INSTRUCTIONAL OBJECTIVES AND PLANNING

1. List the various aspects involved in teaching

1. Establishing the need for learning the content, through suitable motivational strategies.
2. Providing learning experiences related to the content.
3. Structuring the content as per by the instructional objectives.
4. Understanding the psychological characteristics of learners.
5. Identifying the learning abilities and the individual differences of the learners.
6. Preparing Teacher Support Materials (TSM) for effective Delivery of content with suitable materials and media.
7. Preparing Student Support Materials (SSM) for facilitating learners for learning and retention, involving suitable materials and media.
8. Developing suitable evaluation tools to assess the learning by the learners pertaining to the instructional objectives.
9. Identifying content related assignments for learners and suitable follow up activities.

2. State the meaning of learning.

Learning is a relatively permanent change in behavior resulting due to reinforced practice.

3. Distinguish between teaching and instruction.

Teaching is a sub-category of instruction that involves live human interaction between the teacher and one or more students.

In other modes of instruction except teaching there need not be live interaction between the teacher and the students.

4. What is interaction?

Interaction is two-way communication between the teacher and Students. This involves active responding, practicing, confirmation and feedback.
5. What is the meaning of goal?

Goals = Milestones that you can achieve.

Goals explain the reasoning behind what you will teach in a session. An instructional goal is a declaration about what the teacher will. Goals are statements of educational intention. Goals are accomplishments (things you wish to complete).

6. What is the meaning of Aim?

Aims = desires (things you'd like to achieve)

Aim is your ability to not be side tracked while reaching for your goals. Aims are general statements that provide direction or intent to educational action.

7. What is the meaning of objective?

Objectives are potential goals. Instructional objectives are statements that express the expected learning outcomes of the learners at the end of instruction.

8. List some of the modes of instruction

- Teaching
- Audio tutorial
- Video lessons
- Computer assisted instruction
- e-Learning

9. List the need for specifying objective.

Objective should be written for each (subject) course of the curriculum because they

1. Specify what the students should learn to do and thus serve on sign posts to the students.

2. Provide direction to the teacher in the selection of the most effective Instructional methods and instructional resources (materials and media) to be used during instruction.

3. Provide guidance to the question paper setter (examiner) for evaluating students’ achievement.
10. What is meant by entry behaviour?

Entry behaviour is the level of students’ knowledge and skills prior to instruction.

11. What is meant by Terminal behaviour?

Terminal behaviour is the level of students’ knowledge and skills after Instruction.

12. State the significance of instructional process?

Instructional process involves any activity on the part of both teacher and learners that leads to change in behaviour of the learner. Instructional process vary with instructional objectives.

13. What is evaluation?

From an instructional stand point evaluation is a systematic process of determining the extent to which instructional objectives are achieved by the students.

Evaluation includes assessing both quantitative and qualitative aspects of student’s terminal behaviour.

14. State the significance of cognitive domain.

When learning takes place the first activity is the mental process acquiring knowledge, trying to understand, analyse, synthesize and link up the new information with something already known. This thought process comes under the cognitive domain.

15. State the significance of affective domain.

The knowledge acquired through cognition may begin to produce change in the interest, altitudes and feelings of the individual learner. These aspects come under affective domain.

16. State the significance of psychomotor domain.

The knowledge acquired through cognition producing changes in the altitudes and feelings result in changes in physical activities with proper coordination of the limbs. These aspects come under psychomotor domain.
17. State the hierarchy of the three domains of learning.

1. Cognitive
2. Affective
3. Psychomotor

18. List the categories in the cognitive domain with meaning for each in hierarchy.

Knowledge – remembering previously learned material
Comprehension – grasping the meaning of the material
Application – ability to use learned material in new situations
Analyse – breaking down material into its parts
Synthesis – putting parts into a whole.
Evaluation – judging the value of a thing for a given purpose using definite criteria.

19. State the three reasons for stating objectives.

1. Give direction to teachers in the selection of instructional methods and instructional resources.
2. Inform students why any content is to be learnt and to what extent.
3. Provide scope for the question paper setter in the construction of tools for evaluation of students achievement.

20. What are the two types of objectives?

1. General objective.
2. Specific objective.

21. Explain the significance of general objective

These are very general statements, which describe in implicit terms the overall aims of the total educational process.
General Objectives are summaries of the learning outcomes of teaching - learning process and express the "generalized" behaviour expected to the student. General Objectives are used by curriculum planners to indicate very broadly what the programme intends to achieve.

General Objectives are not explicit. It is stated in broad terms to encompass a class or domain of student performance. It is the job of the teacher to convert these General Educational Objectives into Specific Instructional Objectives, which will be more meaningful to him / her and help him / her to plan the teaching - learning strategy.

22. List the three functions of General objectives.

General Objectives serve the following important functions,

1. Describe the expected terminal behaviour of the learner in broad terms.  
   Example: to understand, to apply, to analyze, to perform, to use.

2. Describe learners terminal attitudes  
   Example: to appreciate, to value, to volunteer

3. Form a starting point for writing the Specific Objectives. This is a General Objective can be broken down readily into many Specific Objectives.

23. Define specific objectives.

Statement expressed in behavioural terms that identify the end product of instruction in terms of observable and measurable performance of students are specific objectives.

24. State the five functions of specific objectives.

Examples of Specific Objectives:

On completion of the study the student will be able:

1) To convert a given binary number into its equivalent decimal number.  
2) To write a machine level programming language to add two 8-bit numbers using 8085 microprocessor instruction set.  
3) To draw the diagram of register set for an 8085 microprocessor.  
4) To name the two protocols that are used for Internet Communication.  
5) To list any four browsers that is used in Internet communication.  
6) To define system software.
25. Write the six steps for writing general objectives.

**Step 1:** Try to begin each General Objective with a Verb (e.g. Appreciate, Know, Understand etc., You can preface your list of General Objectives with a statement such as, "On the completion of the study, the student will be able to .....................".

**Step 2:** State each objective as learner behaviour or learner performance (not teacher intention or performance).

**Step 3:** State each objective as learning outcome, or a learning product rather than in terms of the teaching process.

**Step 4:** State each objective so that it broadly identifies expected or desired Terminal Behaviour.

**Step 5:** State each objective at a level of General learning outcomes later to be further broken down into specific student behaviour.

**Step 6:** State as many objectives as are necessary to cover all the content/units prescribed in the curriculum of the course.

26. Write the seven step for writing specific objectives.

**Step 1:** Consider each General Objective separately, for which you have to derive the Specific Objectives.

**Step 2:** List below the General Objective, the Specific Objectives which break down the General objective into detailed learning outcomes. Each Specific Objective describes the terminal performance - the final behaviour – which students are to demonstrate when they have achieved the objective.

**Step 3:** Begin each Specific Objective with a verb specifies student performance, or behaviour, that is an action which is usually measurable and certainly observable.

**Step 4:** Make sure that each Specific Objective is relevant to the General Objective from which it is derived.

**Step 5:** Refine the original General Objective(s) if necessary, having defined the Specific Objectives.

**Step 6:** Check your Specific Objectives to ensure that duplication has been avoided.

**Step 7:** Sequence your Specific Objectives.
27. Explain the five rules for stating specific objectives on per gronlund.

Gronlund has specified five rules for stating Specific Objectives. These rules are illustrated in this section:

Rule 1: Instructional Objectives should be stated in terms of student's performance and not teacher's performance.

The Objective should specify what the student will be able to do at the end of the lesson and not what the teacher had intended to do.

Rule 2: The mere description of subject matter should be avoided.

An Objective should specify both the kind of behaviour expected and the subject or context to which that behaviour applies.

Rule 3: Use action verbs.

Use verbs that refer to any observable activity displayed by a learner.

Rule 4: State in terms of learning outcomes instead of the learning process.

Describe in detail the final outcome of learning (End product) and not the process of learning itself.

Rule 5: An Objective should not consist of more than one learning outcome.

28. Name the two methods of stating objectives.

1. Gronlund method.

2. Mager’s method.

29. State the three criteria to be followed for stating specific objectives using Mager’s method.

1. Specific terminal performance of the student.
2. Condition under which the performance is expected to occur.
30. Represent diagrammatically the Gronlund’n model and Mager’s model.

![Diagram of Mager's method]

![Diagram of Gronlund's method]

31. State the guidelines given by Gronlund in writing general specific objectives.

1. By following the six steps, first write the general objectives.

2. Clarify each general objective by listing sample of specific behaviours which are put together accepted as evidence of attainment of general objective.

32. Give an example of General and Specific objectives stated using Gronlund’s method.

**Examples of objectives stated using Gronlund’s method**

**On completion of the unit the students will be able to**

**GENERAL OBJECTIVE:**

1.0 Comprehend the Principle, Construction and Performance of a D.C. Generator.
SPECIFIC OBJECTIVES:

1.1 Explain with a diagram the working of a simple loop generator.
1.2 Explain with a diagram working principle of a D.C. Generator.
1.3 Explain the construction of a D.C. machine with suitable diagrams.
1.4 Classify D.C. Generators based on excitation with suitable diagrams.
1.5 State the relation between current and voltages in a D.C. Generator.
1.6 Derive the emf equation of a D.C. Generator.
1.7 Explain with suitable diagrams simple Lap and Wave winding.
1.8 List the causes and remedies of non-building up of emf in a self excited D.C. Generator.
1.9 Define the terms: Critical field resistance and critical speed.
1.10 Explain with suitable diagram, armature reaction in D.C. Generators.
1.11 State the methods of minimizing armature reaction effects.
1.12 Define commutation in a D.C. machine.
1.13 Draw the power flow diagram of a D.C. Generator.
1.14 Solve numerical problems on efficiency of D.C. Generators.
1.15 List the applications of D.C. Generators.

33. Give an example of specific objective stated using mager’s method.

Given the file name the students should be able to

Given the file name the student should be able to create a new folder, locate and open the given file and transfer it to the newly created folder in windows operating system environment within five minutes correctly.

34. Define planning for instruction.

It is predetermining the sequence of the teacher and student activities in a course for effective learning, which happens with the careful thinking and meticulous preparation of the teacher prior to instruction.

35. Name the five components of the Basic Teaching model.

1. Instructional Objectives
2. Entry Behaviour
3. Instructional procedures
4. Performance Assessment
5. Feedback
36. State the eight reasons that establish the need for planning.

The following are the reasons that necessitate planning for teaching:

1. To ensure the right allocation of teaching time to each topic and to avoid running out of material.
2. To prevent unnecessary overlapping of courses, lessons and repetitions for information.
3. To teach the topics in a logical sequence.
4. To select the suitable instructional methods and instructional resources (materials and media) for the students of a particular class.
5. To budget for the instructional resources (materials and media) required and to procure/prepare them.
6. To revise the instructional resources (materials and media) in the light of the feedback obtained during the previous year/course.
7. To provide a variety of activities (learning experiences for the students).
8. To enhance teacher's self confidence in his/her ability to teach in an interesting and effective way by designing a number of tactical alternatives.

37. List the five characteristic of good planning.

- Good Planning will take into account the abilities, needs and interests of students.
- Good Planning will be flexible. In the light of the experience of the teacher with his students in instruction the teacher should have a flexible attitude. Necessary extension, revision and reorganization of plans on the part of the teacher are required to allow for last minute changes and emergencies.
- Good planning will be such that a substitute teacher of equal ability could understand and continue using existing plan.
- Good planning will outline the instructional strategy (methods and techniques) to be used in the teaching-learning situation.
- Good planning will constantly show an awareness of stated objectives of the programme and have some built-in-method of evaluation.

38. What are the two stages of planning?

1. Macro planning
2. Micro planning
39. State the two outcomes of macro planning.

1. Course plan
2. Unit plan

40. What is a course plan?

It is the overall plan for teaching the various units of the syllabus of a course. The main emphasis while preparing a course plan is on the allocation of time for teaching the various units of the syllabus of a course.

Course plan has to be prepared first, while planning for teaching.

41. What is an Unit Plan?

Unit Plan provides the overall strategy in terms of identifying the methods of teaching the specific topic and the resource required.

42. State the significance of micro planning.

Micro planning deals with the details of individual lesson or periods of instruction and the preparation of instructional resources.

43. What is an instructional strategy?

Instructional strategy is a mix of methods, media, techniques and approaches with built-in alternatives in order that the achievement of objectives would certainly happen.

44. Explain the importance of lesson plan.

Lesson plan is the blueprint of a period of instruction.

It is the activities in which the teacher and the students will engage in at different phases of a lesson.

It list the resources required for presentation of the contents of the lesson.

It is a functional document, which shows how the instructional time available is budgeted to various activities of the teacher and the taught.

While planning the lesson the teacher attempts to apply the principles of learning in designing the instruction.

Lesson plan indicates the strategies the teacher can follow in the lesson proceeds.
45. **Distinguish between Lecture and Lesson**

Lecture is a presentation of lesson possibly using straight speech and visual or other aids with little student participation.

Lesson refers to the quantum of content, abilities and skills imparted during a single period of instruction where the duration of single period may range from one to three hours.

46. **Tabulate the difference between Lesson and Lecture.**

The differences between lecture and lesson are listed in the Table below.

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Lesson</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of presentation</td>
<td>Highly structured presentation</td>
<td>Unstructured presentation</td>
</tr>
<tr>
<td>Size of the audience</td>
<td>Small (Not more than 60)</td>
<td>Large</td>
</tr>
<tr>
<td>Type of Communication</td>
<td>Dialogue</td>
<td>Mostly monologue</td>
</tr>
<tr>
<td>Scope for Interaction</td>
<td>Facilitates interaction</td>
<td>Minimum</td>
</tr>
<tr>
<td></td>
<td>- between the teacher and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the learner and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- among learners</td>
<td></td>
</tr>
</tbody>
</table>

47. **List the nine events of instruction.**

- Gaining attention
- Informing the learner of the objective
- Stimulating recall of prerequisite learning
- Presenting the stimulus material
- Providing learning guidance
- Eliciting performance
- Providing feedback about performance correctness
- Assessing the performance
- Enhancing retention and transfer
48. Define Motivation.

Motivation is defined as the process by which individuals are impelled to seek a goal.

49. State the significance of Motivation.

- The concept of Motivation explains why people behave as they do.

- It refers to the factors that increase and/or decrease the vigour of an activity.

- It is the process of arousing action, sustaining activities in progress, regulating and directing pattern of activity.

- It is the key for learning.

50. State the techniques for motivating students.

1. Make objectives of the topic unambiguous and very clear to the students.
2. Establish the need for learning the topic by highlighting its usefulness. A topic may be useful,
   (i) For doing the job.

   (ii) For understanding other topics in the same course.

   (iii) For understanding other courses in the programme.

3. Students need to know the progress they have made. This can be expected to arouse their curiosity, interest and enthusiasm for further learning.
4. Make provisions for reward in order to satisfy the student's need for recognition. Punishment, even oral reprimand, must be avoided to the extent possible.
5. Create competitive situations in the academic work for students in the areas of project work, assignments etc.
7. Use teaching learning aids.
8. Use effective communication.
9. Do not curb the initiative and enthusiasm of learners.
10. Create congenial relationships.
51. Tabulate the activities of the teacher and students for different methods of teaching.

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Teacher Activity</th>
<th>Student Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Describe or Explains or Illustrates (with or without aids)</td>
<td>Listens</td>
</tr>
<tr>
<td>Drawing Practice</td>
<td>Draws a diagram on the chalkboard</td>
<td>Looks at the diagram observes the method of drawing and practices</td>
</tr>
<tr>
<td>Questioning</td>
<td>Asks questions and provides feedback</td>
<td>Answers questions</td>
</tr>
<tr>
<td>Tutorial</td>
<td>Guides the students</td>
<td>Solves problems</td>
</tr>
<tr>
<td>Discussion</td>
<td>Leads discussion</td>
<td>Participates in discussions</td>
</tr>
<tr>
<td>Demonstration</td>
<td>Demonstrates</td>
<td>Observes</td>
</tr>
<tr>
<td>Seminar</td>
<td>Leads</td>
<td>Participates in seminar</td>
</tr>
<tr>
<td>Laboratory work / workshop practice</td>
<td>Guides</td>
<td>Performs the experiments</td>
</tr>
</tbody>
</table>

52. Define an unit of instruction.

An unit of instruction is a well-defined portion of syllabus, centering around a cluster of related topics or purposes.
53. Give an example of a course plan.

![Course Plan Example](image)

54. List the four steps involved in preparing a course plan.

**Steps involved in preparing a Course Plan**

**Step 1:** Identify Units of instruction of a given syllabus

**Step 2:** Arrange the Units of instruction in a logical sequence.

**Step 3:** Estimate the time required for teaching each unit.

**Step 4:** Providing time for conducting tests and revision classes.

55. Give an example of an unit plan.

![Unit Plan Example](image)
56. List the four components of an unit plan.

1. Name of the unit for which the plan is made can be written above the tabular column in the space provided.

2. A unit of instruction normally will have only one or two General Educational objectives. Therefore, they can be written above the tabular column in the space provided.

3. In the activity column of the format, the instructional method to be adopted for each topic along with the name of the topic has to be mentioned. Revision and test for a particular unit should also be incorporated as an activity.

4. Time required for each activity pertaining to the topics of the unit has to specified in the third column and Grand total of time has to be calculated.

57. List the two types of Lesson plan.

1. Cognitive lesson plan

2. Skill lesson plan

58. Define Cognitive lesson.

Cognitive lesson involves the teaching of information, concepts, principles and problem solving.

59. List the sequence of the four phases of a cognitive lesson.

1. Introduction or Preparation

2. Development or Presentation

3. Consolidation or Recapitulation

4. Conclusion or Evaluation & Follow up

60. What is a skill lesson?

Skill lesson involves the teaching of psychomotor skills like handling machinery, apparatus, equipment & chemicals, reading meters, operating a lathe, working with computers etc.
61. List the sequence of the four phases of a skill lesson.

1. Introduction
2. Development
3. Evaluation
4. Conclusion

62. Given an example of a cognitive lesson plan.

1. **Programme** : Diploma in Electrical Engineering (III Semester)
2. **Course** : Electrical Machines – I
3. **Lesson Number** : 1
4. **Lesson Title** : Magnetic Parameters
5. **Date & Time** : 25.06.2007, 09.00 A.M. to 10.00 A.M. (60 min)
6. **Entering Behavior** : Knowledge of Magnetic materials
7. **Specific Instructional Objectives** : At the end of the session the participants will be able to

   Distinguish between Magnetic Flux, Magnetic Field and Magnetic Path.
63. Give an example of a skill lesson plan.


2. Course : Programming in C++.

3. Lesson Number : Model lesson.

4. Lesson Title : Practice in writing a Programme for implementing a Binary tree and Sparse Matrices.

5. Date & Time : 3 hours.

6. Entering Behavior : Writing a Programme for implementing Binary tree and Sparse Matrices. (Syllabus extract)

7. Specific Instructional Objectives : Knowledge of concepts of Binary tree and Sparse Matrices which have been already taught to them in the theory class.