

UGC NET PAPER-1

GENERAL APTITUDE

Solved Paper July 2018

Time Allotted: 1 Hour

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 responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.
Example: where (c) is the correct response.
- Your responses to the items are to be indicated in the **Answer Sheet**.
- Use of any calculator or log table etc., is prohibited.**
- Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Which of the following set of statements best describes the nature and objectives of teaching?

Indicate your answer by selecting from the code.

- Teaching and learning are integrally related.
- There is no difference between teaching and training.
- Concern of all teaching is to ensure some kind of transformation in students.
- All good teaching is formal in nature.
- A teacher is a senior person.
- Teaching is a social act whereas learning is a personal act.

- (a) 1, 2 and 4 (b) 2, 3 and 5
(c) 1, 3 and 6 (d) 4, 5 and 6

2. Which of the following learner characteristics is highly related to effectiveness of teaching?

- (a) Prior experience of the learner
(b) Educational status of the parents of the learner
(c) Peer groups of the learner
(d) Family size from which the learner comes.

3. 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 (Method of teaching)	Set-II (Basic requirements for success/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. | (i) | (ii) | (iii) | (iv) |
| 2. | (ii) | (iii) | (iv) | (v) |
| 3. | (iii) | (v) | (ii) | (i) |
| 4. | (iv) | (ii) | (i) | (iii) |

4. From the list of evaluation procedures given below identify those which will be called 'formative evaluation'. Indicate your answer by choosing from the code:

- A teacher awards grades to students after having transacted the course work.
- During interaction with students in the classroom, the teacher provides corrective feedback.
- The teacher gives marks to students on a unit test.
- The teacher clarifies the doubts of students in the class itself.

5. The overall performance of a student is reported to parents at every three months interval.
6. The learner's motivation is raised by the teacher through a question-answer session.

Code:

- (a) 1, 2 and 3 (b) 2, 3 and 4
 (c) 1, 3 and 5 (d) 2, 4 and 6

5. **Assertion (A):** All teaching should aim at ensuring learning.

Reason (R): All learning results from teaching.

Choose the correct answer from the following code:

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
 - (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
 - (c) (A) is true, but (R) is false.
 - (d) (A) is false, but (R) is true.
6. 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 (Research types)	Set-II (Characteristics)
(a) Fundamental research	(i) Finding out the extent of perceived impact of an intervention
(b) Applied research	(ii) Developing an effective explanation through theory 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. | (ii) | (iv) | (iii) | (i) |
| 2. | (v) | (iv) | (iii) | (ii) |
| 3. | (i) | (ii) | (iii) | (iv) |
| 4. | (ii) | (iii) | (iv) | (v) |

7. Which of the sets of activities best indicate the cyclic nature of action research strategy?
 - (a) Reflect, Observe, Plan, Act
 - (b) Observe, Act, Reflect, Plan
 - (c) Act, Plan, Observe, Reflect
 - (d) Plan, Act, Observe, Reflect
8. Which of the following sequences of research steps is nearer to scientific method?
 - (a) Suggested solution of the problem, Deducing the consequences of the solution, Perceiving the problem situation, Location of the difficulty and testing the solutions.
 - (b) Perceiving the problem situation, Locating the actual problem and its definition, Hypothesizing, Deducing the consequences of the suggested solution and Testing the hypothesis in action.
 - (c) Defining a problem, Identifying the causes of the problem, Defining a population, Drawing a sample, Collecting data and Analysing results.
 - (d) Identifying the causal factors, Defining the problem, Developing a hypothesis, Selecting a sample, Collecting data and arriving at generalizations and Conclusions.
9. The problem of 'research ethics' is concerned with which aspect of research activities?
 - (a) Following the prescribed format of a thesis
 - (b) Data analysis through qualitative or quantitative techniques
 - (c) Defining the population of research
 - (d) Evidence based research reporting
10. In which of the following activities, potential for nurturing creative and critical thinking is relatively greater?
 - (a) Preparing research summary
 - (b) Presenting a seminar paper
 - (c) Participation in research conference
 - (d) Participation in a workshop

Direction for question 11 to 15:

Read the following passage carefully and answer questions.

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 the 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.

11. According to the above passage, which of the following are indicative of the fourth dimension?
1. Aspirations of people
 2. Modern day dynamism
 3. Economy in the global context
 4. Strategic interests

Code:

- (a) 1, 2 and 3 (b) 2, 3 and 4
 (c) 1, 3 and 4 (d) 1, 2 and 4

12. More productive employment demands:

- (a) Pervasive use of technology
- (b) Limiting competitive market place
- (c) Geo-political considerations
- (d) Large industries

13. Absence of technology would lead to:

1. Less pollution
2. Wastage of precious natural resources
3. Low value addition
4. Hurting the poorest most

Code:

- (a) 1, 2 and 3 (b) 2, 3 and 4
 (c) 1, 2 and 4 (d) 1, 3 and 4

14. The advantage of technological inputs would result in:

- (a) Unbridled technological growth
- (b) Importing plant machinery
- (c) Sidelining environmental issues
- (d) Lifting our people to a life of dignity

15. Envisioning a developed India requires:

- (a) Aspiration to become a major economic player
- (b) Dependence upon projects designed abroad
- (c) Focus on short-term projects
- (d) Development of core technological strengths

16. Differentiation between acceptance and non-acceptance of certain stimuli in classroom communication is the basis of:

- (a) selective expectation of performance
- (b) selective affiliation to peer groups
- (c) selective attention
- (d) selective morality

- 17. Assertion (A):** The initial messages to students in the classroom by a teacher need not be critical to establish interactions later.
- Reason (R):** More control over the communication process means more control over what the students are learning.
- Code:**
- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
 (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
 (c) (A) is true, but (R) is false.
 (d) (A) is false, but (R) is true.
- 18. Assertion (A):** To communicate well in the classroom is a natural ability.
- Reason (R):** Effective teaching in the classroom demands knowledge of the communication process.
- Code:**
- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
 (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
 (c) (A) is true, but (R) is false.
 (d) (A) is false, but (R) is true.
- 19. Assertion (A):** Classroom communication is a transactional process.
- Reason (R):** A teacher does not operate under the assumption that students' responses are purposive.
- Select the correct code for your answer:
- (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.
- 20.** Which of the following set of statements is correct for describing the human communication process?
1. Non-verbal communication can stimulate ideas.
 2. Communication is a learned ability.
 3. Communication is not a universal panacea.
 4. Communication cannot break-down.
 5. More communication means more effective learning by students.
- 6.** Value of what is learnt through classroom communication is not an issue for students.
- Code:**
- (a) 1, 3, 5 and 6 (b) 2, 4, 5 and 6
 (c) 1, 2, 3 and 4 (d) 1, 4, 5 and 6
- 21.** The next term in the series
 -1, 5, 15, 29, ?, ...
 is:
- (a) 36 (b) 47
 (c) 59 (d) 63
- 22.** The next term in the series
 ABD, DGK, HMS, MTB, SBL, ?, ...
 is:
- (a) ZKU (b) ZCA
 (c) ZKW (d) KZU
- 23.** If VARANASI is coded as WCUESGZQ, then the code of KOLKATA will be:
- (a) LOQOZEH (b) HLZEQQ
 (c) ZELHOQO (d) LQOOFZH
- 24.** Introducing Rakesh to her husband, a woman said, "His brother's father is the only son of my grandfather". The woman is related to Rakesh as:
- (a) Aunt (b) Mother
 (c) Sister (d) Daughter
- 25.** Two numbers are in the ratio 2:5. If 16 is added to both the numbers, their ratio becomes 1:2. The numbers are:
- (a) 16, 40 (b) 20, 50
 (c) 28, 70 (d) 32, 80
- 26.** Superiority of intellect depends upon its power of concentration on one theme in the same way as a concave mirror collects all the rays that strike upon it into one point.
 What type of reasoning is entailed in the above statement?
- (a) Mathematical (b) Psychological
 (c) Analogical (d) Deductive
- 27.** Given below are two premises (A and B). Four conclusions are drawn from them. Select the code that states validly drawn conclusion(s) (taking the premises individually or jointly).
- Premises:**
- (A) Most of the dancers are physically fit.
 (B) Most of the singers are dancers.

Conclusions:

1. Most of the singers are physically fit.
2. Most of the dancers are singers.
3. Most of the physically fit persons are dancers.
4. Most of the physically fit persons are singers.

Code:

- (a) 1 and 2 (b) 2 and 3
 (c) 3 and 4 (d) 1 and 4

28. Which one among the following is a presupposition in inductive reasoning?

- (a) Law of identity
 (b) Unchangeability in nature
 (c) Harmony in nature
 (d) Uniformity of nature

29. If the proposition 'domestic animals are hardly ferocious' is taken to be false, which of the following proposition/propositions can be claimed to be certainly true? Select the correct Code:

Propositions:

1. All domestic animals are ferocious.
2. Most of the domestic animals are ferocious.
3. No domestic animal is ferocious.
4. Some domestic animals are non-ferocious.

Code:

- (a) 1 and 2 (b) 1 only
 (c) 3 and 4 (d) 2 only

30. Which one of the following statements is not correct in the context of the Venn diagram method?

- (a) It is a method of testing the validity of arguments.
 (b) It represents both the premises of a syllogism in one diagram.
 (c) It requires two overlapping circles for the two premises of a standard-form categorical syllogism.
 (d) It can be used to represent classes as well as propositions.

Direction for questions 31 to 35:

The table below embodies data on the production, exports and per capita consumption of rice in country P for the five years from 2012 to 2016. Answer questions based on the data contained in the table.

Year-wise Production, Exports and Per Capita Consumption of Rice			
Year	Production (in million kg)	Exports (in million kg)	Per Capita Consumption (in kg)
2012	186.5	114	36.25
2013	202	114	35.2
2014	238	130	38.7
2015	221	116	40.5
2016	215	88	42

Where, Per Capita Consumption = $(\text{Consumption in million kg}) \div (\text{Population in million})$ and consumption (in million kg) = $\text{Production} - \text{Exports}$.

31. The percentage increase in the consumption of rice over the previous year was the highest in which year?

- (a) 2013 (b) 2014
 (c) 2015 (d) 2016

32. What is the population of the country in the year 2014 (in million)?

- (a) 2.64 (b) 2.72
 (c) 2.79 (d) 2.85

33. The ratio of exports to consumption in the given period was the highest in the year:

- (a) 2012 (b) 2013
 (c) 2014 (d) 2015

34. In which year, the population of the country was the highest?

- (a) 2013 (b) 2014
 (c) 2015 (d) 2016

35. What is the average consumption of rice (in million kg) over the years 2012-2016?

- (a) 104 (b) 102.1
 (c) 108 (d) 100.1

36. Which of the following statements, regarding the term ICT is/are TRUE?

P: ICT is an acronym that stands for Indian Classical Technology.

Q: Converging technologies that exemplify ICT include the merging of audio-visual, telephone and computer networks through a common cabling system.

- (a) P only (b) Q only
 (c) P and Q (d) Neither P nor Q

37. A new Laptop has been produced that weighs less, is smaller and uses less power than previous Laptop models.

Which of the following technologies has been used to accomplish this?

- (a) Universal Serial Bus Mouse
 (b) Faster Random Access Memory
 (c) Blu Ray Drive
 (d) Solid State Hard Drive

38. Given the following email fields, which of the email addresses will 'swami' be able to see when he receives the message?

To...	ram@test.com
Cc...	raj@test.com; ravi@test.com
Bcc...	swami@test.com; rama@test.com

- (a) ram@test.com
 (b) ram@test.com; raj@test.com; ravi@test.com
 (c) ram@test.com; rama@test.com
 (d) ram@test.com; rama@test.com; raj@test.com; ravi@test.com

39. Put the following units of storage into the correct order, starting with the smallest unit first and going down to the largest unit:

1. Kilobyte
2. Byte
3. Megabyte
4. Terabyte
5. Gigabyte
6. Bit

Give your answer from the following code:

- (a) 6, 2, 1, 3, 4, 5 (b) 6, 2, 1, 4, 5, 3
 (c) 6, 2, 1, 3, 5, 4 (d) 6, 2, 1, 4, 3, 5

40. With regard to computer memory, which of the following statement(s) is/are TRUE?

P: Read Only Memory (ROM) is 'volatile' memory.

Q: Random Access Memory (RAM) is 'volatile' memory.

R: Secondary Memory is 'volatile' memory.

- (a) P only (b) Q only
 (c) P and Q only (d) P and R only

41. 'Fly ash' produced in thermal power plants is an ecofriendly resource for use in:

1. agriculture as micro-nutrient
2. wasteland development

3. dam and water holding structures
4. brick industry

Choose the correct answer from the code given below:

- (a) 1, 2 and 4 (b) 2, 3 and 4
 (c) 1, 3 and 4 (d) 1, 2, 3 and 4

42. Which of the following types of natural disasters has no definite beginning and end?

- (a) Earthquakes (b) Landslides
 (c) Hurricanes (d) Droughts

43. **Assertion (A):** Indoor air pollution is a serious health hazard.

Reason (R): The dispersal of air pollutants is rather limited in indoor environment.

Choose the correct answer from the code 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 and (R) is false.
 (d) Both (A) and (R) are false.

44. In terms of their contribution to the total power generation in India, identify the correct sequence of energy sources - Thermal Power Plants (TPP), Large Hydropower Projects (LHP), Nuclear Energy (NE) and Renewable Energy (RE) which includes solar energy, wind energy, biomass and small hydropower projects.

- (a) TPP > RE > LHP > NE
 (b) TPP > LHP > RE > NE
 (c) LHP > TPP > RE > NE
 (d) LHP > TPP > NE > RE

45. Which of the following is considered as a major source of pollution in rivers of India?

- (a) Unregulated small scale industry
 (b) Untreated sewage
 (c) Agricultural run-off
 (d) Thermal power plants

46. India has the largest Higher Education System in the World after:

1. The United States of America
2. Australia
3. China
4. United Kingdom (U.K.)

Select the correct answer from the code given below:

- (a) 1, 2, 3 and 4 (b) 1, 2 and 3
 (c) 1, 3 and 4 (d) 1 and 3 only

47. Prime Minister Research Fellowship is for students pursuing Ph.D. programme in:
- (a) State and Central Universities
 - (b) Central Universities, IISc, IITs, NITs, IISERs and IIITs
 - (c) IISc, IITs, NITs, IISERs, IIITs, State and Central Universities
 - (d) IITs and IISc

48. Leader of the Opposition is a member of committees which select:
- 1. the Central Information Commissioner
 - 2. the Central Vigilance Commissioner
 - 3. the Chairperson of National Human Rights Commission
 - 4. the Chairperson of National Commission for Women

Select the correct answer from the code given below:

- (a) 1, 2, 3 and 4
- (b) 1, 2 and 3
- (c) 1, 3 and 4
- (d) 1, 2 and 4

49. Which of the following statements are correct about gender budgeting?
- 1. It is a separate budget addressing the specific needs of women.

- 2. It assesses the impact of the government budget on women.
- 3. It is an accounting exercise.
- 4. It is another budgeting innovation.

Select the correct answer from the code given below:

- (a) 2 and 4 only
- (b) 1 and 4 only
- (c) 1, 3 and 4
- (d) 2, 3 and 4

50. Which of the following are the barriers to citizen-centric administration in India?

- 1. Wooden and inflexible attitude of the civil servants
- 2. Ineffective implementation of laws and rules
- 3. Awareness of rights and duties of citizens
- 4. Lack of job opportunities for the youth

Select the correct answer from the code given below:

- (a) 1, 2, 3 and 4
- (b) 1, 2 and 3
- (c) 1, 2 and 4
- (d) 1 and 2 only

□□□

Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	c	Objectives of teaching	Teaching aptitude
2	a	Learner characteristics	Teaching aptitude
3	c	Teaching methods	Teaching aptitude
4	d	Formative evaluation	Teaching aptitude
5	c	Factors affecting teaching	Teaching aptitude
6	a	Types of research	Research aptitude
7	d	Action research	Research aptitude
8	c	Steps of research	Research aptitude
9	d	Research ethics	Research aptitude
10	d	Article writing	Research aptitude
11	c	Fact based	Comprehension
12	a	Fact based	Comprehension
13	b	Fact based	Comprehension
14	d	Fact based	Comprehension
15	d	Inference based	Comprehension
16	c	Classroom communication	Communication
17	d	Classroom communication	Communication
18	d	Classroom communication	Communication
19	c	Classroom communication	Communication
20	a	Effective communication	Communication
21	b	Number series	Mathematical aptitude
22	c	Letter series	Mathematical aptitude
23	d	Codes	Mathematical aptitude
24	c	Relationships	Logical reasoning
25	d	Ratios	Mathematical aptitude
26	c	Analogies	Logical reasoning
27	a	Syllogism	Logical reasoning
28	d	Inductive reasoning	Logical reasoning
29	a	Proposition	Logical reasoning
30	c	Venn diagram method	Logical reasoning
31	b	Data interpretation	Data interpretation
32	c	Data interpretation	Data interpretation
33	a	Data interpretation	Data interpretation
34	d	Data interpretation	Data interpretation
35	d	Data interpretation	Data interpretation
36	b	Terminology	Information and communication technology
37	d	Terminology	Information and communication technology
38	b	Email	Information and communication technology
39	c	Terminology	Information and communication technology
40	b	Terminology	Information and communication technology

41	d	Anthropogenic activities	People, development and environment
42	d	Natural hazards	People, development and environment
43	b	Air pollution	People, development and environment
44	a	Energy resources	People, development and environment
45	b	Water pollution	People, development and environment
46	d	Evolution of higher education in post-independence India	Higher education system
47	d	Learning programmes in India	Higher education system
48	b	Governance and education	Higher education system
49	a	Governance and education	Higher education system
50	d	Governance and education	Higher education system

UGC NET PAPER-1

GENERAL APTITUDE

Solved Paper July 2018

ANSWERS WITH EXPLANATIONS

- Option (c) is correct.**

Teaching is a social process which is directly related to learning. The aim of teaching is always to bring some change in the behaviour of students.
- Option (a) is correct.**

Previous experience of the learner determines the level of understanding in the learner. It also becomes the basis for further learning.
- Option (c) is correct.**

Lecturing will involve delivering the content in the language which is easy to understand.
Discussion in groups on any topic is usually an interaction among participants on a given topic to create an insight.
Brainstorming helps in identifying the various alternative ideas which can be considered.
Programmed instructional procedure is a type of predetermined sequence of learning material which learners can access as per their own speed of understanding.
- Option (d) is correct.**

Formative assessment is the bunch of evaluation tools used by the teacher/teachers during the learning process, to assess the understanding level of students and to modify the techniques as per the requirements of learners. The constructive feedback can also be provided to learners based on the assessment. This type of evaluation helps in motivating learners for further learning process and clarifying their doubts during the lectures itself.
- Option (c) is correct.**

The basic aim of teaching is to ensure effective learning but learning can occur from various other sources apart from teaching like personal experience, observation, modelling, etc.
- Option (a) is correct.**

Fundamental research is the research conducted for developing a theory and explanation for the same.
Applied research is conducted for understanding the practical implications of any theory or concept by applying it in various situations.
Action research is research conducted to find solutions to an existing problem or to conduct an experiment/survey to learn from practical implications.
Evaluation research is a study conducted to understand the impact or result of any tool implemented.
- Option (d) is correct.**

The steps of action research are plan, act, observe and reflect.
- Option (c) is correct.**

The steps of scientific research involve:

 1. Defining problem
 2. Hypothesis formulation
 3. Collecting data
 4. Analysing data
 5. Hypothesis testing
 6. Generalization of conclusion
- Option (d) is correct.**

Research ethics is significant while reporting the results as any interpretation without proper evidence can be misleading.
- Option (d) is correct.**

Participation in a workshop promotes creative and innovative thinking in learners more in comparison to other given options. Learners are encouraged to identify the various aspects of any field of study.
- Option (c) is correct.**

The fourth dimension which is time is behind the changes in the aspirations of people,

strategic interest and economy in global context.

12. Option (a) is correct.

A widespread use of technology is the key for productive employment and upgrading human skills. Technological advancement is the only way to ensure overall development of people.

13. Option (b) is correct.

The absence of technology will lead to lower production, less value addition, wastage of valuable resources. This will be harmful for the most poorest of the country.

14. Option (d) is correct.

Technological inputs will result in the improvement in the quality of life of our people. They will get a life of dignity.

15. Option (d) is correct.

Development of our technological strengths in our industries is a necessity for envisioning a developed India.

16. Option (c) is correct.

Selective attention is focusing on one message while ignoring others. It may be listening attentively to what the teacher is saying while avoiding the talkative friend.

17. Option (d) is correct.

Effectively controlling what is being communicated in the classroom will give teachers an opportunity to ensure students are learning the necessary contents. The initial part of any message will help in establishing the basis of further communication.

18. Option (d) is correct.

A teacher should have a good understanding of the communication process to ensure students are able to learn effectively. Communication skills can be learned through practice. It is not a natural skill.

19. Option (c) is correct.

Classroom communication is a sequence of activities that is performed in a way to ensure learning in students. Teachers will always assume that students have a purpose to communicate in a classroom.

20. Option (a) is correct.

Communication can breakdown if not received effectively.

21. Option (b) is correct.

The difference between the terms of the series $-1, 5, 15, 29$ is:

$$\begin{array}{ccccccccc} (-)1 & & 5 & & 15 & & 29 & & 47 \\ & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & \\ & 6 & & 10 & & 14 & & 18 & \\ & & \underbrace{\hspace{1cm}} & & \underbrace{\hspace{1cm}} & & \underbrace{\hspace{1cm}} & & \\ & & 4 & & 4 & & 4 & & \end{array}$$

The difference between terms of series $6, 10, 14$ is 4.

Hence, adding 4 to 14, it will be 18.

Adding 18 to 29, it will be 47.

22. Option (c) is correct.

The difference between letters is increasing with each word. Considering alphabets are written in a series:

A 0 B 1 D

D 2 G 3 K

H 4 M 5 S

M 6 T 7 B

S 8 B 9 L

Z 10 K 11 W

23. Option (d) is correct.

The alphabets are coded with the gaps of sequence of number series.

V 0 W

A 1 C

R 2 U

A 3 E Sequence as increase.

Hence, KOLKATA will be LQOOFZH.

24. Option (c) is correct.

Brother of Rakesh will be the brother of the Women too. As their father is the only son of her grandfather.

25. Option (d) is correct.

Number 1 = $2A$

Number 2 = $5A$

$$\frac{2A + 16}{5A + 16} = \frac{1}{2}$$

$$4A + 32 = 5A + 16$$

$$A = 16$$

$$\therefore \text{1st Number} = 32$$

$$\text{2nd Number} = 80$$

26. Option (c) is correct.

Analogical reasoning tries to identify the common pattern between two situations for better understanding.

- 27. Option (a) is correct.**
 Most of the singers are dancers and most of the dancers are physically fit.
 Hence, most of the singers are physically fit and most of the dancers are singers.
- 28. Option (d) is correct.**
 Inductive reasoning is based on the presupposition that anything that occurs in the future is based on the past events. Hence, the law of uniformity of nature applies here.
- 29. Option (a) is correct.**
 If "Domestic animals are hardly ferocious" is false, then we can assume that all domestic animals are ferocious or most of the domestic animals are ferocious.
- 30. Option (c) is correct.**
 Venn diagram is used to test validity of statements. It represents both the premises in one diagram and it can represent classes as well as prepositions.
- 31. Option (b) is correct.**
 Percentage increase in consumption in 2013 = $\frac{1.05}{36.25} \times 100 = 2.8\%$
 Percentage increase in consumption in 2014 = $\frac{3.5}{35.2} \times 100 = 9.9\%$
 Percentage increase in consumption in 2015 = $\frac{1.8}{38.7} \times 100 = 4.6\%$
 Percentage increase in consumption in 2016 = $\frac{1.5}{40.5} \times 100 = 3.7\%$
- 32. Option (c) is correct.**
 Consumption (million kg) in 2014 = 238 – 130 = 108
 Applying the given formulae,
 $38.7 \text{ kg} = 108/A$
 $A = 108/38.7 = 2.79 \text{ million}$
- 33. Option (a) is correct.**
 Consumption in 2012 = 72.5 million kg
 Export:Import = 114:72.5
 Consumption in 2013 = 88 million kg
 Export:Import = 114:88
 Consumption in 2014 = 108 million kg
 Export:Import = 130:108
 Consumption in 2015 = 105 million kg
 Export:Import = 116:105
- 34. Option (d) is correct.**
 Consumption in 2013 = 88 million kg
 Population in 2013 = Consumption in million/ per capita consumption
 = $88/35.2 = 2.5 \text{ million}$
 Consumption in 2014 = 108 million kg
 Population in 2014 = $108/38.7 = 2.79 \text{ million}$
 Consumption in 2015 = 105 million kg
 Population in 2015 = $105/40.5 = 2.59 \text{ million}$
 Consumption in 2016 = 127 million kg
 Population in 2016 = $127/42 = 3.02 \text{ million}$
- 35. Option (d) is correct.**
 Total consumption of rice from 2012 to 2016 (in million) = 500.5 million
 Average consumption = $500.5/5 = 100.1$
- 36. Option (b) is correct.**
 ICT stands for information and communication technology.
- 37. Option (d) is correct.**
 Solid state hard drives are faster than mechanical hard disks. It helps in speeding up the Pcs.
- 38. Option (b) is correct.**
 Since Swami is in the BCC area of an email, he will be able to see the TO and CC email address both. TO and CC address are always seen by everyone.
- 39. Option (c) is correct.**
 The order will be Bit, Byte, Kilobyte, Megabyte, Gigabyte, Terabyte.
- 40. Option (b) is correct.**
 In a computer system, RAM is a volatile memory. Data is stored in RAM on a temporary basis.
- 41. Option (d) is correct.**
 Fly ash is used in agriculture to neutralize soil, development of wasteland, in brick industries, and in dam structures.
- 42. Option (d) is correct.**
 Drought and Famine have no definite beginning or end. It can prolong for a very long time.
- 43. Option (b) is correct.**
 Both the statements are true but they are not related. The reasons for indoor air pollutants are carpets, furniture, etc.

44. Option (a) is correct.

Energy generation in India is from various sources like:

The thermal plant is 65% of total production.

From renewable sources is 17.1% of total production.

Large hydro plants account for 12% of total production.

From nuclear sources is 3.2% of total production.

45. Option (b) is correct.

Untreated sewage is the largest source of pollution in rivers of India.

46. Option (d) is correct.

India has the third largest higher education system in the world after the US and China.

47. Option (d) is correct.

There are total 38 institutions of which students are eligible for this fellowship. Amount for the

fellowship is ₹ 70,000 per month for first two years and ₹ 75,000 per month for third and ₹ 80,000 per month for 4th and 5th year.

48. Option (b) is correct.

Leaders of the opposition party are part of a commission which selects the central information officer, central vigilance commissioner, and chairperson of NHRC.

49. Option (a) is correct.

Gender budgeting means preparing a budget from a point of view of gender. In India gender budgeting consists two parts: schemes for spending 100% for women and schemes to spend atleast 30% for women.

50. Option (d) is correct.

The barriers of citizen centric administration is the rigid attitude of civil servants in India and improper implementation of laws and rules in the country.