least effective in the learning of:
    (a) Aptitudes   (b) Skills
    (c) Attitudes   (d) Relationship

134. Which is the most important aspect of the teacher's role in learning?
    (a) The development of insight into what constitutes an adequate performance
    (b) The development of insight into what constitutes the pitfalls and dangers to be avoided
    (c) The provision of encouragement and moral support
    (d) The provision of continuous diagnostic and remedial help

135. The most appropriate purpose of learning is:
    (a) Personal adjustment
    (b) Modification of behaviour
    (c) Social and political awareness
    (d) Preparing oneself for employment

136. The students who keep on asking questions in the class should be:
    (a) Encouraged to find answer independently
    (b) Advised to meet the teacher after the class
    (c) Encouraged to continue questioning
    (d) Advised not to disturb during the lecture

137. Maximum participation of students is possible in teaching through:
    (a) Discussion method
    (b) Lecture method
    (c) Audio–visual aids
    (d) Textbook method

138. Use of radio for higher education is based on the presumption of:
    (a) Enriching curriculum-based instruction
    (b) Replacing teacher in the long run
    (c) Everybody having access to a radio set
    (d) Other means of instruction getting outdated

June 2007

139. The teacher uses visual-aids to make learning:
    (a) Simple
    (b) More knowledgeable
    (c) Quicker
    (d) Interesting

140. The teacher's role at the higher educational level is to:
    (a) Provide information to students
    (b) Promote self-learning in students
    (c) Encourage healthy competition among students
    (d) Help students to solve their personal problems

141. Which one of the following teachers would you like the most?
    (a) Punctual
    (b) Having research aptitude
    (c) Loving and having high idealistic philosophy
    (d) Who often amuses students

142. Micro teaching is most effective for the student–teacher:
    (a) During the practice-teaching
    (b) After the practice-teaching
    (c) Before the practice-teaching
    (d) None of the above

143. Which is the least important factor in teaching?
    (a) Punishing the students
    (b) Maintaining discipline in the class
    (c) Lecturing in an impressive way
    (d) Drawing sketches and diagrams on the blackboard

December 2006

144. Which of the following is not instructional material?
    (a) Overhead projector   (b) Audio cassette
    (c) Printed material   (d) Transparency

145. Which of the following statement is not correct?
    (a) Lecture method can develop reasoning.
    (b) Lecture method can develop knowledge.
    (c) Lecture method is a one-way process.
    (d) During lecture method students are passive.

146. The main objective of teaching at higher education level is:
    (a) To prepare students to pass examination
    (b) To develop the capacity to take decisions
    (c) To give new information
    (d) To motivate students to ask questions during lecture

147. Which of the following indicates evaluation?
    (a) Ram got 45 marks out of 200.
    (b) Mohan got 38% marks in English.
    (c) Shyam got first division in final examination.
    (d) All of the above.

June 2006

148. Which of the following comprise teaching skill?
    (a) Blackboard writing
    (b) Questioning
    (c) Explaining
    (d) All of the above

149. Which of the following statements is most appropriate?
    (a) Teachers can teach.
    (b) Teachers help can create in a student a desire to learn.
    (c) Lecture method can be used for developing thinking.
    (d) Teachers are born.

150. The first Indian chronicler of Indian history was:
    (a) Megasthanese   (b) Fahiyan
    (c) Huan Tsang   (d) Kalhan

151. Which of the following statements is correct?
    (a) Syllabus is a part of curriculum.
    (b) Syllabus is an annexure to curriculum.
    (c) Curriculum is the same in all educational institutions affiliated to a particular university.
    (d) Syllabus is not the same in all educational institutions affiliated to a particular university.

152. Which of the two given options is of the level of understanding?
     (i) Define noun.
    (ii) Define noun in your own words.
    (a) Only (i)   (b) Only (ii)
    (c) Both (i) and (ii)   (d) Neither (i) nor (ii)

December 2005

153. Team teaching has the potential to develop:
    (a) Competitive spirit
    (b) Cooperation
    (c) The habit of supplementing the teaching of each other
    (d) Highlighting the gaps in each other's teaching

154. Which of the following is the most important characteristic of Open Book Examination system?
    (a) Students become serious.
    (b) It improves attendance in the classroom.
    (c) It reduces examination anxiety amongst students.
    (d) It compels students to think.

155. Which of the following methods of teaching encourages the use of maximum senses?

    (a) Problem-solving method
    (b) Laboratory method
    (c) Self-study method
    (d) Team teaching method

156. An effective teacher is one who can:
    (a) Control the class
    (b) Give more information in less time
    (c) Motivate students to learn
    (d) Correct the assignments carefully

December 2004

157. Discussion Method can be used when:
    (a) The topic is very difficult.
    (b) The topic is easy.
    (c) The topic is difficult.
    (d) All of the above.

158. Which of the following is a teaching aid?
    (a) Working model of windmill
    (b) Tape recorder
    (c) 16 mm Film projector
    (d) All of the above

159. The main aim of teaching is:
    (a) To develop only reasoning
    (b) To develop only thinking
    (c) To give information
    (d) Both (a) and (b)

160. The quality of teaching is reflected:
    (a) By the attendance of students in the class
    (b) By the pass percentage of students
    (c) By the quality of questions asked by students
    (d) By the duration of silence maintained in the class

161. The current annual examination system:
    (a) Promotes rote learning
    (b) Does not promote good study habits
    (c) Does not encourage students to be regular in class
    (d) All of the above

ANSWERS TO PRACTICE QUESTIONS

1. (d)	2. (c)	3. (c)	4. (c)	5. (d)	6. (d)	7. (b)	8. (b)	9. (c)
10. (b)	11. (d)	12. (a)	13. (d)	14. (c)	15. (d)	16. (d)	17. (c)	18. (d)
19. (a)	20. (a)	21. (b)	22. (b)	23. (a)	24. (d)	25. (b)	26. (a)	27. (d)
28. (b)	29. (c)	30. (c)	31. (b)	32. (d)	33. (c)	34. (d)	35. (a)	36. (d)
37. (d)	38. (d)	39. (b)	40. (d)	41. (a)	42. (a)	43. (c)	44. (d)	45. (d)
46. (a)	47. (c)	48. (b)	49. (d)	50. (c)	51. (b)	52. (b)	53. (b)	54. (c)
55. (b)	56. (c)	57. (c)	58. (d)	59. (d)	60. (b)	61. (d)	62. (d)	63. (c)
64. (c)	65. (d)	66. (d)	67. (a)	68. (d)	69. (a)	70. (a)	71. (a)	72. (d)
73. (a)	74. (b)	75. (d)	76. (b)	77. (c)	78. (d)	79. (b)	80. (a)	81. (a)
82. (c)	83. (b)	84. (d)	85. (b)	86. (d)	87. (d)	88. (b)	89. (d)	90. (a)
91. (b)	92. (a)	93. (d)	94. (c)	95. (d)	96. (d)	97. (a)	98. (c)	99. (c)

ANSWERS TO PREVIOUS YEARS' QUESTIONS

1. (b)	2. (a)	3. (c)	4. (a)	5. (d)	6. (c)	7. (b)
8. (a)	9. (c)	10. (b)	11. (b)	12. (d)	13. (d)	14. (a)
15. (c)	16. (b)	17. (b)	18. (c)	19. (a)	20. (d)	21. (d)
22. (c)	23. (c)	24. (b)	25. (c)	26. (d)	27. (b)	28. (a)
29. (c)	30. (a)	31. (b)	32. (d)	33. (c)	34. (d)	35. (d)
36. (b)	37. (b)	38. (b)	39. (d)	40. (d)	41. (c)	42. (d)
43. (c)	44. (a)	45. (c)	46. (d)	47. (b)	48. (d)	49. (a)
50. (c)	51. (c)	52. (b)	53. (c)	54. (c)	55. (c)	56. (c)
57. (b)	58. (d)	59. (c)	60. (b)	61. (a)	62. (b)	63. (c)
64. (b)	65. (b)	66. (d)	67. (c)	68. (c)	69. (d)	70. (d)
71. (d)	72. (b)	73. (c)	74. (d)	75. (b)	76. (d)	77. (c)
78. (c)	79. (c)	80. (d)	81. (c)	82. (b)	83. (d)	84. (d)
85. (d)	86. (c)	87. (d)	88. (d)	89. (c)	90. (a)	91. (c)
92. (d)	93. (b)	94. (b)	95. (b)	96. (b)	97. (b)	98. (a)
99. (a)	100. (c)	101. (a)	102. (c)	103. (c)	104. (c)	105. (b)
106. (c)	107. (b)	108. (c)	109. (a)	110. (d)	111. (c)	112. (b)
113. (c)	114. (b)	115. (c)	116. (d)	117. (b)	118. (d)	119. (b)
120. (a)	121. (b)	122. (d)	123. (a)	124. (b)	125. (b)	126. (c)
127. (b)	128. (b)	129. (b)	130. (b)	131. (d)	132. (c)	133. (b)
134. (a)	135. (b)	136. (a)	137. (a)	138. (c)	139. (d)	140. (b)
141. (b)	142. (a)	143. (a)	144. (d)	145. (a)	146. (b)	147. (d)
148. (d)	149. (b)	150. (a)	151. (d)	152. (b)	153. (c)	154. (d)
155. (b)	156. (c)	157. (c)	158. (d)	159. (d)	160. (c)	161. (d)

How much money did the man leave behind altogether?

(a) ₹40000   (b) ₹140000

(c) ₹10000   (d) ₹70000

19. A woman introduces a man as the son of the brother of her mother. How is the man related to the woman?

(a) Son   (b) Uncle

(c) Cousin   (d) Grandson

20. Internal cues of non-verbal behaviour in the class-room help diagnose:

(a) Student movement

(b) Spatial proximation

(c) Mass beliefs

(d) Inter-personal dynamics

21. When the conclusion of an argument follows from its premises necessarily, the argument is called:

(a) Deductive argument

(b) Analogical argument

(c) Inductive argument

(d) Circular argument

22. 'Every law is an evil, for every law is an infraction of liberty'.
The above is:

(a) An explanation of facts

(b) A proposition of facts

(c) An argument

(d) A justification of beliefs

23. In pre-learning preparation, an important stage of communication is:

(a) Ignoring semantic noise

(b) Information acquisition and its processing

(c) Conditioned feedback

(d) Iconisation of encoder

24. To communicate effectively with students, teachers should use:

(i) Affinity -seeking strategies

(ii) Immediacy behaviours

(iii) Humour

(iv) Collaborative filters

Choose most appropriate code:

(a) (i), (iii), and (iv)   (b) Only (i) and (iv)

(c) Only (i) and (ii)   (d) (i), (ii), and (iii)

25. Given below are an Assertion (A) and a Reason (R). Consider them and select the correct code given below:

Assertion (A): Honesty is a great virtue.

Reason (R): Honesty does not harm anybody.

(a) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(b) Both (A) and (R) are true and (R) is the correct explanation of (A).

(c) (A) is true and (R) is false.

(d) (R) is true and (A) is false.

26. Given below are two premises (I) and (II). Four conclusions are drawn from them taking singly or together).
Premises:

(I) Some prisoners are dacoits.

(II) Some dacoits are murderers.

Conclusions:

(i) Some prisoners are murderers.

(ii) All prisoners are murderers.

(iii) Some dacoits are prisoners.

(iv) Some murderers are dacoits.

Select the code that states the validly drawn conclusions:

(a) Only (i) and (iv)   (b) Only (iii) and (iv)

(c) Only (ii) and (iv)   (d) Only (ii) and (iii)

27. If $R + \dfrac{1}{S} = 1$ and $S + \dfrac{1}{T} = 1$, then $R \times S \times T =$ _____

(a) −1   (b) 2

(c) 1   (d) −2

28. Among the following propositions (i, ii, iii and iv) two are related in such a way that both of them together cannot be false although they may both be true. Select the code that states those two propositions.

(i) All students are intelligent.

(ii) Some students are intelligent.

(iii) No students are intelligent.

(iv) Some students are not intelligent.

Codes:

(a) (ii) and (iii)   (b) (ii) and (iv)

(c) (i) and (ii)   (d) (iii) and (iv)

29. In the sequence of numbers 1, 2, 6, 33, 49, 174, 210, x, . . . , the term x is:

(a) 553   (b) 444

(c) 259   (d) 510

30. If 7, 13, 2, 14, 6 is to flame, then 3, 13, 16, 2, 21

(a) Voice   (b) Bloat

(c) Blade   (d) Blown

Comprehension

The following table indicates the percentage of students enrolled in various faculties of a University. The total number of students in the University is 12000, out of which 52% are males and remaining are females.

Based on the table, answer the questions that follow Q31–Q35:

Percentage of students faculty wise	
Name of the Faculty	**Percentage (%) of the students**
Science	17%
Education	30%
Engineering	8%
Performing Arts	26%
Social Sciences	19%

31. Supposing, the number available in the faculty of Engineering doubles keeping the total number in the University to be the same by reducing the student numbers in faculty of Performing Arts and faculty of Education equally, the number of students available in the Faculty of Education will be:

(a) 2960   (b) 3120

(c) 2680   (d) 3125

32. If half of the students from the faculty of Education and all of the students from the faculty of Social Sciences are females, then the number of female students in the three remaining faculties altogether will be:

(a) 840   (b) 1680

(c) 1240   (d) 960

33. The number of male students exceeding female students is:

(a) 1680   (b) 800

(c) 1400   (d) 480

34. The difference in the number of students enrolled in the faculty of Science as compared to the number of students enrolled in the faculty of Engineering, is:

(a) 1180   (b) 960

(c) 2040   (d) 1080

35. Approximately, how many female students are there in the faculty of Performing Arts if the proportion of males and females is the same for this faculty as for the whole University?

(a) 1498   (b) 1610

(c) 2560   (d) 2678

36. Which piece of the computer hardware is known as the "brain" of the computer and is responsible for processing instructions?

(a) Motherboard   (b) RAM

(c) CPU   (d) ROM

37. In the following two sets, (Set-I) mentions an apex level institution in India while (Set-II) indicates their formal concerns. Match the two sets and give your answer from the code.

Set-I (Apex level Institution)	Set-II (Formal concerns)
(A) University Grants Commission	(i) Adjudication of legal matters in education
(B) All India Council of Technical Education	(ii) Coordination, recognition and quality issues related to teacher education institutions
(C) National Council of Technical Education	(iii) Coordination and quality maintenance in institutions of higher education

	Set-I	Set-II
	(Apex level Institution)	**(Formal concerns)**
(D)	National Assessment and Accreditation Council	(iv) Recognition and quality issues in technical institutions
		(v) Evaluation of quality and determining grade of excellence

Codes:

	(A)	(B)	(C)	(D)
(a)	(iii)	(iv)	(ii)	(v)
(b)	(i)	(ii)	(iii)	(iv)
(c)	(v)	(iv)	(iii)	(ii)
(d)	(ii)	(iii)	(i)	(iv)

38. To improve access and quality in higher education, the Knowledge Commission recommendations include which of the following?
    (i) Use of ICT for production of knowledge
    (ii) Closure of non-performing Universities in the country
    (iii) Establishment of a network of institutions of higher learning
    (iv) Increase in the enrolment of students in the institutions of higher learning
    (a) Only (i), (iii), and (iv)
    (b) Only (i), (ii), and (iii)
    (c) (i), (ii), (iii), and (iv)
    (d) Only (i), (ii), and (iv)

39. For pursuing a Ph.D. programme through our University system, what has become a mandatory provision now?
    (a) Guidance form a supervisor outside the University
    (b) Coursework
    (c) Enrolment for Ph.D.
    (d) Compulsory attendance for three years

40. Which of the following methods would be most appropriate in reducing acid rain and acid deposition problems?
    (a) Reducing the use of fossil fuels
    (b) Increasing the height of smokestacks

(c) Promotion of acid-resistant crops
(d) Adding lime to the acidic lakes

41. In the institutions of higher education in India which of the following has the formal authority to approve the courses and programmes of studies?
    (a) Academic Council
    (b) The University Court / Senate
    (c) Departmental Council
    (d) Board of Studies

42. Human populations have historically settled in flood plains due to which of the following reasons?
    (i) Flood plains are close to rivers for transportation.
    (ii) The soils in the flood plains are usually fertile.
    (iii) The terrain in flood plains is found as flat.

    Select the correct answer from the code given below:
    (a) Only (i) and (ii)   (b) Only (i)
    (c) Only (ii) and (iii)   (d) (i), (ii), and (iii)

43. **Assertion (A):** Mapping of landslide prone areas and construction of houses, felling of trees and grazing in landslide prone areas should be prohibited

    Reason (R): Afforestation in the vulnerable areas is an effective way of durable landslides control.

    Choose the **correct** code:
    (a) Both (A) and (R) are correct and (R) is the correct explanation of (A).
    (b) Both (A) and (R) are correct, but (R) is not the correct explanation of (A).
    (c) (A) is false and (R) is true.
    (d) (A) is true and (R) is false.

44. Which option would complete the following sentences about digital communication system by using the words - short/ long, low/ high?

    Bluetooth is a _____ range wireless technology. It is used to connect devices together for data transfer. Bluetooth is a _____ cost means of data transfer.
    (a) Long, low   (b) Short, high
    (c) Long, high   (d) Short, low

45. Which one of the following pairs **least** matches in respect of computers?

 (a) WWW : World Wide Web
 (b) 1 Megabyte : $(1024) \times (1024) \times (8)$ Bits
 (c) PDF : Portable Document Format
 (d) HTTPS : Hypertext Transfer Protocol Standard

46. Read the following spreadsheet (MS-EXCEL):

 EXCEL spreadsheet

	A	B	C
1	10	16	
2	20		
3	8		
4	12		
5	0		

 The equation in cell B2 is = A2 + B1

 The equation is then copied and pasted to cells B3, B4 and B5. What should be the value in B3?

 (a) 44 (b) 24
 (c) 56 (d) 36

47. Computer data files that are included with an email message are often referred to as:

 (a) Spam mails (b) Carbon copy
 (c) Cookies (d) Attachments

48. Below are given two sets- (Set-I) provides stages of value development while (Set-II) indicates their critical features from the point of view of value education. Match the two sets and choose your answer from the code:

Set-I (Stages of value development)	Set-II (Critical features in terms of value education)
(A) Value collection	(i) Providing opportunity for imitation
(B) Value assessment	(ii) Characterization through integration of values
(C) Value clarification	(iii) Providing hints for inner evaluation
(D) Value consolidation	(iv) Exposure to other values
	(v) Discussion and Debates

Codes:

	(A)	(B)	(C)	(D)
(a)	(iii)	(i)	(ii)	(v)
(b)	(i)	(iii)	(iv)	(ii)
(c)	(i)	(ii)	(iii)	(iv)
(d)	(ii)	(iii)	(i)	(v)

49. Which of the following best describes the mechanism of the greenhouse effect in earth's Atmosphere?

 (a) Ultraviolet radiation from the sun is absorbed by Ozone layer in the stratosphere.
 (b) Infrared radiation from earth's surface is absorbed by gases in the atmosphere.
 (c) Gamma radiation from the sun is absorbed at ground level by dust particles in the atmosphere.
 (d) Cosmic radiation from the space is absorbed by gases in the atmosphere.

50. The two major processes involved in the carbon cycle are:

 (a) Evaporation and transpiration
 (b) Photosynthesis and respiration
 (c) Fixation and denitrification
 (d) Deposition and erosion

ANSWERS TO SOLVED PAPER 5 – DECEMBER 2018

1. (b)	2. (a)	3. (c)	4. (b)	5. (d)	6. (b)	7. (a)	8. (d)	9. (a)	10. (b)
11. (c)	12. (b)	13. (b)	14. (a)	15. (a)	16. (a)	17. (a)	18. (b)	19. (c)	20. (d)
21. (a)	22. (c)	23. (b)	24. (d)	25. (a)	26. (b)	27. (a)	28. (b)	29. (a)	30. (b)
31. (b)	32. (b)	33. (d)	34. (d)	35. (a)	36. (c)	37. (a)	38. (a)	39. (b)	40. (a)
41. (a)	42. (d)	43. (a)	44. (d)	45. (d)	46. (b)	47. (d)	48. (b)	49. (b)	50. (b)