NTA UGC NET

GENERAL PAPER 1

SOLVED SAMPLE PAPER
(English Medium)

* DETAILED SOLUTIONS
* NEW SYLLABUS
* NEW PATTERN

UGC NET - PAPER - I

MOCK TEST PAPER

- **PAPER - I**   *This paper contains 50 objective type questions.*

    Each question carries 2 marks.

    Attempt all the questions.

- *Pattern of questions*   :   *MCQs*
- *Total marks (PAPER I)*   :   *100*
- *Duration of test*   :   *Paper I - 1 Hour*

PAPER-I

1. Which of the following set of statements best describes the nature and objectives of teaching ? Indicate your answer by selecting from the code.

    (a) Teaching and learning are integrally related.

    (b) There is no difference between teaching and training.

    (c) Concern of all teaching is to ensure some kind of transformation in students.

    (d) All good teaching is formal in nature.

    (e) A teacher is a senior person.

    (f) Teaching is a social act whereas learning is a personal act.

    Code :

    (1) (a), (b) and (d)   (2) (b), (c) and (e)

    (3) (a), (c) and (f)   (4) (d), (e) and (f)

2. Consider the following assertion (A) and reason (R) and select the correct code given below :

    (A) Memory level of teaching is the first and thoughtless level of teaching

    (R) Teaching at memory level is considered to be the highest level of teaching.

    (1) Both (A) and (R) are true   (2) Both (A) and (R) are false

    (3) (A) is true but (R) is false.   (4) (A) is false but (R) is true.

3. There are two sets given below. Set - I specifies the types of research, while Set - II indicates their characteristics. Match the two and give your answer by selecting the appropriate code.

Set - I	Set - II
(Research types)	**(Characteristics)**
(a) Fundamental research	(i) Finding out the extent of perceived impact of an intervention
(b) Applied research theory	(ii) Developing an effective explanation through building
(c) Action research	(iii) Improving an existing situation through use of Interventions
(d) Evaluative research	(iv) Exploring the possibility of a theory for use in various situations
	(v) Enriching technological resources

Code :

(a) (b) (c) (d)

(1) a-(ii) b-(iv) c-(iii) d-(i)   (2) a-(v) b-(iv) c-(iii) d-(ii)

(3) a-(i) b-(ii) c-(iii) d-(iv)   (4) a-(ii) b-(iii) c-(iv) d-(v)

4. A researcher attempts to evaluate the effect of method of feeding on anxiety - proneness of children. Which method of research would be appropriate for this ?

(1) Experimental method   (2) Ex-post-facto method

(3) Survey method   (4) Case study method

5. Which of the following is the highest advisory body to advise the Union and State Governments in the field of education ?

(1) NCERT   (2) UGC   (3) CABE   (4) CBSE

6. The core objectives of education as per New National Policy on Education , 2016 are

(1) building values, awareness, knowledge and skills.

(2) building values, awareness and knowledge

(3) awareness, knowledge and skills

(4) building values, knowledge and skills

7. **Assertion (A):** Global warming is the increase in Earth's near-surface air and ocean temperatures.

   Reason (R): The greenhouse effect is when water and carbon dioxide absorb outgoing infrared radiation, increasing the planet's temperature

   Choose the correct code:

   (1) Both (A) and (R) are correct   (2) Both (A) and (R) are incorrect,

   (3) (A) is true and (R) is true   (4) (A) is false and (R) is true

8. The next term in the series

   -1, 5, 15, 29, ? , ...is :

   (1) 36   (2) 47   (3) 59   (4) 63

9. In certain code, "COVALENT" is coded as BWPDUOFM. The code of "ELEPHANT" will be :

   (1) QMUBIADH   (2) QFMFUOBI

   (3) EPHNTEAS   (4) MFUIQRTW

10. Ajay is a friend of Rakesh. Pointing to an old man Ajay asked Rakesh who is he ? Rakesh said "His son is my son's uncle". The old man is related to Rakesh as :

    (1) Father-in-law   (2) Father

    (3) Uncle   (4) Grandfather

11. Which of the following statements are correct

    a. Student-centered learning environments have been shown to be effective in higher education

    b. In student-centered instruction, students and instructors share 26, the focus. Instead of listening to the teacher exclusively, students and teachers interact equally

    c. In the traditional approach to college teaching, most class time is spent with the professor lecturing and the students watching and listening.

    d. In teacher-centered instruction, students are allowed to express themselves

    (1) (a), (b), (c) and (d)   (2) (a), (b) and (c)

    (3) (b), (c) and (d)   (4) (a), (b) and (d)

12. Which of the following statements regarding the meaning of research are correct

a. Research refers to a series of systematic activity or activities undertaken to find out the solution of a problem

b. It is a systematic, logical and an unbiased process wherein verification of hypothesis data analysis, interpretation and formation of principles can be done

c. It is an intellectual enquiry or quest towards truth

d. It leads to enhancement of knowledge

(1) (a), (b) and (c)   (2) (b), (c) and (d)

(3) (a), (c) and (d)   (4) (a), (b), (c) and (d)

13. SWAYAM is a

(i) One-stop web and mobile based interactive e-content for all courses from High School to University level

(ii) High quality learning experience using multimedia on anytime, anywhere basis

(iii) State of the art system that allows easy access, monitoring and certification

(iv) Peer group interaction and discussion forum to clarify doubts

Choose the correct code to indicate your answer.

Codes:

1. (ii), (iii) and (iv)   2. (i), (ii), (iii) and (iv)

3. (i) , (ii) and (iii)   4. (i), (iii) and (iv)

14. Consider the following statements :

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

b. Good teaching is as much about passion as it is about reason

c. Good teaching is also about bridging the gap between theory and practice

Which of the above statements are correct ?

(1) a and b   (2) b and c

(3) a and c   (4) a, b and c

15. Consider the following statements about NITI Aayog :

a. The National Institution for Transforming India, also called NITI Aayog, was formed via a resolution of the Union Cabinet on January 1, 2015

b. NITI Aayog fosters Cooperative Federalism

c. The President is its Chairman

Which of the statements given above is/are correct ?

(1) a and b only   (2) b and c only

(3) a and c   (4) a, b and c

16. Imagine you are working in an educational institution where people are of equal status. Which method of communication is best suited and normally employed in such a context?

(1) Horizontal communication   (2) Vertical communication

(3) Corporate communication   (4) Cross communication

17. Which of the following statements about teaching aids are correct

a. They help in retaining concepts for longer duration

b. They help students learn better

c. They make teaching learning process interesting

d. They enhance rote learning

(1) (a), (b), (c) and (d)   (2) (a), (b) and (c)

(3) (b), (c) and (d)   (4) (a), (b) and (d)

18. Which of the following are major digital initiatives to push e-education?

a. Swayam

b. Swayam Prabha,

c. National Academic Depository

d. National Digital Library

Codes :

(1) a, b and c are correct.   (2) b, c and d are correct.

(3) a, c and d are correct.   (4) a, b , c and d are correct.

19. In the two sets given below Set - I indicates methods of teaching while Set - II provides the basic requirements for success/effectiveness. Match the two sets and indicate your answer by choosing from the code :

Set - I	Set - II
(Method of teaching)	**(Basic requirements for uccess/effectiveness)**
(a) Lecturing	(i) Small step presentation with feedback provided
(b) Discussion in groups	(ii) Production of large number of ideas
(c) Brainstorming	(iii) Content delivery in a lucid language
(d) Programmed Instructional	(iv) Use of teaching-aids procedure
	(v) Theme based interaction among participants

Code :

(a) (b) (c) (d)

(1) a-(i) b-(ii) c-(iii) d-(iv)

(2) a-(ii) b-(iii) c-(iv) d-(v)

(3) a-(iii) b-(v) c-(ii) d-(i)

(4) a-(iv) b-(ii) c-(i) d-(iii)

20. Which of the following statements are correct regarding choice based credit system (CBCS) ?

(I) The CBCS provides choice for students to select from the prescribed courses

(II) In this system students can learn at their own pace and the entire assessment is graded-based on a credit system

(III) CBCS allows students an easy mode of mobility to various educational institutions spread across the world.

(1) I, II and III

(2) Only I and II

(3) Only II and III

(4) Only I, III

21. Which of the following statements are correct regarding positivism and post positivism approaches of research ?

(i)   Positivism is the term used to describe an approach to the study of society that relies specifically on scientific evidence

(ii)   Positivism is an epistemological position that holds that the goal of knowledge is simply to describe the phenomena that we experience.

(iii)   Post positivism recognizes that all observation is fallible and has error and that all theory is revisable.

(iv)   Positivists emphasize both quantitative and qualitative methods to be valid approaches.

(1) (i), (ii) and (iii)

(2) (ii), (iii) and (iv)

(3) (ii), (iv) and (vi)

(4) (i), (iii) and (v)

22. **Assertion (A) :** Information and communication technologies (ICTs), referred to as 'eResearch' is the use of advanced digital technologies to support research

Reason (R) : eResearch exists to ensure research processes are more effective, efficient and collaborative

Choose the correct answer from the following code :

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

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

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

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

Read the following passage carefully and answer questions from 23 to 25 :

If India has to develop her internal strengths, the nation has to focus on the technological imperatives, keeping in mind three dynamic dimensions : the people, the overall economy and the strategic interests. These technological imperatives also take into account a 'fourth' dimension, time, an offshoot of modern day dynamism in business, trade, and technology that leads to continually shifting targets. We believe that technological strengths are especially crucial in dealing with this fourth dimension underlying continuous change in the aspirations of the people, the economy in the global context, and the strategic interests. The progress of technology lies at the heart of human history. Technological strengths are the key to creating more productive employment in an increasingly competitive market place and to continually upgrade human skills. Without a pervasive use of technologies, we cannot achieve overall development of our people in the years to come. The direct linkages of technology to the nation's strategic strengths are becoming more and more clear, especially since 1990s. India's own strength in a number of core areas still puts it in a position of reasonable strength in geo-political context. Any nation aspiring to become a developed one needs to have strengths in various strategic technologies and also the ability to continually upgrade them through its own creative strengths. For people-oriented actions as well, whether for the creation of large scale productive employment or for ensuring nutritional and health security for people, or for better living conditions, technology is the only vital input. The absence of greater

technological impetus could lead to lower productivity and wastage of precious natural resources. Activities with low productivity or low value addition, in the final analysis hurt the poorest most.

The technological imperatives to lift our people to a new life, and to a life they are entitled to is important. India, aspiring to become a major economic power in terms of trade and increase in GDP, cannot succeed on the strength of turnkey

projects designed and built abroad or only through large-scale imports of plant machinery, equipment and know how. Even while being alive to the short-term realities, medium and long-term strategies to develop core technological strengths within

our industry are vital for envisioning a developed India.

23. According to the above passage, which of the following are indicative of the fourth dimension ?

(a) Aspirations of people   (b) Modern day dynamism

(c) Economy in the global context   (d) Strategic interests

Code :

(1) (a), (b) and (c) only   (2) (b), (c) and (d) only

(3) (a), (c) and (d) only   (4) (a), (b) and (d) only

24. More productive employment demands :

(1) Pervasive use of technology

(2) Limiting competitive market place

(3) Geo-political considerations

(4) Large industries

25. Absence of technology would lead to :

(a) Less pollution (b) Wastage of precious natural resources

(c) Low value addition (d) Hurting the poorest most

Code :

(1) (a), (b) and (c) only   (2) (b), (c) and (d) only

(3) (a), (b) and (d) only   (4) (a), (c) and (d) only

26. Consider the following statements :

a. Intercultural communication is the verbal and nonverbal interaction between people from different cultural backgrounds

b. The study of intercultural communication requires intercultural understanding

c. Language is an example of an important cultural component that is linked to intercultural understanding

d. Intercultural communication is simply a language proficiency

Select the correct answer from the codes given below:

Codes :

(1) a, b and c   (2) a, b and d

(3) a, c and d   (4) a, b, c and d

27. **Assertion (A) :** Mass media function as an agency for socialization

Reason (R) : It is through mass media that we know the cultural and social norms of various groups in our society.

Choose the correct answer from the following code :

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

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

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

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

28. In a transaction, the profit percentage is 80% of the cost. If the cost further increases by 20% but the selling price remains the same, how much is the decrease in profit percentage?

(1) 40%   (2) 30%   (3) 35%   (4) 50%

29. A man borrowed Rs 15000/- at the rate of 24% Simple interest and to clear the debt after 6years, how much he has to return ?

(1) 38,600   (2) 36,600   (3) 36,200   (4) 25000

30. Some men are mortal.

Socrates is a man.

Therefore Socrates is mortal

Above is an example of

(1) Formally Valid Argument   (2) Informally Valid Argument

(3) Informally Invalid Argument   (4) Formally Invalid Argument

31. Match List-I with List-II and select the correct answer with the help of codes given below :

List . I	List . II
a. Contradictories	i. cannot both be true and cannot both be false
b. Contraries	ii. cannot both be true, but both can be false
c. Subcontraries	iii. cannot both be false, but both can be true.
d. Subalterns	iv. can both be true or both be false

Codes : a b c d

(1) a-ii b-iii c-iv d-i   (2) a-iii b-ii c-i d-iv

(3) a-i b-ii c-iii d-iv   (4) a-iv b-ii c-iii d-i

32. Which branch of philosophy is called theory of knowledge ?

(1) Metaphysics   (2) Epistemology

(3) Axiology   (4) None of above

33. Which of the following set of statements are correct with reference to 'Anumana' ? Indicate your answer by selecting from the code.

(a) Anumâna is the second source of valid knowledge according to the Nyâya-Vaiúeika school

(b) Anumâna is a mediateand indirect source of knowledge.

(c) The word 'anumâna' literally means after-knowledge

(d) The Naiyayikas holds that inference is the specific case of inferential cognition.

Code:

(1) (a), (b) , (c) and (d)   (2) (b), (c) and (e)

(3) (a), (c) and (f)   (4) (d), (e) and (f)

34. "The hill is fiery.

Because the hill is smoky.

Whatever has fire has smoke"

Which of the following is not correct with reference to above example ?

(1) there is the perception of a mark or reason (hetu), (e.g.smoke) in a subject(hill).

(2) there is a recollection of the relation of invariable concomitance between smoke and fire

(3) there is the inference of the existence of an unperceived object (e. g. fire) in the subject (e. g. hill).

(4) there is the inference of the non existence of an unperceived object (e. g. fire) in the subject (e. g. hill).

35. According to the definition of data scrubbing, data should be removed or amended based on which of the following assumptions about the data:

I. The data is incorrect

II. The data is old

III. The data is duplicated

Codes :

(1) I only   (2) II only

(3) I and III   (4) I,II,III

36. In 2015, approximately what percent of total revenue come from books?

(1) 45%   (2) 55%   (3) 35%   (4) 25%

37. The number of years in which there was an increase in revenue from at least two categories of items, is

(1) 0   (2) 1   (3) 2   (4) 3

38. If the year 2016 were to show the same growth in terms of total sales revenue as the year 2015 over the year 2014, then the revenue in the year 2016 must be approximately:

1. rs 194 lakh   2. rs 187 lakh

3. rs 172 lakh   4. rs 177 lakh

39. **Assertion (A) :** The three cardinal principles of Education Policy are , access, equity and quality

Reason (R)   : The National Mission on Education through Information and Communication Technology (NMEICT) encompasses all the three elements.

Codes:

(1) Both (A) and (R) are false.   (2) (A) is true and (R) is false.

(3) (A) is false and (R) is true.   (4) Both (A) and (R) are true.

40. Which of the following statements are correct ?

a. The Internet provides unlimited information which can be viewed by everyone whereas, in Intranet, data circulates within the organization

b. Both Internet and Intranet can be accessed using any browser

c. The Internet provides access to everyone whereas, Intranet permits authenticate users only.

d. Internet is a private network that belongs to a firm or an institution.

Codes :

(1) a, b and c are correct.   (2) b, c and d are correct.

(3) a, c and d are correct.   (4) a, b , c and d are correct.

41. "Transforming e-Governance for Transforming Governance" is the vision of

(1) Digital India programme   (2) E Kranti programme

(3) National e governance plan   (4) Digi locker

42. National Digital Communications Policy - 2018 envisages three Missions. These are

(a) Connect India

(b) Propel India

(c) Secure India

(d) Digital India

Codes

(1) (a), (b) and (c) are correct   (2) (b), (c) and (d) are correct.

(3) (a), (c), (d) are correct   (4) (a), (b) and (d) are correct

43. Which of the following are goals to be achieved under Millennium Development Goals?

a. To eradicate extreme poverty and hunger

b. To achieve universal primary education

c. To promote gender equality

d. To eradicate civil war

e. To reduce child mortality

(1) a, c, e   (2) a, b, d, e   (3) a, b, c, e   (4) All of the above

44. Which organisation in India has been given the responsibility to monitor the progress of sustainable development goals ?

(1) Reserve Bank of India   (2) Central Statistical Office

(3) NITI Aayog   (4) National Sample Survey office

45. With reference to Paris agreement on climate change, consider the following statements :

I. It was signed by 195 nations in Dec 2015 at Paris

II. The main aim is to keep a global temperature rise this century well below 3 degrees Celsius

III. It further aims to drive efforts to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels

Which of the above statements are correct ?

(1) I and II   (2) II and III   (3) I, II and III   (4) I and III

46. Which among the following is first residential ancient university?

(1) Lalitgiri   (2) Nalanda(3) Ratnagiri   (4) Udayagiri

47. Which of the follow ing identifies a specific w eb page and its computer on the Web?

(1) Web site   (2) Web site address

(3) URL   (4) Domain Name

48. Which of the following statements are correct regarding - 'Kaushal Bharat, Kushal Bharat'.

(a) It is a Skill India initiative

(b) Under this initiative, the government has set itself a target of training 400 million citizens by 2022 that would enable them to find jobs.

(c) It include various programmes like: Pradhan Mantri Kaushal Vikas Yojana (PMKVY), National Policy for Skill Development and Entrepreneurship 2015, Skill Loan scheme, and the National Skill Development Mission.

(d) PMKVY includes incentivising skill training by providing financial rewards on completion of training to the participants

Select the correct answer from the codes given below:

Code:

(1) (a), (b) and (c)   (2) (b), (c) and (d)

(3) (a), (c) and (d)   (4) (a), (b), (c) and (d)

49. **Assertion (A) :** Value-education is the aggregate of all the process by means of which a person develops abilities, attitudes and other forms of behaviour of the positive values in the society in which he lives.

Reason (R) : The very purpose and main function of education is the development of an all round and well-balanced personality of the students.

Choose the correct answer from the following code :

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

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

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

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

50. Pointing to a photograph. Bajpai said, " He is the son of the only daughter of the father of my brother." How Bajpai is related to the man in the photograph?

(1) Nephew   (2) Brother

(3) Father   (4) Maternal Uncle

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Answer	3	3	1	2	3	1	1	3	2	2	2	4	2	4	1	1	2	4	3	1
Question	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Answer	1	1	3	1	2	1	1	2	2	4	3	2	1	4	3	1	3	4	4	1
Question	41	42	43	44	45	46	47	48	49	50										
Answer	2	1	3	3	4	2	4	2	1	4										

Hint and Solution

1.(3) In its broadest sense, teaching is a process that facilitates learning. Teaching is the specialized application of knowledge, skills and attributes designed to provide unique service to meet the educational needs of the individual and of society.

The choice of learning activities whereby the goals of education are realized in the school is the responsibility of the teaching profession.

In addition to providing students with learning opportunities to meet curriculum outcomes, teaching emphasizes the development of values and guides students in their social relationships.

Teachers employ practices that develop positive self-concept in students.

Although the work of teachers typically takes place in a classroom setting, the direct interaction between teacher and student is the single most important element in teaching.

2.(3) Memory level of teaching

It is the first and thoughtless level of teaching. It is concerned with memory or mental ability that exists in all living beings. Teaching at memory level is considered to be the lowest level of teaching. At this level,

" the thinking ability does not play any role.

" students only cram the facts, information, formulas and laws that are taught to them.

" the teaching is nothing but learning the subject matter by rote

" the role of the teacher is prominent and that of the student is secondary.

" The study material is organized and pre-planned. The teacher presents the study material in a sequential order.

Memory level teaching lacks insight. Psychologically, it is cognitive level teaching.

3.(1) Fundamental research speaks about theory building. It aims to improve scientific theories for improved understanding or prediction of natural or other phenomena. Applied research is the application of existing scientific knowledge to practical applications, like technology or inventions..

Action research is either research initiated to solve an immediate problem or a reflective process of progressive problem solving led by individuals working with others in teams or as part of a "community of practice" to improve the way they address issues and solve problems.

4.(2) Ex-post-facto method would be appropriate in above situation.

An ex post facto research design is a method in which groups with qualities that already exist are compared on some dependent variable. Also known as "after the fact" research, an ex post facto design is considered quasi-experimental because the subjects are not randomly assigned - they are grouped based on a particular characteristic or trait.

5.(3) Central Advisory Board of Education (CABE), is the highest advisory body to advise the Union and State Governments in the field of education.

It advises the Government in the matters related to

i.   Review of the National Policy on Education, in the light of the significant socio-economic and socio-cultural developments taking place in the country.

ii.   Girls Education and the Common School System

iii.   Universalization of Secondary Education

iv.   Integrating Culture Education in the School Curriculum

v.   Regulatory Mechanism for the Text Books and parallel text books taught in schools outside the Government system

vi.   Autonomy and Financing of Higher and Technical Education.

6.(1) Education has all through been considered a key driver of national development; an essential condition for building a humane society. However, the core objectives of education in the coming years should encompass four essential components - i.e. building values, awareness, knowledge and skills.

7.(1) Global warming is the increase in Earth's near-surface air and ocean temperatures. The greenhouse effect is when water and carbon dioxide absorb outgoing infrared radiation, increasing the planet's temperature.

Greenhouse gases contribute to global warming.

What is determined to be a greenhouse gas is any heat-trapping gas present in the Earth's atmosphere.

The two most common greenhouse gases are water vapor and carbon. These gases help absorb infrared radiation and regulate the Earth's climate.

However, the increase in industrial production has increased the amount of greenhouse gases present in the atmosphere.

The increase in carbon dioxide emissions has made it difficult for heat to escape the atmosphere which in turn contributes to the warming effect.

8.(3) 2 to power 2 = 4, 4-5 = -1

2 to power 3 = 8,   8- 3 = 5

2 to power 4 = 16, 16-1 = 15

2 to power 5 = 32,   32 - 3 = 29

2 to power 6 = 64 ,   64- 5 = 59

9.(2) COVA LENT

BWPD UOFM

1st term sum (C) of COVALENT   =4th terms sum (D) of BWPDUOFM

2nd term sum(O) of COVALENT =3rd term sum(P) of BWPDUOFM...likewise

Therefore option (2) is correct.

10.(2) Rakesh's son's uncle - Rakesh's brother. So, the old man's son is Rakesh's brother i.e., the old man is Rakesh's father.

11.(2)   Student-centered learning environments have been shown to be effective in higher education.

They are characterised by innovative methods of teaching which aim to promote learning in communication with teachers and other learners and which take students seriously as active participants in their own learning and foster transferable skills such as problem-solving, critical thinking, and reflective thinking.

In the traditional approach to college teaching, most class time is spent with the professor lecturing and the students watching and listening.

The students work individually on assignments, and cooperation is discouraged . When students work alone, they don't learn to collaborate with other students, and communication skills may suffer.

In teacher-centered instruction, students are not allowed to express themselves, ask questions and direct their own learning.

In student-centered instruction, students and instructors share the focus. Instead of listening to the teacher exclusively, students and teachers interact equally.

This approach include active learning, in which students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class; cooperative learning, and inductive teaching and learning. When both approaches are used together, students can enjoy the positives of both types of education. Instead of getting bored with teacher centered education or losing sight of their goals in a completely student-centered classroom, pupils can benefit from a well-balanced educational atmosphere.

12.(4) Research has been defined in a number of different ways.

A broad definition of research is given by Godwin Colibao: "In the broadest sense of the word, the definition of research includes any gathering of data, information, and facts for the advancement of knowledge."

Another definition of research is given by John W. Creswell, who states that "research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue".

It consists of three steps: pose a question, collect data to answer the question, and present an answer to the question.

The Merriam-Webster Online Dictionary defines research in more detail as "a studious inquiry or examination; especially investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws.

13.(2) Under SWAYAM or Study Webs of Active -Learning for Young Aspiring Minds programme of Ministry of Human Resource Development, Government of India, professors and faculties of centrally funded institutions like IITs, IIMs, central universities will offer online courses to citizens of India.

SWAYAM is a:

1. One-stop web and mobile based interactive e-content for all courses from

High School to University level.

2. High quality learning experience using multimedia on anytime, anywhere basis.

3. State of the art system that allows easy access, monitoring and certification.

4. Peer group interaction and discussion forum to clarify doubts

5. Hybrid model of delivery that adds to the quality of classroom teaching.

SWAYAM involves development of Massive Open Online Courses (MOOCs) compliant e-content (video and text) and building a robust IT platform.

14.(4) According to Burton, **Teaching is the stimulation, guidance, direction and encouragement of learning**.

Good teaching requires some basics that a teacher should follow to achieve the main goal of teaching.

Good teaching is as much about passion as it is about reason. It's about not only motivating students to learn, but teaching them how to learn, and doing so in a manner that is relevant, meaningful, and memorable.

It's about caring for your craft, having a passion for it, and conveying that passion to everyone, most importantly to your students.

Good teaching is also about bridging the gap between theory and practice.

It is about listening, questioning, being responsive, and remembering that each student and class is different. It is about caring, nurturing, and developing minds and talents.

Diagnosis, Remedy, Direction and Feedback are required for good teaching.

15.(1) The National Institution for Transforming India, also called NITI Aayog, was formed via a resolution of the Union Cabinet on January 1, 2015.

NITI Aayog is the premier policy 'Think Tank' of the Government of India, providing both directional and policy inputs.

While designing strategic and long term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States.

The Government of India, in keeping with its reform agenda, constituted the NITI Aayog to replace the Planning Commission instituted in 1950.

An important evolutionary change from the past, NITI Aayog acts as the

quintessential platform of the Government of India to bring States to act together in national interest, and thereby fosters Cooperative Federalism.

The Prime minister is its Chairperson.

16.(1) Horizontal communication is the communication where information or messages flows among the similar or same level statuses of people in the organizational structure.

Horizontal communication is the communication that flows laterally within the organization, involves persons at the same level of the organization. Horizontal communication normally involves coordinating information and allows people with the same or similar rank in an organization to cooperate or collaborate. Thus in terms of statuses horizontal method is used.

17.(2) A teaching aid is an object (such as a book, picture, or map) or device (such as a dvd or computer) used by a teacher to enhance or enliven classroom instruction. Teaching aids play an very important role in Teaching- Learning process. Importance of Teaching aids are as follows :-

1) Motivation

Teaching aids motivate the students so that they can learn better.

2) Clarification

Through teaching aids , the teacher clarify the subject matter more easily.

3) Discouragement of Cramming

Teaching aids can facilitate the proper understanding to the students which discourage the act of cramming.

4) Increase the Vocabulary

5) Saves Time and Money

6) Classroom Live and active

7) Avoids Dullness

8) Direct Experience

9) Teaching aids makes learning permanent

10) Teaching aids encourages the healthy classroom interaction.

18.(4) Four major digital initiatives were launched in 2017 by the Government Of India , to push e-education.

They are Swayam, Swayam Prabha, National Academic Depository and National

Digital Library.

All these digital initiatives are operational under Union Ministry of Human Resource and Development .

Swayam: It an indigenously designed massive open online course (MOOC).

Swayam Prabha: It will provide high quality educational contents, developed by experts, through 32 DTH (direct to home) Television Channels with an aim to bring uniformity in standards of education.

National Academic Depository: It is a digital depository of academic awards for authenticating all certificates issued by institutions.

National Digital Library: It is a large online library containing 6.5 million books.

19.(3) Brainstorming is a situation where a group of people meet to generate new ideas and solutions around a specific domain of interest by removing inhibitions. People are able to think more freely and they suggest many spontaneous new ideas as possible.

All the ideas are noted down and are not criticized and after brainstorming session the ideas are evaluated.

Programmed instruction is an auto-instructional technique. The information is provided in small steps and each learner progresses at his/her own pace.

It provides immediate feedback to the learners.

20.(1) University Grants Commission has come up with the Choice Based Credit System (CBCS) programme in which the students have a choice to choose from the prescribed courses, which are referred as core, elective or minor or soft skill courses

In this system students can learn at their own pace and the entire assessment is graded-based on a credit system.

The basic idea is to look into the needs of the students so as to keep up-to-date with development of higher education in India and abroad.

CBCS aims to redefine the curriculum keeping pace with the liberalisation and globalisation in education.

CBCS allows students an easy mode of mobility to various educational institutions spread across the world along with the facility of transfer of credits earned by students.

The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core, elective/minor or skill based courses.

The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system.

21.(1) Positivism is the term used to describe an approach to the study of society that relies specifically on scientific evidence, such as experiments and statistics, to reveal a true nature of how society operates.

Positivism is an epistemological position that holds that the goal of knowledge is simply to describe the phenomena that we experience.

The purpose of science is sticking to what we can observe and measure. Knowledge of anything beyond that is impossible.

Post positivism recognizes that the way scientists think and work and the way we think in our everyday life are not distinctly different.

Scientific reasoning and common sense reasoning are essentially the same process. There is no difference in kind between the two, only a difference in degree.

Post positivism recognizes that all observation is fallible and has error and that all theory is revisable.

While positivists emphasize quantitative methods, post positivists consider both quantitative and qualitative methods to be valid approaches.

22.(1) Information and communication technologies (ICTs), referred to as 'eResearch' is the use of advanced digital technologies to support research.

eResearch exists to ensure research processes are more effective, efficient and collaborative.

It plays a vital role in enabling users to explore new and innovative research opportunities.

Without it, these discoveries and opportunities may not have otherwise been possible if only standard desktops or general purpose IT technology were used.

23.(3) If India has to develop her internal strengths, the nation has to focus on the technological imperatives, keeping in mind three dynamic dimensions : the people, the overall economy and the strategic interests. These technological imperatives also take into account a 'fourth' dimension, time, an offshoot of

modern day dynamism in business, trade, and technology that leads to continually shifting targets.

24.(1) For people-oriented actions as well, whether for the creation of large scale productive employment or for ensuring nutritional and health security for people, or for better living conditions, technology is the only vital input.

25.(2) The absence of greater technological impetus could lead to lower productivity and wastage of precious natural resources.

Activities with low productivity or low value addition, in the final analysis hurt the poorest most.

26.(1)Intercultural communication is the verbal and nonverbal interaction between people from different cultural backgrounds.

Basically, 'inter-' is a prefix that means 'between' and cultural means… well, from a culture, so intercultural communication is the communication between cultures.

The study of intercultural communication requires intercultural understanding, which is an ability to understand and value cultural differences.

Language is an example of an important cultural component that is linked to intercultural understanding.

Intercultural communication is in a way the 'interaction with speakers of other languages on equal terms and respecting their identities'.

Intercultural communication is also not simply a language proficiency.

Yes, communication requires the ability to understand language, but just think about how much of your communication with even your own friends is nonverbal: our body language, our attitudes, the rituals from hand-shaking to the stink eye. Some researchers estimate that up to 93% of all human communication is nonverbal, although according to recent studies, it's actually closer to 60%.

Still, that means that more than half of communication is never spoken. **So, intercultural communication is going to take a lot more than just learning a language.**

27.(1) Mass media function as an agency for socialization.

Socialization means empowering people to acquire norms and experiences of the group as a whole, to maintain cultural consensus and communal harmony.

It is through mass media that we know the cultural and social norms of various

groups in our society.

On the basis of this information, individuals honour others and behave according to the common values and thus create an integrated society.

28.(2) Let us assume CP = Rs. 100.

Then Profit = Rs. 80 and selling price = Rs. 180.

The cost increases by 20% ? New CP = Rs. 120, SP = Rs. 180.

Profit % = 60/120 * 100 = 50%.

Therefore, Profit decreases by 30%.

29.(2) Using the Basic Formula:

Simple Interest (SI) = (P x R x T)/100

P - Principal amount, T- Number of years, R - Rate of Interest

Given P = 15000, T = 6 Years, R = 24%

Simple Interest (S.I.) = (15000X24X6)/100= Rs 21600

Therefore, total interest = 21600

Total repayment = S.I + Principal amount = 21600 + 15000 = Rs 36600

30.(4) A formal fallacy is one which involves an error in the form, arrangement or technical structure of an argument.

The question in view is not whether a conclusion is true or false, but whether the form of the argument is correct or incorrect, valid or invalid.

The concluding statement of an argument may be objectively true, though the argument is formally invalid; or the concluding statement may be objectively false, though the argument is formally valid.

In the given example, the first statement says something about some men, not about all men. One could correctly reason from this first statement that Socrates might possibly be mortal, but he could not correctly reason that Socrates necessarily is mortal.

It is therefore an example of Formally Invalid Arguments.

31.(3) There are four types of immediate arguments: Contradictories, Contraries, Subcontraries, Subalterns.

1. Contradictories

Two propositions are contradictory if one of them is denial of another. They cannot both be true, and cannot both be false.

A-proposition is contradictory of O-proposition, and E-proposition is contradictory of I-proposition.

2. Contraries

Two propositions are contrary if they cannot both be true, but they might both be false. A-proposition is contrary of E-proposition.

3. Subcontraries

Two propositions are subcontrary if they cannot both be false, bu they might both be true. I-proposition is subcontrary of O-proposition.

4. Subalterns

A proposition is a subaltern of another iff it must be true if its superaltern is true, and the superaltern must be false if the subaltern is false.

I-proposition is subaltern of A-proposition, and O-proposition is subaltern of E-proposition.

32.(2) Epistemology is the branch of philosophy concerned with the nature and scope of knowledge and is also referred to as "theory of knowledge".

Etymologically the word epistemology has been derived from the Greek words episteme, meaning "knowledge, understanding", and logos, meaning "study of". In other words we can say that Epistemology is the study of the nature, source, and validity of knowledge.

33.(1) In Sanskrit inference is known as 'anumâna'.

Anumâna is the second source of valid knowledge according to the Nyâya-Vaiúeika school.

Anumâna is a mediateand indirect source of knowledge.

It is different from 'Pratyaka,' because pratyaka is a direct and immediate source of knowledge.

The word 'anumâna' literally means after-knowledge.

The word 'anumâna' is a Combination of two words: 'anu' which means 'after' and 'mana' which means 'knowledge'. The joint meaning of these two words is 'after knowledge'.

Anumâna is a knowledge which arises after other knowledge. There are two meanings of the word 'anumâna'. First, it may mean inferential cognition (anumiti). Secondly, it may mean the instrument of Inferential cognition (anumiti-kârana).

The Naiyayikas use the word 'anumâna' in the latter sense and holds that inference is the specific case of inferential cognition.

34.(4) From the definitions of inference, it appears that an inference must have some constituents.

It has three terms and at least three propositions. In the above mentioned example, three points are to be noted.

First, there is the perception of a mark or reason (hetu), (e.g.smoke) in a subject(hill).

Secondly, there is a recollection of the relation of invariable concomitance between smoke and fire as we have observed in the past.

Thirdly, there is the inference of the existence of an unperceived object (e. g. fire) in the subject (e. g. hill).

Three terms are involved in this inference. They are paka, sâdhya and hetu.

35.(3) Data scrubbing refers to the procedure of modifying or removing incomplete, incorrect, inaccurately formatted, or repeated data in a database.

The key objective of data scrubbing is to make the data more accurate and consistent.

Data scrubbing is a vital strategy for ensuring that databases remain accurate.

It is especially important in data-intensive industries, including telecommunications, insurance, banking and retailing.

Data scrubbing systematically evaluates data for flaws or mistakes with the help of look-up tables, rules and algorithms.

Data scrubbing is also referred to as data cleansing.

The table below embodies data on the sales revenue (rs in lakh) generated by a publishing house during the years 2012-15 while selling books, magazines and journals as three categories of items. Answer questions 31 to 33   based in the data contained in the table below;

/year   sales revenue in lakhs

Items	2012	2013	2014	2015
Journals	46	47	45	44
Magazines	31	39	46	51
Books	73	77	78	78

Total

36.(1) The total sales in 2015 are 44+51+78 = 173.

So, out of them books are %=(78/173) x 100 = 45 %

37.(3) This happens only twice

1. 2013 (over 2012) : sales of all items increased

2. 2014 (over 2013): sales of only two items increased

3. 2015 (over 2014): journals declined, magazines increased and books stagnant.

So only in two years (2013 and 2014), we see increase in the revenue from at least two categories.

38.(4) Let "A" be the total sales in 2016.

IF % wise the growth is same for 2014-15 and 2015-16 then, the ratio should also be same. i.e.

Sales of [2014 ÷ 2015]= sales of [2015 ÷ 2016]

(169 ÷ 173)=(173 ÷ A)

A=(173*173) ÷ 169 = 177 lakh.

39.(4) The National Mission on Education through Information and Communication Technology (NMEICT) has been envisaged as a Centrally Sponsored Scheme to leverage the potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Education Institutions in any time any where mode. The three cardinal principles of Education Policy viz., access, equity and quality could be served well by providing connectivity to all colleges and universities, providing low cost and affordable access-cum-computing devices to students and teachers and providing high quality e-content free of cost to all learners in the country.

NMEICT encompasses all the three elements. The Mission has two major components:

" providing connectivity, along with provision for access devices, to institutions and learners; and Content generation.

40.(1) The Internet provides unlimited information which can be viewed by everyone whereas, in Intranet, data circulates within the organization.

The Internet provides access to everyone whereas, Intranet permits authenticate

users only.

The Internet is not owned by any single or multiple organization, whereas, Intranet is a private network that belongs to a firm or an institution.

The Internet is available to all whereas, Intranet is restricted.

An intranet is safer as compared to the Internet.

Both Internet and Intranet can be accessed using any browser.

They use Internet Protocols for transferring data.

Both of them are used to share information with the users over the network.

41.(2)Government of India has approved the e-Kranti programme recently with the vision of "Transforming e-Governance for Transforming Governance" and its mission is "To ensure a Government-wide transformation by delivering Government services electronically to the citizens through integrated and interoperable systems via multiple modes, while ensuring efficiency and transparency .

All new and on-going eGovernance projects as well as the existing projects, which are being revamped, should now follow the key principles of e-Kranti namely 'Transformation and not Translation', 'Integrated Services and not Individual Services', 'Government Process Reengineering (GPR) to be mandatory in every MMP', 'ICT Infrastructure on Demand', 'Cloud by Default', 'Mobile First', 'Fast Tracking Approvals', 'Mandating Standards and Protocols', 'Language Localization', 'National GIS (Geo-Spatial Information System)', 'Security and Electronic Data Preservation'.

42.(1) The new National Digital Communications Policy -2018 will replace the existing National Telecom Policy-2012, to cater to the modern technological advancements such as 5G, IoT, M2M etc. in the Telecom Sector.

It envisages three Missions:

1. **Connect India:** Creating Robust Digital Communications Infrastructure.

2. **Propel India:** Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation.

3. **Secure India:** Ensuring Sovereignty, Safety and Security of Digital Communications.

43.(3) The Millennium Development Goals (MDGs) were the eight international development goals for the year 2015 that had been established following the Millennium Summit of the United Nations in 2000.

All 191 United Nations member states at that time, and at least 22 international organizations, committed to help achieve the following Millennium Development Goals by 2015:

To eradicate extreme poverty and hunger,

To achieve universal primary education

To promote gender equality and empower women

To reduce child mortality

To improve maternal health

To combat HIV/AIDS, malaria, and other diseases

To ensure environmental sustainability

To develop a global partnership for development

44.(3) The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations.

The broad goals are interrelated though each has its own targets to achieve. The total number of targets is 169. The SDGs cover a broad range of social and economic development issues. These include poverty, hunger, health, education, climate change, gender equality, water, sanitation, energy, environment and social justice.

The responsibility for overseeing SDG implementation has been assigned to the National Institution for Transforming India (NITI Aayog).

45.(4) An historic agreement to combat climate change and unleash actions and investment towards a low carbon, resilient and sustainable future was agreed by 195 nations in Paris in Dec 2015.

The Paris Agreement for the first time brings all nations into a common cause based on their historic, current and future responsibilities.

The universal agreement's main aim is to keep a global temperature rise this century well below 2 degrees Celsius and to drive efforts to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels.

The 1.5 degree Celsius limit is a significantly safer defense line against the

worst impacts of a changing climate.

46.(2) Education in India dates back to its early civilization time where teaching and learning process revolved around the 'Gurukal system' .

This system had been a residential concept wherein the students were educated under the tutorship of a teacher in different areas of religion, philosophy and science.

Modern concept of University style education centers were established around 6 BC at Nalanda and Takshila .

Nalanda University in Bihar was founded in the 5th Century A.D.

It was the first Residential International University of the World.

It was considered to be a great center of learning throughout the whole of Asia.

47.(4) Domain Name identifies a specific web page and its computer on the Web.

48.(2) The Prime Minister launched the Skill India initiative - 'Kaushal Bharat, Kushal Bharat'.

Under this initiative, the government has set itself a target of training 400 million citizens by 2022 that would enable them to find jobs.

The initiatives launched include various programmes like: Pradhan Mantri Kaushal Vikas Yojana (PMKVY), National Policy for Skill Development and Entrepreneurship 2015, Skill Loan scheme, and the National Skill Development Mission.

PMKVY is the flagship program under the Skill India Initiative and it includes incentivising skill training by providing financial rewards on completion of training to the participants. Over the next year 2.4 million Indians are believed to be benefitted from this scheme.

49.(1) "Value-education is the aggregate of all the process by means of which a person develops abilities, attitudes and other forms of behaviour of the positive values in the society in which he lives.

The very purpose and main function of education is the development of an all round and well-balanced personality of the students, and also to develop all dimensions of the human intellect so that our children can help make our nation more democratic, cohesive, socially responsible, culturally rich and intellectually competitive nation.

But, nowadays, more emphasis is unduly laid on knowledge-based and information-oriented education which takes care of only the intellectual development of the child.

Consequently, the other aspect of their personality like physical, emotional, social and spiritual are not properly developed in providing for the growth of attitudes, habits, values, skills and interests among the pupils.

It is here that we talk in terms of value-education

50.(4) The man in the photo is the son of the sister of Bajpai. Hence, Bajpai is the maternal uncle of the man in the photograph.