Section 'A'

1. Objective Type Questions

(i)   True

(ii)   False

(iii)   False

(iv)   False

(v)   True

(vi)   False

(vii)   True

(viii) True

(ix)   False

(x)   True

Section- 'B' Essay Type Questions

Q. 2. The answer should include introduction, meaning and concept of educational technology with definition and Significance of Educational Technology with description:

CONCEPT OF EDUCATIONAL TECHNOLOGY:

- Etymological derivation of the term Education and Technology.
- One definition of educational technology
   Educational technology means the systematic application of scientific knowledge about teaching and learning for effectiveness or improvement of teaching learning and training. It is neither confined to the use f audio-visual aids, software materials and hardware equipment. It covers all the aspects that happen during planning, implementation and evaluation.

SIGNIFICANCE OF EDUCATIONAL TECHNOLOGY:

1. helpful in analysis of teaching and learning
2. helpful in deciding educational goals or objectives
3. helpful in development of curriculum
4. development of teaching learning material
5. helpful in teacher training
6. helpful to make teaching learning interesting
7. development, selection and use of audio visual aids
8. helpful in use of mass media
9. helpful in providing feedback and control through evaluation
10. helpful in deciding selection of teaching learning strategies.

Q. 3. Answer should reflect introduction, description about micro teaching and flander's interaction analysis category system, and main features of both micro teaching and flander's interaction analysis category system reflecting improvement in teacher's communication.

INTRODUCTION: In a teacher training program or in service program in the shape of theory and practice is always aimed for bringing the needed modification and improvement in the existing teaching or teacher behavior of the concerned pre-service or in-service teacher. In the field of pedagogy and teacher education program a number of innovation and techniques have been introduced for modification and improvement of teacher's behavior and teacher's communication. These are especially concerned with the process of modifying the ways of interaction with the students and improving one's behavior as a teacher.

1. **MICRO TEACHING:** description about concept, definition, micro-teaching cycle, steps of micro teaching , advantages-

   Micro teaching represents an appropriate innovative technique for helping the pupil teacher's being trained in the colleges of education in their acquisition of the desired teaching skills. We can define micro teaching as a sort of specialized training technique that provides appropriate opportunities to the pupil teachers for the practice and development of some specific teaching skills by organizing teaching it its micro form- miniature in terms of class size, time duration and content to be covered. It is a device of imparting training to the inexperienced or experienced teachers for learning the art of teaching by practicing specific skills through a "scaled down teaching encounters", i.e. reducing the complexities of real normal teaching in terms of size of the class, time and content.

   The use of micro-teaching technique in reference to the teacher education program adopted in our country may prove advantageous on account of the specific features and characteristics inherent in this technique, such as, (i) non-dependence over the practicing schools and their students for the practice of skills, (ii) providing opportunity for the practice of one teaching skill at a time, (iii) reducing the complexities of the normal classroom teaching, (iv) providing appropriate opportunities for systematic observation of the teaching and immediate feedback to bring improvement in one's teaching skill, and (v) providing opportunity to the teacher trainees for the development of their teaching skills in the laboratory like controlled conditions. The micro-teaching procedure adopted for practicing teaching skills in our teacher

   MICRO TEACHING CYCLE: Include the Diagram showing micro-teaching cycle with total duration of 36 minutes.

2. **FLANDER'S INTERACTION ANALYSIS CATEGORY SYSTEM:-** Description about concept, definition, categories steps and observation/recording of classroom events, construction of interaction matrix, and interpretation of interaction matrix-

   Flander's system of interaction is known as the most popular technique used for the analysis of the teacher behavior and interaction going on in the classroom at a particular teaching-learning situation. It tries to categorize all the sets of possible behaviors while interacting with his students in ten categories divided into three major sections, namely: (i) teacher talk, (ii) student talk, (iii) silence or confusion. The application and utilization of Flander's interaction analysis mainly involves three major steps: (i) observation and recording of the classroom events, (ii) construction of the interaction matrix, and (iii) interpretation of the interaction matrix

   IMPROVEMENT IN TEACHER'S COMMUNICATION: Teacher behavior refers to the behavior or communication (verbal and non-verbal communication) maintained and demonstrated by a teacher at the time of carrying out his teaching activities in the classroom along with his students. The term modification and improvement of teaching or teacher's communication and behavior refers to the attempts adopted for bringing desirable improvement in the existing entry behavior of a teacher for helping him to attain the desired terminal behavior in order to exercise his professional duties as

effectively as possible. It can be properly modified through the adoption of a variety of techniques including micro-teaching, Flander's interaction analysis category system and etc.

Q. 4. The answer should reflect short notes on any two models:

(i) CAM-concept attainment model

(ii) ITM- inquiry training model

(iii) MLM- mastery learning model

1. CAM- CONCEPT ATTAINMENT MODEL:

Bruner's concept attainment model is quite helpful in the formation and attainment of the concepts for the students. For this purpose, weil and joyce have provided three specific formats : (i) reception model, (ii) selection model, (iii) unorganized material model. Where the reception model is said to work well with the attainment of the complex concepts, the attainment of the simpler concepts may be left on the application of the other formats.

2. ITM- INQUIRY TRAINING MODEL

Richard suchman's inquiry training model tries to provide essential training to the students in the method of the inquiry for investigating the causes of the occurrence of a phenomenon or happening of an event. For the purpose, a strange and challenging problem is put before the students and they are made to proceed to solve it by resorting to the method of inquiry, collect relevant data, and try to verify their hypotheses on the basis of the analysis of the data.

3. MLM- MASTERY LEARNING MODEL:

John B. Carol brought a fundamental change in thinking about the characteristics of instruction in 1963. He argued for the idea that student's aptitudes are reflective of an individuals learning rate. In this new paradigm, Caroll suggested that instruction should focus more on the time required for different students to learn the same material. He called the learning rate, LR, the degree of learning, which is demonstrated in the formula:

LR = f (time spent for learning/time needed to learn)

This describes that the learning rate is the function of the time a learner has to learn to the time he actually needs to learn a given situation of instruction. However, it was Benjamin Bloom (1968) who transformed this conceptual model into an effective working model now known as "Mastery Learning".

'Mastery Learning' is an instructional philosophy based on the belief that all students can learn if given the appropriate amount of time and the appropriate instructional opportunities. It is believed that students can achieve mastery when curricular standards are clearly articulated and defined, when assessment accurately measure the students' progress toward performance of the objective(s), and when instructional lessons are tightly aligned to the curriculum.

Premises of Mastery Learning:

1. All individuals can learn.
2. People learn in different ways and at different rates.

3. Under favorable learning conditions, the effects of individual difference approach a vanishing point.
4. Uncorrected learning errors are responsible for most learning difficulties.

Mastery learning is the organization of time and resources to ensure that students are able to master instructional objectives. There are many different instructional strategies (small group instruction, cooperative learning, use of differentiation activities, discovery learning, discussion groups etc.) that teachers use in the classroom that support mastery learning.

It would be better if you can highlight the eight steps of Mastery Learning.

Q.5. Answer should reflect introduction, names of the group instruction strategy and description about any two strategy.

INTRODUCTION: To attain the aims and objectives we try to plan and arrange the suitable learning experiences by constructing or developing an appropriate curriculum for the implementation of this curriculum. We try to think about the instruction strategy for providing the desired learning experiences to the students. These instruction strategy for teaching with regard to the teaching and learning of a particular subject or imparting the desired learning experiences to the students are determined after a careful analysis of the experiences gained over the years.

Main group of instructional strategy in educational technology are:

1. **Lecture strategy**
2. **Team teaching strategy**
3. **Discussion strategy**
4. **Seminar strategy**
5. **Tutorial strategy**
1. **LECTURE STRATEGY:** In lecture strategy a teacher tries to present a segment or unit of the desired content material of a subject to a group of learners through lecturing (verbal communication of ideas). It aims to attain the specific teaching-learning objectives related particularly to the cognitive and affective domains of the learner's behaviors. The lecture strategy, as an oldest traditional mode of teaching, may prove quite advantageous in so many ways for the present day classroom teaching-learning. The main criticism labeled against the use of it lies in its focusing understanding and reflective levels.
2. **TEAM TEACHING:** Team teaching as an innovation in the field of teaching and learning, aiming to improve its process and products by calling upon the joint cooperative efforts of a team of the personnel (teachers and others) by utilizing the resources available in a given teaching-learning situation, at the proper time and in a proper way.
3. **DISCUSSION STRATEGY**: The discussion strategy involves some sort of discussion, i.e. exchange of ideas between students and teachers or among a group of students resulting in some learning for the realization of the predetermined teaching learning objectives. It may prove quite helpful in a number of teaching-learning situations if handled properly in an able leadership.
4. **SEMINAR STRATEGY:** Seminar is an instructional strategy which involves paper reading followed by group discussion to clarify the complex aspects of theme. Seminar generates a situation for a group to have guided interaction among themselves on a theme which is generally presented to group by one or more members. Participants who present the theme should studied the theme thoroughly to make selection of relevant material. Collected material is presented in the form of paper. It is circulated among the participants in advance. It provides the structure of theme, to facilities its communication.

5. **TUTORIAL STRATEGY:** The tutorial strategy help in supplementing or enriching the traditional classroom instruction by calling up on a tutor to provide his personalized and individualized services to a student or a small group of students- tutees for their required betterment.

Q. 6 The answer should include brief introduction about ET cells, activities of various resource centers of ET centers like CIET, IGNOU, NIOS, EMRC & AVRC.

1. **CIET:** The answer should include –
Year of establishment, former name of CIET and its aim - to promote Educational Technology especially mass media single or in combinations (multimedia packages) and, to extend educational opportunities and improve quality of educational processes at the school level.

Activities of CIET:

➢ To design and produce media software materials viz., television/ radio (for both broadcast as well as non-broadcast use) film, graphics and other programs for strengthening the transaction of curricular and co-curricular activities at the school level.
➢ To create competencies in development and use of educational software materials through training in areas such as script development., media production, media communication, media research, technical operations, setting up studios, repair and maintenance of equipment.
➢ To develop plans for the use of Information and Communication Technologies in education.
➢ To train the faculty of IASE/CTE & DIETs in the use of Educational Technology in their teacher education programs.
➢ To undertake research, evaluation and monitoring of the systems, programs and materials with a view to improving the materials and increasing their effectiveness.
➢ To document and disseminate information, materials and media programs for better utilization.
➢ To advise and coordinate the academic and technical programs and activities of the State Institutes of Educational Technology (SIETs) set up by the MHRD in six states of India.

2. **IGNOU**: The answer should include –
➢ Establishment of IGNOU
➢ Focus is to increase the Gross Enrollment Ratio (GER) by offering high-quality teaching through the Open and Distance Learning (ODL) mode.
➢ Started with two academic programs in 1987, i.e., Diploma in Management and Diploma in Distance Education, with a strength of 4,528 students.
➢ At present over 4 million students in India and 36 other countries through 21 Schools of Studies and a network of 67 regional centers, around 3,000 learner support centers and 67 overseas centers.

Activities of IGNOU:

➢ To promote and dissemination of advance knowledge through sustainable Open and Distance learning system,

➢ To Strengthen the development of the National Resource Centre as a proactive role model for high-quality and learner-centric Open and Distance Learning system,
➢ Share professional capabilities and resources to improve standards of distance education in the country,

➢ Periodically assess and accredit institutions of Open and Distance Learning to promote centres of excellence in the country,

➢ Develop networks, using emerging technologies and methods,

➢ To meet the challenges of access and equity,

➢ Take education to the hitherto unreached and promote community participation for local development through life-coping skills,

➢ To provide specific need-based education and training opportunities for continuous professional development and skill up gradation to in-service professionals, and

➢ Strive towards continuous development of methods and strategies for research and development

3. **NIOS:** The answer should include –

➢ Formerly known as National Open School

➢ Autonomous organization under MHRD

➢ Established in 1989 in pursuance of NPE1986

➢ Largest Open Schooling System in the World

➢ More than 5,00,000 learners take admission every year

➢ 5000 study centers

➢ Imparts education through distance mode through various media

Activities of NIOS:

➢ To take steps for developing strategy plans for promoting and up scaling the Open Schooling program in India,

➢ To provide technical and financial support to State Governments for setting up and up scaling of State Open Schools (SOSs),

➢ To develop needed action plan for making education equitable and inclusive for the marginalized and disadvantaged groups like girl/women, minorities, differently- able (physically and mentally challenged) etc.,

➢ To offer courses of study in general, vocational and continuing education and life enrichment courses up to pre-degree level,

➢ To develop need based Curricula and Self Learning Materials with focus on skill development,

➢ To develop multi-media and multi-channel delivery modes for effective transaction of courseware,

➢ To provide effective student support services,

➢ To conduct examinations and issue certificates to successful learners,

➢ To partner with National Literacy Mission,

➢ To promote quality of learning in ODL through Monitoring, Supervision and Evaluation,

4. **SIET:** The answer should include –

➢ Established with the advent of INSAT and demand for educational media software

➢ Works at state level

➢ Initially six SIETs were started in Andhra Pradesh, Uttar Pradesh, Orissa, Gujarat, Bihar and Maharashtra and recent addition is Kerala.

➢ Financial assistance from Central government

Activities:

- Produce Educational Television and Radio Programs in regional language for school children in the age group of 5 to 14,
- Production of education media material for both TV and Radio and transmission through Doordarshan and All India Radio,
- Conduct of workshops and training programs for persons involved in the use of media material,
- Evaluation and Research on material produced by the Institute,
- Monitoring, Utilization of ETV and ER transmission,
- Conversion of Video programs into CDs and supply to schools,
- Lending Video and Audio Studios for commercial production for income generation,
- Production of video programs for SSA(School Education., Dept), MANA TV Channel and other Departments, for income generation,
- Production of audio programs for SSA for Classes I to VII both for Telugu and Urdu medium schools,

5. **AVRC:** The answer should include –

The full name of AVRC is Audio-visual resource centre. As early as in 1984 **University Grants Commission (UGC)**, New Delhi has launched Country Wide Class Room (CWCR) and production facilities at 6 Universities in India through establishing media centers in the name of Audio Visual Research Centers (AVRCs) (AVRCS) (later these centers have been renamed as **Educational Multimedia Research Centers (EMMRCS)**. This was mainly to use electronic media for the quality enrichment of higher education. UGC began its transmission of Country Wide Class Room (CWCR) program from 15th August 1984 through Doordarshan National network. Initially the co-ordination with these centers was done from UGC office with the support of a consultant. Subsequently, an Inter-University Centre named as 'Consortium for Educational Communication' (CEC) was set up in the year 1993 to co-ordinate with media centers (AVRCs and EMMRCs) and to make CWCR mission most effective and successful.

6. **EMRC:** The answer should include –
- Full name is Educational Multimedia Resource Centre
- Started by UGC in 22 Universities of India

Activities:

- To produce high quality audio-visual programs,
- Developing multimedia content,
- Producing educational documentaries,
- Produce lecture series and e-content modules on undergraduate program,
- Studying, promoting and experimenting with new techniques/technology that will increase the reach/effectiveness of educational communications,
- Preparing documentary films,
- Produce interactive multimedia learning materials,
- Providing training in audio/video/multimedia production,

Q.7. Answer should reflect meaning of programmed instruction, its two definitions given by any author, its main types with description.

MEANING: Programmed instruction has been defined as a method of individualized instructions in which the student is active, proceeds at his own pace and is provided with immediate knowledge of result. The physical presence of teacher is not essential in this strategy.

DEFINITION:

TYPES OF PROGRAMMED INSTRUCTION:

1. Linear Programmed Instruction
2. Branching Programmed Instruction
1. **LINEAR PROGRAMMED INSTRUCTION:** The application of operant conditioning model of teaching is known as 'linear programming' or 'Skinnerian programming' or 'Extrinsic programming' propounded by B. F. Skinner (1954). This programmed material is based on operant conditioning theory of learning where contingencies of reinforcement are properly arranged which shapes up the behavior of an organism in a desirable manner. A linear programming of instruction is one in which the learner is allowed to study only one frame at a time. A frame is the smallest bit of information that is supplied to a learner at a time. The frame is followed by a question. When learner gets feedback the confirmation of his answer, he is supplied the next frame. This process goes on till the last part of the subject-matters. Here learner goes ahead in a straight line fashion. Every learner is supplied the same series of tasks and each of them fulfils the task according to their individual rate of learning. The process may be graphically illustrated as-
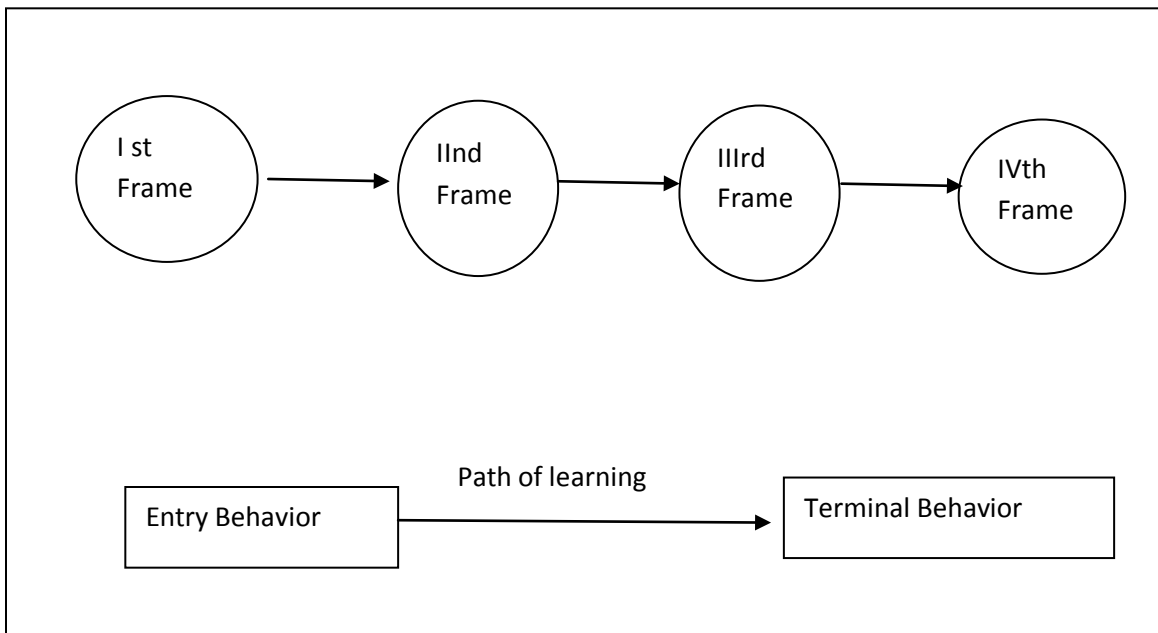
Principle of Linear Programming:

- Principle of small steps
- Principle of immediate confirmation
- Principle of active responding
- Principle of self-pacing
- Student-testing

Types of Frames:

- Introductory frames
- Teaching frames
- Practice frames
- Testing frames

Characteristics of Linear Programmed Instructions:

Limitations of Linear Programmed Instruction:

2. **BRANCHING PROGRAMMED INSTRUCTION:-**

This program was developed by Norman A. Crowder (1960). It consists of rather long frames that often appear as pages in an ordinary book form. The student reads the page or frame and then responds by collecting the correct alternative in a multiple choice item. The correct response directs the students to frame which confirms his response and introduces a segment of new materials. This system takes into account the individual differences and provides the necessary remedial material according to the students needs. It has been developed by keeping the individual needs, interests, and attitudes of learners. The process may be graphically illustrated as-

5 W.P.		2 W.P.		8 W.P.
1 H.P.	→	4 H.P.	→	7 H.P.
3 W.P.		6.W.P		11 W.P.
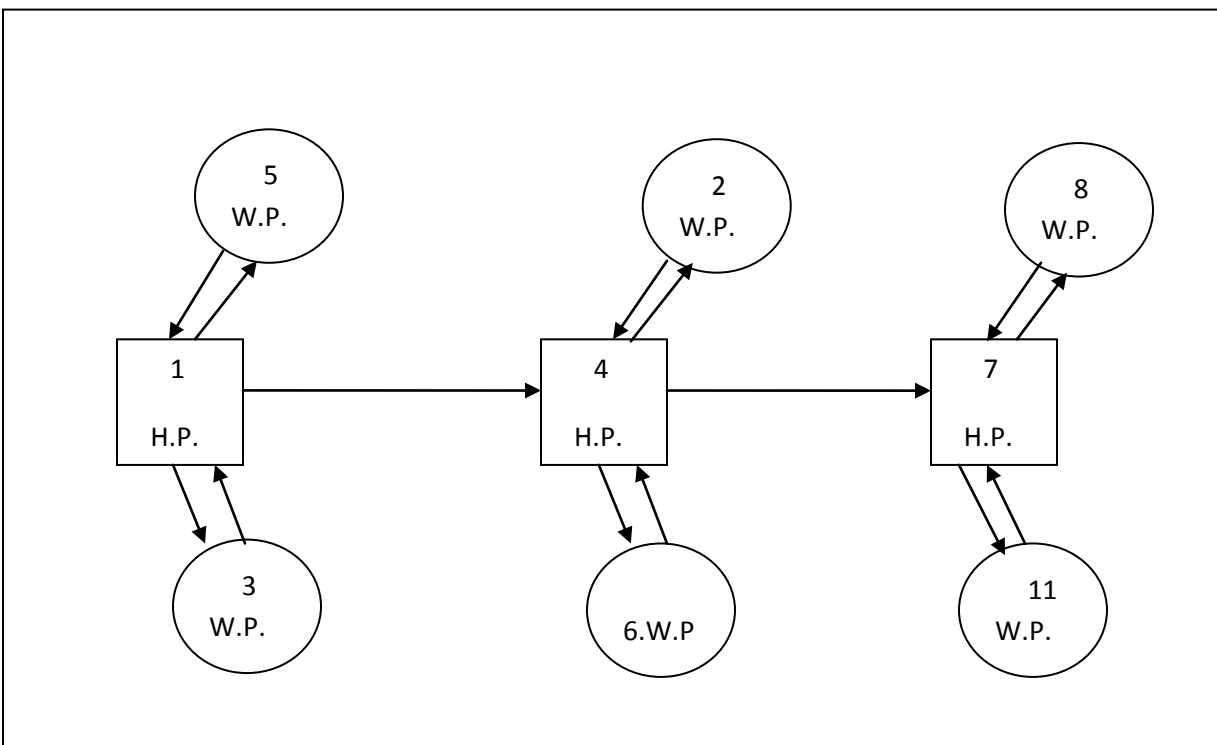
Index: ☐   Home Page   ○   Wrong Page

Assumptions of Branching Programmed Instruction:

Principles of Branching Programmed Instruction:

- Principle of Exposition
- Principle of Diagnosis
- Principle of Remediation

Types of Frames or Pages:

- Home Page
- Wrong Page

Characteristics of Branching Programmed Instruction:

Limitations of Branching Programmed Instruction: