

# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper September 2022

Time Allotted: 1 Hour and 15 Minutes

Maximum Marks: 100

### Important Instructions :

- Each question carries 2 marks.
- This paper consists of fifty (50) multiple-choice type of questions.
- Each item has four alternative options marked (a), (b), (c) and (d). You have to select the correct option.  
**Example:** where (c) is the correct option then you will select it like this (a)  (b)  (c)  (d) .
- Use of any calculator or log table etc., is prohibited.
- There is no negative marking for incorrect answers.

**Direction for Questions (1 to 5):** Based on the data in the table, answer the five question that follow:

The following table gives the sale figures of five different types of batteries (in thousands) sold by a company during the years 2015 to 2021.

**Year-wise Sale of Batteries**

Year	Types of Batteries Sold (in thousands)				
	4AH	7AH	32AH	35AH	55AH
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

- What was the approximate percentage increase in the sales of 55AH batteries in 2021 compared to that in 2015?  
(a) 28% (b) 31%  
(c) 33% (d) 34%
- The total sales of all the seven years is maximum for which type of battery?  
(a) 4AH (b) 7AH  
(c) 32AH (d) 35AH
- What is the difference in the number of 35AH batteries sold in 2016 and 2020?  
(a) 24000 (b) 28000  
(c) 35000 (d) 39000
- The percentage of 4AH batteries sold in a given year to the total number of batteries sold in that same year maximum in the year.  
(a) 2017 (b) 2018  
(c) 2019 (d) 2020
- In case of which type of battery there was a continuous decrease in sales from 2015 to 2020?  
(a) 4AH (b) 7AH  
(c) 32AH (d) 35AH
- Which scheme of Ministry of Education, Government of India, uses Artificial intelligence to make learning more personalised and customised, as per requirements of the learners?  
(a) NEAT  
(b) NEET  
(c) SWAYAM  
(d) SWAYAM PRABHA

7. Upon completion of academic programmes (Graduation), what outcomes should the students have attained?
- Programme Education Objectives/  
Programme outcomes
  - Lesson outcomes
  - Course outcomes
  - Unit/Chapter outcomes
8. Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**
- Assertion (A):** Teachers must encourage students to ask questions.
- Reason (R):** Asking questions can create curiosity and develop passion for learning.
- In light of the above statements, choose the **most appropriate** answer from the options given below
- Choose the correct answer from below :
- Both (A) and (R) are correct, and (R) is the correct explanation of (A).
  - Both (A) and (R) are correct, but (R) is not the correct explanation of (A).
  - (A) is correct but (R) is not correct
  - (A) is not correct but (R) is correct
9. Which of the following model is used for development of e-content for MOOCs on SWAYAM?
- Four Quadrant
  - Two Quadrant
  - Flipped Classroom
  - Bloom's Taxonomy
10. In order to develop a video for MOOC, how much portion of some copyrighted video is allowed to be used as per the fair use guidelines?
- Upto 10% or 10 minutes, whichever is less.
  - Upto 10% or 3 minutes, whichever is less.
  - Upto 20% or 10 minutes, whichever is less.
  - Upto 30% or 3 minutes, whichever is less.
11. When the subjects of a research change or improve their behaviour, not due to changes in experimental stimulus, it is called
- The Hawthorne effect
  - The Glenn effect
  - The Fischer effect
  - The Kerlinger effect
12. The advantages of research based on field experiments are:
- A strong external validity.
  - Subjects behave normally and naturally.
  - The experiment takes place in a natural setting.
  - Generation of primary data
  - Non-requirement of elaborate logistics
- Choose the correct answer from the options given below:
- A, B and C only
  - B, C and D only
  - C, D and E only
  - A, C and E only
13. Hypothesis, that is alternative to null hypothesis, is represented as
- $H_0$
  - $H_1$
  - $H_{alt}$
  - $H_{\neq 0}$
14. What is SCOPUS?
- Software to prepare Ph.D thesis
  - Database containing abstracts and citations of academic journals
  - Agency to fund research and development
  - Plagiarism checking software
15. The Social Science research which is data-based, has been associated with
- Authoritarian mode
  - Positivist philosophy
  - Network theory
  - Phenomenology
16. The modern communication revolution is propelled by
- Cold war propaganda
  - International commerce
  - Technological convergence
  - Change in political systems
- Effective classroom communication will enable
- Efficient teaching
  - Interest in learning
  - Minimal assessment
  - Interaction between teacher and students
  - Teacher-centric behaviour
17. Choose the correct answer from the options given below:
- A, B and C only
  - B, C, D and D only
  - C, D and E only
  - A, B and D only

18. Which of the following are barriers to understand the communicated messages?
- Emotional quotient
  - Jargon
  - Personal space
  - Pre-judgment
  - Cultural background

Choose the correct answer from the options given below:

- (a) A, B and C only      (b) B, D and E only  
(c) C, D and E only      (d) B, C and D only

19. Given below are two statements

**Statement I :** Knowledge is a form of cultural capital for all practical purposes.

**Statement II :** Communication media make cultural capital a form of illimitable property.

In light of the above statements, choose the **most appropriate** answer from the options given below

- (a) Both Statement I and Statement II are correct  
(b) Both Statement I and Statement II are incorrect  
(c) Statement I is correct but Statement II is incorrect  
(d) Statement I is incorrect but Statement II is correct

20. Match List I with List II

List I Concept of presentation	List II Characteristic
(A) Text	(I) Order of signification
(B) Discourse	(II) Subjective invention
(C) Connotation	(III) Micro data
(D) Myth	(IV) Micro exchange

Choose the correct answer from the options given below:

- (a) A - I, B - II, C - III, D - IV  
(b) A - II, B - III, C - IV, D - I  
(c) A - III, B - IV, C - I, D - II  
(d) A - IV, B - I, C - II, D - III

21. Choose the set of numbers, similar to the set (31, 19, 41) out of the following:

- (27, 29, 47)
- (23, 34, 49)
- (29, 16, 41)
- (29, 17, 37)
- (23, 37, 49)

Choose the correct answer from the options given below:

- (a) A, C and E only      (b) A and B only  
(c) B and D only      (d) D only

22. Unscramble the strings below to create a meaningful word and then find the odd one out:

- EIWNTR
- UMRSME
- PIGRSN
- LCUOD

Choose the correct answer from the options given below:

- (a) A only      (b) B only  
(c) C only      (d) D only

23. What shall be the value when 0.07 is divided by 350?

- (a) 0.0002      (b) 0.002  
(c) 0.02      (d) 0.00002

24. Six persons went to a hotel for a dinner. Five of them spent Rs 150 each on their meals, while the sixth person spent Rs 80 more than the average expenditure of all the six persons. What is the total money spent by all the six persons?

- (a) 996      (b) 999  
(c) 1000      (d) 1001

25. The selling price of 30 fans is equal to the purchase price of 25 fans. What is the profit or loss in percentage?

- (a) A gain of  $16\left(\frac{2}{3}\right)\%$   
(b) A loss of 15%  
(c) A loss of  $16\left(\frac{2}{3}\right)\%$   
(d) No gain, no loss

26. In Classical Square of Opposition, if 'Some S is P' is given as true then which of the following could be immediately inferred from it?

A. 'Some S is not P' is false

- B. 'Some S is not P' is true  
 C. 'No S is P' is false  
 D. 'All S is P' is undetermined  
 E. 'Some S is not P' is undetermined

Choose the correct answer from the options given below:

- (a) A, B and D only      (b) C, D and E only  
 (c) B, C and D only      (d) B and C only

27. A facility in which the conclusion is stated or assumed within one of the premisses is known severally as:

- A. Petitio Principii  
 B. Irrelevant Conclusion  
 C. Begging the Question  
 D. Fallacy of Composition  
 E. Circular argument

Choose the correct answer from the options given below:

- (a) A, D and E only      (b) C and D only  
 (c) B, C and E only      (d) A, C and E only

28. Analogical Arguments are:

- (a) Deductive in nature  
 (b) Inductive in nature  
 (c) Valid arguments but fallacious  
 (d) Invalid arguments

29. Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion (A)** : According to Classical Indian School of Logic (Nyaya). It is desirable but not necessary to offer an example in a syllogistic argument or inference.

**Reason (R)** : Example shows that there is at least one existent object or case in the world in which the middle and major terms co-exist.

In light of the above statements, choose the **most appropriate** answer from the options given below

- (a) Both (A) and (R) are correct, and (R) is the correct explanation of (A).  
 (b) Both (A) and (R) are correct, but (R) is not the correct explanation of (A).  
 (c) (A) is correct but (R) is not correct  
 (d) (A) is not correct but (R) is correct

30. An American is told by his friend that Asian buffalo is like bison in such and such respects. When the American visits Asia and comes across a buffalo, he comes to know that the animal seen by him is buffalo. Which of the following means of knowledge (pramana) is used in this instance?

- (a) Postulation (Arthapatti)  
 (b) Comparison (Upamana)  
 (c) Perception (Pratyaksa)  
 (d) Verbal Testimony (Sabda)

31. Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**.

**Assertion (A)** : Static RAM is typically used for PC's main memory while Dynamic RAM is used for CPU cache.

**Reason (R)** : Static RAM is faster and more expensive than Dynamic RAM.

In light of the above statements, choose the **correct** answer from the options given below

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).  
 (b) Both (A) and (R) are true, but (R) is NOT the correct explanation of (A).  
 (c) (A) is true but (R) is false  
 (d) (A) is false but (R) is true

32. With respect to the Computers, what is the purpose of compressing a data file?

- (a) To encrypt the data  
 (b) To occupy less storage space  
 (c) To increase transmission time over a network  
 (d) To allow the file to be read by a variety of applications

33. Which of the following peripheral devices are considered as only input devices?

- A. Microphone  
 B. Projector  
 C. Joy stick  
 D. Scanner  
 E. Track-ball

Choose the correct answer from the options given below:

- (a) A, C, D and E only      (b) A, B, D and E only  
 (c) B, C, D and E only      (d) A, B, C and D only

34. A Company's word-processed daily report contains a graph from a spreadsheet. The report needs to display the most recent information from the spreadsheet. What feature should be used to insert the most up-to-date graph?
- (a) Copy and paste  
(b) Mail merge wizard  
(c) Automated importing  
(d) Linking and embedding
35. Which type of virus or destructive software could appear to be useful, but will actually cause damage once installed or run by a user?
- (a) Hoax                      (b) Worm  
(c) Trojan Horse          (d) System Sector
36. According to Noise Pollution (Regulation and Control) rules in India, noise ( $L_{eq}$ ) in educational institutions during night time (10 pm - 6 am) must not exceed
- (a) 35 dB                      (b) 40 dB  
(c) 45 dB                      (d) 50 dB
37. The percentage increase in carbon dioxide concentration in atmosphere from pre-industrial times is approximately
- (a) 55 %                      (b) 50 %  
(c) 74 %                      (d) 62 %
38. The highest nonzero dose at which no toxic effect is observed in a study on animals is called
- (a)  $LD_{50}$                       (b) NOAEL  
(c) LOAEL                      (d) NOEFF
39. Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**
- Assertion (A) :** Hybrid Electric Vehicles's (HEVs) fuel running cost is lesser than Electric Vehicles (EVs).
- Reason (R) :** Hybrid Electric Vehicles have both an internal combustion engine and an onboard electric power generation system.
- In light of the above statements, choose the **most appropriate** answer from the options given below
- (a) Both (A) and (R) are correct, and (R) is the correct explanation of (A).  
(b) Both (A) and (R) are correct, but (R) is NOT the correct explanation of (A).  
(c) (A) is correct but (R) is not correct  
(d) (A) is not correct but (R) is correct
40. What is the correct chronological order of sequence from older to newer of the following agreement, summit and protocols?
- A. Paris Agreement  
B. Montreal Protocol  
C. Kyoto Protocol  
D. Rio Summit
- Choose the correct answer from the options given below:
- (a) A, B, C, D                      (b) B, D, C, A  
(c) A, C, D, B                      (d) B, C, D, A
41. Which of the following universities is an institute of Eminence?
- (a) Central University of Gujrat, Gandhinagar  
(b) University of Hyderabad  
(c) Tezpur University  
(d) Jamia Millia Islamia
42. Given below are two statements
- Statement I :** With Academic Bank of Credit facility in place, a student will be able to customize and design own degree, provided 50% of credit are from the higher education institutions awarding the degree.
- Statement II :** Credits once used or redeemed by a student cannot be used for any other formal purpose of course wavers.
- In light of the above statements, choose the **most appropriate** answer from the options given below
- (a) Both Statement I and Statement II are correct  
(b) Both Statement I and Statement II are incorrect  
(c) Statement I is correct but Statement II is incorrect  
(d) Statement I is incorrect but Statement II is correct

43. In a State government university or Central University, recommendation of the Selection Committee for the recruitment of the faculty is approved by the

- (a) Academic Council
- (b) Executive Council
- (c) Finance Committee
- (d) Chancellor of University

44. Environmental education encompasses the issues of

- A. Resource Consumption
- B. Environmental degradation
- C. Biodiversity loss
- D. Economic empowerment
- E. Climate change and its impact

Choose the correct answer from the options given below:

- (a) A, B, C and D only
- (b) A, B, C and E only
- (c) B, C, D and E only
- (d) B and E only

45. Given below are two statements

**Statement I :** The recommendations of the Radhakrishnan Commission in 1949 resemble those of Calcutta University Commission in 1917.

**Statement II :** The recommendations of the Mudaliar Commission in 1953 resemble those of John Sergent's post-war Educational Development Plan in 1944.

In light of the above statements, choose the **most appropriate** answer from the options given below

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

**Direction for Questions (46 to 50):** Read the given passage and answer the question that follow:

Human beings are not completely free to socially construct their own behaviour. They have a shared biological nature is remarkably uniform throughout the world, given the fact that most contemporary humans outside of Africa descended from a single relatively small group of individuals some fifty thousand years ago. This shared nature does not determine political behaviour, but it frames and limits the nature of institutions that are possible. It also means that human politics is subject to certain recurring patterns of behaviour across time and across cultures. This shared nature can be described in certain propositions like that the human beings never existed in a pre-social state.

The idea that human beings at one time existed as isolated individuals, who interacted either through anarchic violence (Hobbes) or in pacific ignorance of one another (Rousseau), is not correct. Human beings as well as their primate ancestors always lived in kin-based social groups of varying sizes. Indeed, they lived in these social units for a sufficiently long period of time that the cognitive and emotional faculties need to promote social cooperation evolved and became hardwired in their genetic endowments. This means that a rational-choice model of collective action, in which individuals calculate that they will be better off by cooperating with one another, vastly understates the degree of social cooperation that exists in human societies and misunderstands the motives that underlie it.

The next one is the idea of natural human sociability. This principle of kin selection of inclusive fitness states that human beings will act altruistically toward genetic relatives (or individuals believed to be genetic relatives) in rough proportion to their shared genes. The principle of reciprocal altruism says that human beings tend to develop relationships of mutual benefit or mutual harm as they interact with other individuals over time. Reciprocal altruism, unlike kin selection, does not depend on genetic relatedness: it does, however, depend upon repeated, direct personal interaction.

46. The shared biological nature of humans influences

- (a) The division of social constructs

- (b) The nature of institutions in society

- (c) The political behaviour of people

- (d) The formation of social groups

47. Human beings did not exist in a pre-social state due to
- (a) Social kinsfolk
  - (b) Human politics across cultures
  - (c) Institutional limitations
  - (d) Absence of individual independence
48. From the author's point of view, the main characteristic of human society has been
- (a) Anarchic violence
  - (b) Pacific ignorance of one another
  - (c) Kinship based social groups
  - (d) Calculated individual relations
49. The concept of social cooperation involves
- A. Kin selection
  - B. Cognitive faculty
  - C. Emotional detachment
  - D. Reciprocal altruism
- Choose the correct option:
- (a) A and B only
  - (b) B and C only
  - (c) C and D only
  - (d) A and D only
50. The passage recognise the fact that human sociability has
- (a) Political determinants
  - (b) Rational choice model
  - (c) Integrated collective action
  - (d) Genetic linkage

### ANSWER KEY

Q. No.	Answer	Topic's Name	Chapter's Name
1	d	Data Interpretation	Data Interpretation
2	c	Data Interpretation	Data Interpretation
3	d	Data Interpretation	Data Interpretation
4	d	Data Interpretation	Data Interpretation
5	b	Data Interpretation	Data Interpretation
6	a	Education Scheme	Teaching Aptitude
7	a	Teaching Objectives	Teaching Aptitude
8	a	Classroom Behaviour of Teacher	Teaching Aptitude
9	a	Mooc Courses	Teaching Aptitude
10	b	Rules and Regulations	Teaching Aptitude
11	a	General Awareness	Research Aptitude
12	b	Types of Research	Research Aptitude
13	b	Hypothesis	Research Aptitude
14	b	Research Journals	Research Aptitude
15	b	Types of Research	Research Aptitude
16	c	Modern Communication	Communication
17	d	Classroom Communication	Communication
18	b	Barriers of Communication	Communication
19	a	Culture	Communication
20	c	Ways of Presentation	Communication
21	d	Number Series	Mathematical Reasoning
22	d	Alphabet Series	Mathematical Reasoning
23	a	Divide	Mathematical Reasoning
24	a	Average	Mathematical Reasoning
25	c	Profit and Loss	Mathematical Reasoning
26	b	Classical Square of Opposition	Logical Reasoning
27	d	Fallacy in Argument	Logical Reasoning
28	b	Types of Argument	Logical Reasoning
29	d	Indian Logic	Logical Reasoning
30	b	Indian Logic	Logical Reasoning
31	d	Hardware	ICT
32	b	Terminology	ICT
33	a	Input Output Devices	ICT
34	d	Ms Office	ICT

35	c	Malware	ICT
36	b	Pollution	People and Environment
37	b	Atmosphere	People and Environment
38	b	Terminology	People and Environment
39	d	General Awareness	People and Environment
40	b	International Conventions	People and Environment
41	b	General Awareness	Higher Education
42	a	Nep 2020	Higher Education
43	b	General Awareness	Higher Education
44	b	Environmental Education	Higher Education
45	a	Committees on Education	Higher Education
46	b	Inference Based	Reading Comprehension
47	a	Fact Based	Reading Comprehension
48	c	Inference Based	Reading Comprehension
49	d	Fact Based	Reading Comprehension
50	d	Fact Based	Reading Comprehension

**ANSWERS WITH EXPLANATIONS****1. Option (d) is correct.**

Sale of 55AH batteries in,  
2015 = 108  
2021 = 145  
Change = 37  
Change in percent =  $37 \times 100/108$   
= 34.26% or 34% approximately

**2. Option (c) is correct.**

Sale of batteries of all seven years:  
4AH =  $75 + 90 + 96 + 105 + 90 + 105 + 115$   
= 676  
7AH =  $144 + 126 + 114 + 90 + 75 + 60 + 85$   
= 694  
32AH =  $114 + 102 + 75 + 150 + 135 + 165 + 160$  = 901  
34AH =  $102 + 84 + 105 + 90 + 75 + 45 + 100$   
= 601  
55AH =  $108 + 126 + 135 + 75 + 90 + 120 + 145$  = 799

Highest sales is of 32AH battery.

**3. Option (d) is correct.**

Sale of 35AH battery,  
In 2016 = 84,000  
In 2020 = 45000  
Difference =  $84000 - 45000 = 39000$

**4. Option (d) is correct.**

Year	Total sale	Sale of 4AH batteries	Percentage
2017	525	96	18.2
2018	510	105	20
2019	465	90	19.3
2020	495	105	21

Highest percent of sale of 4AH batteries of total sale is in 2020 among the given options.

**5. Option (b) is correct.**

By observing the table, the type of battery for which there was a continuous decrease in sales from 2015 to 2020 is 7AH batteries.

**6. Option (a) is correct.**

NEAT or National Educational Alliance for Technology is an Indian government initiative to promote artificial intelligence in learning, to make the learning more personalized and custom.

Facts about NEAT / Key points:

1. Based on PPP or public private partnership model of the Government of India and Ed-Tech companies of India.
2. Currently the government has launched the third version which is called NEAT 3.0.
3. This is a single platform for learning for the socially and financially backward category of the country.
4. The main objective of this initiative was to promote digitalisation and artificial intelligence in the learning.
5. All India Council for Technical Education is the implementing agency for this initiative.
6. This initiative was supported by new education policy 2020 in which a National Education Technology Forum is established to support and promote technology in learning.
7. Initiative is considered as Bridge between Ed-Tech companies, educational institutions and students.
8. NEAT 3.0 was launched by Union Education Minister Dharmendra Pradhan on 3rd January 2022.

**7. Option (a) is correct.**

Programme is a wider term which includes lessons, courses, units and chapters as well.

**8. Option (a) is correct.**

For making the classroom interactive and effective, a teacher must encourage students

to ask questions that show the attention of students and trial of understanding the content. Asking questions can create curiosity and develop passion for learning among the students.

**9. Option (a) is correct.**

MOOC courses on SWAYAM use the four quadrant model for development of e content for the courses. This model consists of four factors or 4 aspects of the course which are:

1. Video/picture/animation or stimulation
2. Text
3. Self assessment
4. Learn more like website links

**10. Option (b) is correct.**

As per the guidelines or regulations the MOOC courses having video lectures or e content can use a portion of copyrighted video for only 3 minutes or 10%.

For example, if a video on MOOC course is of 50 minutes, then that video should not exceed the copyrighted content for more than three percent as the 10% of it is 5 minutes but as per the condition or fair use guidelines, 3 minutes are less than 5 minutes, or in other words, 3 minutes are less than 10% of the content.

**11. Option (a) is correct.**

Hawthorne effect refers to the change in behavior of a person if the person notices that he is being observed. In research, if the research subject or research problem is changed or the behavior is improved due to change other than experimental simulations, it is called Hawthorne effect.

**12. Option (b) is correct.**

Field study research or field experiments are a base of primary data collection. The advantages of this type of research are as follows:

1. Getting ground level experiments.
2. Generation of primary data.
3. Normal and natural behavior of the data and subject as well.
4. Reality based experiments.

**13. Option (b) is correct.**

Null hypothesis is shown as H<sub>0</sub> and alternative hypothesis is shown as H<sub>1</sub>.

Base of differentiation	Null hypothesis	Alternative hypothesis
Meaning	This hypothesis is neutral. No relationship is assumed among the variables	This is an assumption or pre determined results of the researcher.
Testing	It is tested	It is not tested. It gets accepted or rejected on the basis of null hypothesis testing
Statement	Null statement	Positive or negative statement
Shown as	H <sub>0</sub>	H <sub>1</sub>
Relationship	If the null hypothesis proved false.	Alternative hypotheses are accepted automatically.
Example	"There is no relationship between the sun and the growth of plants."	"Plants get positive growth with the help of sunlight."

**14. Option (b) is correct.**

SCOPUS is the database of peer reviewed journals.

- It is focused on independent journals in various fields of research.
- Main Fields of SCOPUS are science, social science, technology, medicine etc.
- Research journals of SCOPUS are in approximately 40 languages.

**15. Option (b) is correct.**

**Positivist approach:** Positivist research or positive approach is the old concept. It says that only factual knowledge gained through observation including measurement is reliable and everything can be studied on the basis of data. This approach supports the Quantitative approach.

**Post positivist approach:** Post positive is the next or modern approach of learning or

research. It says that every theory or any theory is relevant only if they have supported action. It says that many theories and results can be based on assumptions and inferences that support qualitative aspects as well. It says that there are lots of theories that govern the world and they can be identified by using scientific methods.

Phenomenological research, ethnographic research and action research are some examples of post positivist approach to research.

**16. Option (c) is correct.**

Modern communication includes the variety of Technologies that are developed with time. Internet technology, social media, video conferencing are some examples of modern communication. These communications are the result of technological convergence. Hence, modern communication revolution is the result of Technological development.

**17. Option (d) is correct.**

Effective classroom communication refers to the communication in classroom in which interaction between teacher and students is active and the resources are being used on their optimum level. The results of effective classrooms can be as follows:

- Effective teaching
- Attraction of learners
- Interesting learning
- Interaction between teacher and students
- Optimum use of resources
- Optimum learning
- Permanent learning

**18. Option (b) is correct.**

Jargon, pre judgment and cultural background can be a barrier in communication related to understanding the message.

**19. Option (a) is correct.**

The first statement that knowledge is a form of cultural capital for all purposes is correct because the development of a culture or the cultural preservations are possible and easy with the help of knowledge.

Second statement that communication media makes cultural capital a form of illimitable property is also correct.

**20. Option (c) is correct.**

Concepts of presentation	Characteristics
Text	Micro data
Disclosure	Micro exchange
Connotation	Order of significance
Myth	Subjective invention

**21. Option (d) is correct.**

The numbers are prime numbers in the set of numbers given in the question. All the sets in option have at least one divisible number except option D.

**22. Option (d) is correct.**

All other options can be used in words with relation.

EIWNTR = WINTER  
 UMRSM = SUMMER  
 PIGRSN = SPRING  
 LCUOD = CLOUD  
 Option D is odd.

**23. Option (a) is correct.**

$0.07/350$   
 By multiplying both sides with 100  
 $= 7/35000$   
 $= 0.0002$

**24. Option (a) is correct.**

Let the expenses done by 6<sup>th</sup> person =  $x$   
 Expenses by 5 persons =  $150 \times 5 = 750$   
 Average of all 6 =  $(750 + x)/6$   
 Expenses by 6<sup>th</sup> person is ₹ 80 more than average expenses by all 6 persons.  
 $x - [(750 + x)/6] = 80$   
 By solving,  
 $5x = 1230$   
 $x = 246$

Total expenses by all 6 persons =  $246 + 750$   
 $= ₹ 996$

**25. Option (c) is correct.**

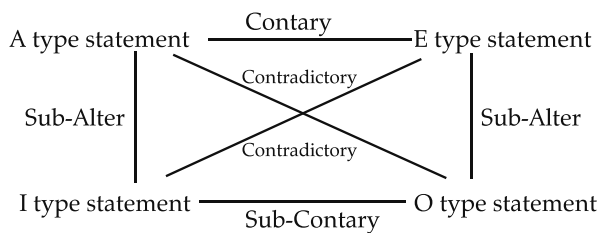
Selling price of 30 fans = purchase price of 25 fans. (given)

Let the purchase price of one fan = ₹1  
 Purchase price of 25 fans = ₹25  
 Purchase price of 30 fans = ₹30  
 Selling price of 30 fans = ₹25  
 Loss = CP – SP  
 $= 30 - 25$   
 $= 5$

Loss in percent =  $(5 \times 100)/30$

$16.67\%$  or  $16\frac{2}{3}\%$

26. **Option (b) is correct.**



- The given statement is an I type statement or particularly positive statement.
- A type sentence: All S are P ( universally positive)
- E type: All S are not P ( universally negative)
- I type: Some S are P (particularly positive)
- O type: Some S are not P (particularly negative)
- **Contradictory** statements are A and O, E and I. If one statement is true the another will be false and the one statement is false the another will be true.
- **Contrary** statements are A and E. These statements cannot be true at the same time but can be False at the same time. If one is false the another will be immediately true but the one is true then the other is doubtful or undetermined.
- **Sub country** statements are I and O. Both cannot be false together but can be true together. If one is false the other will be true immediately but if the one is true the other will be undetermined.
- **Sab alteration** statements are A and I, E and O. If the universal statement is true the particular statement will be false.
  - If the universal statement is false the particular will be undetermined.
  - If particular opposition is false Universal preposition will be false.
  - If a particular statement is true the universal statement will be doubtful or undetermined.

27. **Option (d) is correct.**

Fallacy refers to the error in reasoning that invalidates the argument.

Policy aur hetvabhasa is of two types formal and informal.

Formal fallacy is related to invalid structure.

Informal policy is related to incorrect or in relevant premises.

Petito principii, Begging the question and circular arguments are the fallacies in which the conclusion is assumed within the premises.

28. **Option (b) is correct.**

Analogical arguments are related with the examples or if a knowledge or argument is done on the basis of some example or inference, it is called analogical argument. This argument is a comparison between two objects . For example, we should not blame the media for the bad news or facts as we do not blame the weather reports telling us that the weather will be bad.

Inductive reasoning refers to going particular to general or from example to theory. As analogical reasoning is similar and we can say that analogical arguments are Inductive in nature.

29. **Option (d) is correct.**

According to classical Indian School of logic, it is must to offer an example in argument or inference, without argument there is no Conclusion and without conclusion there is no knowledge. In Upmana Praman or inference there must be a base or argument for drawing a conclusion.

Example shows that there is at least one existent object or case in the world in which the middle and major term coexist is true.

30. **Option (b) is correct.**

According to the classical Indian School of logic there are 6 types of pramanas or means of knowledge. They are:

1. **Pratyaksh or perception:** This is the direct means of knowledge by sense organs. For example gaining knowledge by seeing, by smell, by hearing etc.
2. **Comparison or upmana:** This is the means of knowledge with the help of previous knowledge. For example, if a boy sees smoke on Hill and inferences that there must be a fire on the basis of knowledge that he had seen fire in the kitchen that has smoke. This way of gaining knowledge or getting known is comparison or upamana.
3. **Shabd or verbal testimony:** When a person gets knowledge or learning with the verbal means either written or spoken by some person of authority is the way of getting knowledge by Shabd Pramana.

4. **Arthapatti or Postulation:** This pramana includes getting knowledge with the help of assumptions. For example if Ram says that he does not eat food in the day but we can see that he is fat and we assume that he must be eating at night.
5. **Anupalabdhi or non apprehension:** This perception helps to gain knowledge with the help of non-existence of the things. Many classical schools have not given the status of valid means of getting knowledge to this Pramana.
6. **Anumana or inference:** Another way of gaining knowledge or means of knowledge is anumana in which a conclusion is inferred on the basis of premises or prior knowledge.
31. **Option (d) is correct.**  
 Static RAM:
- Made up of flip flops
  - Comparatively fast
  - Large in size
  - Low and capacity
  - Consumes comparatively more power
  - Expensive as compared to dynamic RAM
- Dynamic RAM:
- Slow
  - Small in size
  - High capacity
  - Consumes comparatively less power
  - Less expensive
32. **Option (b) is correct.**  
 Compressing a data file refers to decrease in space or to make the file to use smaller or less space on the disc. The purpose of compressing by shrinking the storage of files is to occupy less storage space.
33. **Option (a) is correct.**
- Input devices are used to give instruction to the computer. Following are some common input devices:
    1. Mouse
    2. Keyboard
    3. Microphone
    4. Joystick
    5. Trackball
    6. Scanner
  - Output devices are used to get results or output from a computer. Some common output devices are;
    1. Monitor
    2. Printer
    3. Projector
  - Touch screen is an input-output device.
34. **Option (d) is correct.**  
 Linking and embedding is a function in microsoft which is used to link files.
35. **Option (c) is correct.**  
 Trojan Horse is a type of Malware that shows itself as legitimate code. This Malware can be seen as useful but can actually cause damage if once installed in the computers or run by a user. Attackers are able to carry out any action that user could perform.  
 A Hoax is a false warning about viruses in the computer.
36. **Option (b) is correct.**
- | Area             | Noise limit (day time) | Noise limit (night level) |
|------------------|------------------------|---------------------------|
| Residential area | 55                     | 45                        |
| Industrial area  | 75                     | 70                        |
| Commercial area  | 65                     | 55                        |
| Silent zone      | 50                     | 40                        |
- Educational areas and hospitals are included in silent zones.
37. **Option (b) is correct.**  
 The percent increase in carbon dioxide concentration in the atmosphere from pre industrial time to today is approximately 50%.
38. **Option (b) is correct.**  
 NOAEL stands for No Observed Adverse Effect Level. This is the highest non zero dose at which no toxic effect is observed in study on animals.
39. **Option (d) is correct.**  
 It cannot be said that Hybrid electric vehicles fuel running cost is lesser than electric vehicles. Hence, the assertion is incorrect.  
 Hybrid electric vehicles have both internal combustion engines and an on board electric power generation system. Hence, the reason is correct.

40. **Option (b) is correct.**

International Convention	Year
Montreal protocol	1987
Paris agreement	2015
Kyoto protocol	1997
Rio summit	1992

**Montreal Protocol:**

- Related to Ozone depletion substances.
- Held on 16<sup>th</sup> September, 1987.
- It was stated that all nations should not be treated equally.
- Target was to Eliminate 98% of controlled ODS.
- Equal but different responsibilities were decided by countries.
- MOP or meeting of parties is the governance body of this protocol.
- Chlorofluorocarbons were considered the most bounded ozone depletion substance.
- Multilateral fund was set up in 1991 to help developing countries. It was set up by 4 organizations.
- This is the world's most successful international convention.

**Kyoto Protocol:**

- The Kyoto Protocol of 1997 is one of the landmark agreements of Earth Summit 1992.

**Rio Summit:**

- It was held in Rio de Janeiro in Brazil in 1992.
- It is famously called Earth Summit 1992.
- Held by the United Nation conference on environment and development or UNCED.
- It had three non binding documents named as declaration on environment and development, agenda 21 and forest principles.
- Rio has 27 total principals.
- Agenda 21 was replaced by "Agenda 2030" in 2015.
- Some legally binding agreements delivered from the Rio summit.

**Paris Agreement:**

- The Paris agreement is the Cop (conference of parties) 21 of the United Nations Framework convention on climate change.

- It was held in 2015, enforced from 2016 and started in 2020.
- It has legally binding agreements
- It deals with greenhouse gasses emission, mitigation, adoption and Finance.
- 20 20 20 formula or mechanism would be held every 5 years.
- 20% reduction of greenhouse gasses, 20% savings of energy and 20% increase of Renewable Energy share.

41. **Option (b) is correct.**

- Institute of Eminence is a recognition scheme for higher educational institutes in India which is set up by universities grant commission in 2017.
- The aim of this scheme is to help the Institutions to become world class teaching and Research institutions.
- The plan for this scheme was to declare 20 institutes as Institute of eminence from which 12 have been declared.

42. **Option (a) is correct.**

- The Academic Bank of credit facility is a new concept given a new education policy of 2020.
- By this scheme the student will be able to customize and design on degree with subjects.
- After completing 1 year, a student will get a Graduation certificate.
- After completing 2 years of graduation, students will get a graduation diploma.
- After completing 3 years, the student will get a graduation degree.
- After completing 4 years of higher education, students will get a graduation research certificate.
- 5 years of Higher Education will enable a student to get a post degree.
- Students will have the facility to select any subject from any stream. The streams will have no value because there will be no specification of subjects of the stream. For example, students can select Biology with commerce.

43. **Option (b) is correct.**

In a government university, Recommendation of selection committee for the recruitment of faculty is approved by Executive Council.

**44. Option (b) is correct.**

Environmental education includes the following:

1. Resources consumption
2. Environmental degradation
3. Biodiversity loss
4. Climate change and its impact
5. Energy resources
6. Conservation and protection of environment

**45. Option (a) is correct.**

- The recommendations of the Radhakrishnan Commission were similar to the Calcutta University commission of 1917.
- The commentation of the Mudaliar commission of 1953 resemble the recommendations of John surgeons post war educational development plan of 1994.
- Radhakrishnan Commission was set up in 1948 which is also known as University Education Commission.
- This is the first educational Commission after independence.
- It suggested various recommendations for Secondary And Higher Education. It was set up by UGC.
- Mudaliar Commission was set up in 1952. It is also known as Secondary Education Commission.
- It suggested 3 years secondary and 4 years higher education system and multipurpose schools.

- Vocational training, demographic education with individual differences, home science study for girls, were some main recommendations of the commission.
- The chairman of Vidyalaya Commission was Laxman Swami Mudaliar.

**46. Option (b) is correct.**

According to the given passage the biological nature of humans influences the nature of institutions in the society because those Institutions are run by the human being of the society.

**47. Option (a) is correct.**

The given passage says that ancestors always lived in kin-Bass social groups of varying sizes. This states that human is and was always a part of society as human beings did not exist in a pre social stays due to social kinsfolk.

**48. Option (c) is correct.**

According to the given passage, the author has a point of view that human society has always been kinship Based social groups from the initial stages.

**49. Option (d) is correct.**

The concept of Social Corporation involves select and reciprocal altruism.

**50. Option (d) is correct.**

The passage recognises the fact that human stability has the linkage from Genetics or genetic linkage.