

UGC NET PAPER-1

GENERAL APTITUDE

SOLVED PAPER JUNE 2024

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 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) \circ (b) \circ (c) \circ (d) \circ .
- Use of any calculator or log table, etc., is prohibited.
- There is no negative marking for incorrect answers.

Direction for Questions (1-5):

The following table shows the percentage (%) distribution of the number of readers of an IT magazine in the years 2019 and 2023, among the six different cities A-F. Based on the data in the table, answer the questions that follow.

City-wise details of Number of IT Magazine Readers

City	Percentage of Readers in Year	
	(2019)	(2023)
A	10%	15%
B	14%	16%
C	17%	28%
D	9%	10%
E	24%	9%
F	26%	22%

- Q.1.** If the total number of readers from all the six cities A-F together in the year 2023 was 50,000 then the number of readers was more than 7,400 in exactly _____ cities in the same year.
(a) 2 (b) 3 (c) 4 (d) 5
- Q.2.** If the total number of readers from all the six cities A-F together in the years 2019 and 2023 were 4.3 lakh and 5.7 lakh, respectively, then what was the difference between the total number of readers from City-B and City-C together in the years 2019 and 2023?
(a) 1.175 lakh (c) 1.625 lakh
(b) 1.415 lakh (d) 1.596 lakh
- Q.3.** If the ratio of the number of readers from City-A in the year 2019 to that in 2023 was 2 : 5, then what was the ratio of the number of readers from all the six cities together in the year 2019 to that in 2023?
(a) 3 : 5 (b) 4 : 5 (c) 4 : 9 (d) 2 : 5
- Q.4.** If the number of readers from the City-D in the year 2019 and 2023 were 77,400 and 1,14,000 respectively, then what is the difference between the number of readers from City-F in the year 2019 and that in 2023?
(a) 24,800 (b) 27,200 (c) 28,400 (d) 33,600

- Q.5.** If the number of readers from City-C in the year 2019 and that from City-E in the year 2023 were 73,100 and 51,300, respectively, then the number of readers from City-B in the year 2023 was approximately _____% more than that in 2019.
(a) 53.7 (b) 50.3 (c) 52.8 (d) 51.5
- Q.6.** Match List I with List II.

LIST I (Abbreviation)	LIST II (Meaning)
A. et.al	I. in the same place
B. ante	II. and others
C. cf	III. before
D. ibid	IV. compare

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-III, C-II, D-I

- Q.7.** Which of the following are essential requirements for the formation of photochemical SMOG?
(A) Carbon monoxide (CO)
(B) Nitrogen dioxide (NO₂)
(C) Carbon dioxide (CO₂)
(D) Volatile Organic Compounds (VOCs)
(E) Sunlight
- Choose the most appropriate answer from the options given below:
(a) A, B and D only (c) B, C, D and E only
(b) A, C and E only (d) B, D and E only

- Q.8.** Choose the correct statements:
(A) $x\%$ of y is equal to $y\%$ of $100x$.
(B) If 40% of 60% of $\left(\frac{3}{5}\right)$ of a number is 504, then 25% of $\left(\frac{2}{5}\right)$ of that number is equal to 350.
(C) If A is 15% more than B, then B is ~13.04% less than A.

(D) 10% of 5 and 5% of 10 add-up to 0.1
Choose the correct answer from the options given below:

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

Q.9. Which fallacy is committed in the following statement?

“People with cases of flu should be kept in quarantine, because it has never been disproven as the best means of keeping the disease from spreading.”

- (a) Appeal to ignorance (c) Slippery slope
(b) Hasty generalisation (d) False cause

Q.10. A motorboat covers certain distance downstream in 5 h but takes 6 h to return upstream to the starting point. If the speed of the stream be 4 km/h, then what is the speed of the motor boat in still water?

- (a) 40 km/h (c) 44 km/h
(b) 42 km/h (d) 46 km/h

Q.11. Which of the following approaches to the study of reality suggests that only knowledge gained through experience and the senses is acceptable.

- (a) Constructionism (c) Empiricism
(b) Ethnography (d) Operationalism

Q.12. Which of the following is the national coordinator of SWAYAM courses for non-technical post-graduation education?

- (a) All India Council for Technical Education (AICTE)
(b) National Institute of Technical Teachers Training and Research (NITTTR)
(c) National Council of Educational Research and Training (NCERT)
(d) University Grants Commission (UGC)

Q.13. Match List I with List II.

LIST I (Ancient Treatises)	LIST II (Author)
A. Lilavati	I. Chanakya
B. Yoga-Sutras	II. Gautam
C. Nyaya-Sutras	III. Patanjali
D. Arthashastra	IV. Bhaskaracharya

Choose the correct answer from the options given below:

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

Q.14. What is the full form of POPs?

- (a) Persistent Organic Pollutants
(b) Persistent Oxygenated Pollutants
(c) Polycyclic Organic Pollutants
(d) Polymerised Organic Pollutants

Q.15. Arrange the following fractions in increasing order.

- (A) $\frac{6}{7}$ (B) $\frac{11}{13}$ (C) $\frac{16}{19}$ (D) $\frac{19}{22}$

Choose the correct answer from the options given below:

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

Q.16. Match List I with List II.

LIST I (Use)	LIST II (Appropriate Computer Input Device)
A. To input voiceovers for a presentation	I. Mouse
B. To input a PIN	II. Joystick
C. To select options from a menu	III. Microphone
D. To operate a flight simulator	IV. Number pad

Choose the correct answer from the options given below:

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

Q.17. A device used to convert a computer's digital signal to an analogue signal for communication is called a:

- (a) bridge
(b) modem
(c) switch
(d) Network Interface Card (NIC)

Q.18. Match List I with List II.

LIST I (Digital Initiative)	LIST II (Purpose)
A. Shodh Sindhu	I. Hosts synopsis of research topics in Indian Universities
B. Shodh Gangotri	II. Free/Libre and open source software for Education
C. Shodh Shuddhi	III. Provides access to e-resources to Universities and Colleges
D. FOSSEE	IV. Plagiarism checking initiative aimed to ensure originality in academic writings

Choose the correct answer from the options given below:

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

Q.19. When communication helps a group to achieve its goals, it is known as:

- (a) Disruptive role (c) Counteractive role
(b) Promotive role (d) Devotional role

Q.20. Speed of a boat in still water is 5 km/h and the speed of the stream is 1 km/h. A man rows to a place at a distance of 24 km and comes back to the starting point. Find the total time taken by him.

- (a) 8 h (b) 10 h (c) 12 h (d) 15 h

- Q.21.** Which of the following are true about breeder reactors?
 (A) They produce more fissile material than they consume.
 (B) There are no breeder reactors in India.
 (C) There are two types (Fast and Slow) of breeder reactors.
 (D) For breeding operation the conversion ratio (fissile material produced/fissile material consumed) should be more than one.
 (E) Breeder reactors produce more nuclear waste than the conventional one.
 Choose the correct answer from the options given below:
 (a) A, C and D only
 (b) A, B and D only
 (c) B, C and E only
 (d) A, C, D and E only
- Q.22.** Arrange the following in order of increasing connotation.
 (A) Fielder (B) Ball Player
 (C) Baseball Player (D) Athlete
 Choose the correct answer from the options given below:
 (a) B, C, A, D (c) D, B, C, A
 (b) B, A, C, D (d) A, C, B, D
- Q.23.** When you try to predict the value of an outcome variable from one or more variables, you are likely to be using:
 (A) the person product-moment correlation
 (B) bivariate regression
 (C) multivariate regression
 (D) analysis of variance
 Choose the correct answer from the options given below:
 (a) A, B and C only (c) B, C and D only
 (b) B and C only (d) A and D only
- Q.24.** If a research project is set up so that everybody in the population of interest has an equal chance of being included in the sample, the research involves:
 (a) quota sampling
 (b) judgmental sampling
 (c) probability sampling
 (d) convenience sampling
- Q.25.** Which of the following statement is correct?
 (a) Nyaya syllogism has three propositions.
 (b) Nyaya syllogism has five terms.
 (c) Nyaya syllogism has five propositions.
 (d) Nyaya syllogism has three propositions and three terms.
- Q.26.** Which technology first marked a separation between transportation and communication?
 (a) Telegraph (c) Printing
 (b) Projection (d) Photography
- Q.27.** According to National Credit Framework (NCTF), after obtaining Bachelor's Degree (Honours/Research/Engineering) of programme duration of four years, the credit level earned is:
 (a) 5.5 (b) 6 (c) 6.5 (d) 7
- Q.28.** Identify the correct order of the following list of computer components ranked from slowest to fastest in terms of access time.
 (A) CPU cache (B) RAM
 (C) SSD (D) Optical drive
 Choose the correct answer from the options given below:
 (a) D, C, B, A (c) B, A, D, C
 (b) A, B, C, D (d) C, D, A, B
- Q.29.** 'Mind to mind' communication involves the communication of meaning through:
 (A) Physical settings
 (B) Shared beliefs
 (C) Values
 (D) Noise manipulation
 (E) Context
 Choose the correct answer from the options given below:
 (a) A, B and D only (c) A, B, C and E only
 (b) B, C and D only (d) C, D and E only
- Q.30.** Which of the following are the subdivisions of Implicit (unconscious) memory?
 (A) Priming
 (B) Episodic memory
 (C) Classical conditioning effects
 (D) Semantic memory
 (E) Procedural memory
 Choose the most appropriate answer from the options given below:
 (a) B and D only (c) A, C and E only
 (b) A, B, D and E only (d) A, B, C, D and E
- Q.31.** The second five year plan for implementation included the recommendations of the following:
 (A) University Education Commission
 (B) Languages Commission of India
 (C) Rural Higher Education Committee
 (D) Committee Establishment of New Universities
 (E) Three-Year Degree Course Committee
 Choose the correct answer from the options given below:
 (a) A, B and C only (c) C, D and E only
 (b) B, C and D only (d) A, B and E only
- Q.32.** Which of the following statements A-D about computer memory size is/are true?
 (A) 25 KB is larger than 100 MB.
 (B) 999 MD is larger than 50 GB.
 (C) 3500 KB is smaller than 2 GB.
 (D) 2350 bytes is smaller than 2 KB.
 Choose the correct answer from the options given below:
 (a) A only (c) B and D only
 (b) C only (d) B and C only
- Q.33.** Which of the following statements is logically equivalent to the statement - "No horses are feline"?
 (a) No felines are horses.
 (b) No horses are non-feline.
 (c) All non-horses are felines.
 (d) All non-felines are horses.

- Q.34.** The media accountability system to improve media quality focuses on:
 (A) Evaluation
 (B) Audience control
 (C) Monitoring
 (D) Education
 (F) Feedback

Choose the correct answer from the options given below:

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

- Q.35.** Which of the following digital initiatives provides database of profiles of scientists/researchers and other faculty members working at leading academic institutions and R & D organisations?

- (a) SWAYAM prabha
 (b) E-Vidwan
 (c) National Academic Depository (NAD)
 (d) E-Shodhsindhu

- Q.36.** Which of the following statements are true?

- (A) Validity can never apply to any single proposition by itself.
 (B) The concept of truth can apply to single propositions.
 (C) Propositions by themselves can be valid but not invalid.
 (D) Proposition cannot be valid by itself though it can be invalid on its own.

Choose the most appropriate answer from the options given below:

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

- Q.37.** Which of the following is the first Post-Independence Education Commission in India?

- (a) Indian Education Commission
 (b) Calcutta University Commission
 (c) University Education Commission
 (d) Indian Universities Commission

- Q.38.** Knowing that you find algebra more difficult than your sister does, but that you could improve with practice, is an example of :

- (a) Self-regulation (c) Self-discipline
 (b) Metacognition (d) Automation

- Q.39.** Match List I with List II.

LIST I (Types of toxicants)	LIST II (Affected Organ)
A. Nephrotoxic	I. Lungs
B. Hematotoxic	II. Kidney
C. Pulmonotoxic	III. Liver
D. Hepatotoxic	IV. Blood

Choose the correct answer from the options given below:

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

- Q.40.** Match List I with List II.

LIST I (Goals/Targets of MDGs and SDGs)	LIST II (Number of Goals/Targets)
A. Goals in Millennium Development Goals	I. 8
B. Targets in Millennium Development Goals	II. 17
C. Goals in Sustainable Development Goals	III. 21
D. Targets in Sustainable Development Goals	IV. 169

Choose the correct answer from the options given below:

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

- Q.41.** Arrange the different stages involved in the process of deduction in correct sequence.

- (A) Revision of theory
 (B) Hypothesis confirmed or rejected
 (C) Findings
 (D) Data collection

Choose the correct answer from the options given below:

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

- Q.42.** Match List I with List II.

LIST I (Concepts)	LIST II (Source)
A. Free commerce and communication	I. Alfred Marshall
B. Communication in economics	II. John Locke
C. Language as a conduit of communication	III. Karl Marx
D. Lines of communication	IV. Adam Smith

Choose the correct answer from the options given below:

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

- Q.43.** Identify the correct sequence of the following research organisations according to their year of establishment.

- (A) Indian Council of Social Science Research (ICSSR)
 (B) National Council for Rural Institutes (NCRI)
 (C) Indian Council for Philosophical Research (ICPR)
 (D) Indian Council for Historical Research (ICHR)
 (E) Indian Institute of Advanced Studies (IIAS)

Choose the correct answer from the options given below:

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

Q.44. Match List I with List II.

LIST I (Words)	LIST II (Codes with same rule)
A. FIND	I. RGKC
B. CLOG	II. DGLB
C. SHOW	III. AJME
D. TIME	IV. QFMU

Choose the correct answer from the options given below:

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

Q.45. What is the base-10 equivalent of the base-4 number 3013?

(a) 182 (b) 196 (c) 199 (d) 190

Direction for Questions (46–50):

Read the passage given below and answer the following questions.

According to a World Health Organisation report, about 80 percent of the world's population uses traditional medicine systems in some or the other way. India has a distinctive and unique traditional medicine base with each system having its own ancient philosophy, medicinal knowledge, perception and practices that align with the regional culture, traditions and beliefs. The traditional medicine system in India include Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa Rigpa and Homeopathy which is known as Ayush. All these systems were formulated, practiced and perfected in a continuum much before the advent of modern health science.

In many countries around the world, medical pluralism is the norm and traditional medicine is one of the surest means to achieve total healthcare coverage for the world population using acceptable safe and economically feasible methods. No system of medicine can single handedly address all health concerns, but an integrative approach incorporating the positives of each can surely benefit mankind. The holistic patient-centred and individualised approach is the trademark of traditional systems and enables the patient-physician partnership to design or customise treatment and lifestyle advice in order to achieve the highest potential for well-being. This awareness combined with the increase in use of traditional medicine has brought the systems to the

fore. The diverse activities ranging from the provision of prophylactic care to the management of disease and the effective implementation and integration of Ayush system to the public healthcare during the pandemic has garnered global attention to Ayush systems. This has enabled the signing, of the Host Country Agreement for the establishment of Global Centre for Traditional Medicine (GCTM) at Jamnagar.

Q.46. Choose the appropriate title for the passage.

(a) Allopathy (c) Ayurveda
(b) Holistic Healthcare (d) Homeopathy

Q.47. In many countries of the world, medical pluralism is the norm because:

(a) Traditional systems of medicine are useless.
(b) Traditional systems of medicine affect the public.
(c) An integrative approach incorporating the positives of each system of medicine can in no way benefit mankind.
(d) No single system of medicine can single-handedly address all health concerns.

Q.48. Which of the following facts about the traditional Indian medicine systems are false?

(A) Each system is unique.
(B) They include Ayurveda, Naturopathy, Yoga, Unani, Siddha, Sowa Rigpa and Homeopathy.
(C) Modern Health Science preceded them.
(D) Each system has an essentially similar philosophy.

Choose the most appropriate answer from the options given below:

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

Q.49. The Global Centre for Traditional Medicine has been established in:

(a) World Health Organisation
(b) Jamnagar
(c) New Delhi
(d) Haridwar

Q.50. According to a World Health Organisation report the percentage of the world population that uses traditional medicine systems in some way or the other is:

(a) About 20% (c) About 100%
(b) About 50% (d) About 80%

Answer Key

Q. NO	ANSWER	Topic	Unit/Chapter
1	c	Data interpretation	Data interpretation
2	a	Data interpretation	Data interpretation
3	a	Data interpretation	Data interpretation
4	b	Data interpretation	Data interpretation
5	d	Data interpretation	Data interpretation
6	b	Research report	Research aptitude
7	d	Pollutants	People and environment
8	b	Boat and stream	Mathematical aptitude

9	a	Indian Logic	Logical reasoning
10	c	Boat and stream	Mathematical aptitude
11	a	Methods of teaching	Teaching aptitude
12	d	Government initiatives	Higher education
13	a	General awareness	Higher education
14	a	Pollutants	People and environment
15	c	Fractions	Mathematical aptitude
16	b	Computer devices	ICT
17	b	Computer devices	ICT
18	b	Government initiatives	Research aptitude
19	b	Effective communication	Communication
20	b	Boat and stream	Mathematical aptitude
21	a	Agriculture	People and environment
22	b	Venn diagram	Logical reasoning
23	b	Research report	Research aptitude
24	c	Sampling	Research aptitude
25	c	Indian Logic	Logical reasoning
26	a	General awareness	Communication
27	c	New Education Policy 2020	Higher education
28	a	Computer devices	ICT
29	c	Terminology	Communication
30	c	Memory	Teaching aptitude
31	c	Committees on education	Higher education
32	b	General awareness	ICT
33	a	Square of opposition	Logical reasoning
34	d	Effective communication	Communication
35	b	Government initiatives	Higher education
36	b	Logic and arguments	Logical reasoning
37	c	Commissions on education	Higher education
38	b	Terminology	Teaching aptitude
39	a	Pollutants	People and environment
40	b	SDGs	People and environment
41	d	Types of research	Research aptitude
42	d	Theories and principles of communication	Communication
43	c	Institutions of higher education	Higher education
44	b	Alphabetical series	Mathematical aptitude
45	c	Number system	ICT
46	b	Reading comprehension	Reading comprehension
47	d	Reading comprehension	Reading comprehension
48	c	Reading comprehension	Reading comprehension
49	b	Reading comprehension	Reading comprehension
50	d	Reading comprehension	Reading comprehension

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SOLVED PAPER JUNE 2024

Answers with Explanations

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

Given that, total number of readers from all cities in the year 2023 = 50,000

City	Readers in 2023 (in%)	Readers in 2023
A	15	7,500
B	16	8,000
C	28	14,000
D	10	5,000
E	09	4,500
F	22	11,000
Total	100	50,000

Number of cities having more than 7,400 readers in 2023 are - 04 (A, B, C and F)

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

If the total number of readers were 4.3 lakh in 2019 and 5.7 lakh in 2023

City	Readers in 2019 (in %)	Readers in 2019	Readers in 2023 (in%)	Readers in 2023
A	10	43,000	15	85,500
B	14	60,200	16	91,200
C	17	73,100	28	1,59,600
D	09	38,700	10	57,000
E	24	1,03,200	09	51,300
F	26	1,11,800	22	1,25,400
Total	100	4,30,000	100	5,70,000

Number of readers in 2019 of City B and C = 60,200 + 73,100 = 1,33,300

Number of readers in 2023 of City B and C = 91,200 + 1,59,600 = 2,50,800

Difference between readers of City B and C together in 2019 and 2023 = 2,50,800 - 1,33,300 = 1,17,500

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

$$\begin{array}{l}
 \begin{array}{l}
 2019 \\
 10\% \\
 \swarrow \searrow \\
 2 \quad 5 \\
 \text{Total} = 100\% \\
 10\% = 2 \\
 100\% = 20
 \end{array} \\
 \begin{array}{l}
 2023 \\
 15\% \\
 \swarrow \searrow \\
 5 \quad 3 \\
 \text{Total} = 100\% \\
 15\% = 5 \\
 100\% = \frac{5}{15} \times 100
 \end{array} \\
 \text{Ratio} : 100 \\
 3 : 5
 \end{array}$$

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

Number of readers in City D in 2019 = 77,400 (09% of total readers in 2019)

$$\begin{aligned}
 \text{Total number of readers in 2019} &= 77,400 \times \frac{100}{09} \\
 &= 8,60,000
 \end{aligned}$$

Number of readers in City D in 2023 = 1,14,000 (10% of total readers in 2023)

Total readers in 2023 = 11,40,000

Number of readers in City F:

In 2019 = 8,60,000 × 26% = 2,23,600

In 2019 = 11,40,000 × 22% = 2,50,800

Difference between readers in City F in 2019 and 2023 - 2,50,800 - 2,23,600 = 27,200

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

Number of readers in city C in 2019 = 73,100 (17% of total number of readers in 2019)

Total number of readers in 2019 = $73,100 \times \frac{100}{17} = 4,30,000$

Number of readers on City E in 2023 = 51,300 (09% of total number of readers in 2023)

Total number of readers in 2023 = $51,300 \times \frac{100}{9} = 5,70,000$

Readers in City B in

2019 – $4,30,000 \times 14\% = 60,200$

2023 – $5,70,000 \times 16\% = 91,200$

Difference = $91,200 - 60,200 = 31,000$

Difference in percentage = $31,000 \times \frac{100}{60,200} = 51.49\%$ (approx 51.5%)

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

Research abbreviations

Abbreviations	Meaning
et.al	And others (used where there are multiple authors)
ante/ex ante	Before the event
Ex post	After the event
cf.	Confor or compare
Ibid	In the same place (used to repeat previously used footnote and endnote)

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

Photochemical smog is a well known pollutant. It is formed when sunlight reacts with nitrogen oxide and volatile organic compounds that are present in the atmosphere.

Main elements for forming photochemical smoke are:

- Sunlight
- Hydrocarbons (which are produced by burning fossil fuel)
- Nitrogen oxide
- Volatile organic compounds

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

Statement (A): $\frac{x}{100} \times y = \frac{y}{100} \times 100x$

$\Rightarrow \frac{xy}{100} \neq xy$ [So, Statement (A) is wrong]

Statement (B): Let the number is x .

$$\therefore \frac{40}{100} \times \frac{60}{100} \times \frac{3}{5} \times x = 504$$

$$x = 3,500$$

$$\text{Now, } \frac{25}{100} \times \frac{2}{5} \times 3,500 = 350$$

So, Statement (B) is correct.

Statement (C): Let $B = 100$
then $A = 115$

$$\text{So, } B \text{ is less than } A \text{ by } = \frac{(115 - 100)}{115} \times 100$$

$$= 13.04\%$$

Hence, Statement (s) is also correct.

Statement (D) 10% of $5 = 0.5$

5% of $10 = 0.5$

Both are equal, so statement (D) is wrong.

So, option (b) is correct.

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

The argument fallacy given in the statement is appeal to ignorance.

The fallacy or Hetvabhichara when arguments are connected with a flow and series of irrelevant arguments is called a slippery slope.

1. **Straw Man fallacy:** This is a miss presentation by someone to make it easier to attack if a mother says that you have to finish the veggies if you want dessert and the sun replies you love me only when I eat food.
2. **Appeal to authority** is a fallacy where an argument is considered valid as it is delivered by some authorised person or text.

Some other common types of fallacies:

- A. **Savyabhichara:** Fallacy or irregular middle term. Example - all bipeds are rational swans are bipeds therefore ones are rational.
- B. **Viruddha:** When the statement consists of two opposite aspects. Example - sound is eternal because it is produced.
- C. **SatPratipala:** When one more middle term is included to prove the previous middle term. Example- sound is eternal because it is audible.
- D. **Asiddha:** Fallacy of unproved middle term. Example - Gulab Jamun is sweet because it has Jamun which is a sweet fruit.

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

Speed of stream = 4 km/h

Upstream time (T_1) = 6 h

Downstream time (T_2) = 5 h

Let $D \text{ km}$ be the distance and $x \text{ km/h}$ be the speed of the motor boat in still water.

Relative speed of the boat in upstream (S_1) = Speed of boat – Speed of stream
 $= x - 4$

Relative speed of the boat in downstream (S_2) = Speed of boat + Speed of stream = $(x + 4)$

According to the problem,

$$D = D$$

$$S_1 T_1 = S_2 T_2$$

$$(x - 4).6 = (x + 4).5$$

$$6x - 24 = 5x + 20$$

$$x = 44 \text{ km/h}$$

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

Constructionism: This branch of learning is the learner centred. The knowledge is constructed based on personal experience and hypothesis of the environment by the learner himself. It is assumed that the learner is not blank but has some fast experience which affects the current situation. The process of learning in constructivism includes understanding the context, discovering and sharing the gained knowledge.

Empiricism - The approach that suggests only knowledge through experience and the senses is acceptable.

Ethnography - It is a method of learning or research which includes getting busy with the environment. It is a type of longitudinal study which captures the data over an extended period by observing and analysing the changes and friends over that time. This is a time consuming process.

Operationalism - Operationalism is based on logic and science.

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

There are nine National Coordinators of SWAYAM courses:-

1. AICTE- for self paced and international courses
2. NPTEL - for engineering courses
3. UGC- non-technical post graduation education
4. CEC- for undergraduate education
5. NCERT- for school education
6. NIOS- for school education
7. IGNOU- for out of the school students
8. IIMB - for management studies
9. NITTTR- for teacher training

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

Answer can be identified by the two famous books arthshastra which is written by Chanakya and Yog Shastra which is written by Patanjali.

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

POPs stands for persistent organic pollutants, which are harmful chemicals that negatively affect human health as well as the environment. These are organic compounds that are resistant to degradation through chemical, biological, and photolytic processes.

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

$$\frac{6}{7}, \frac{11}{13}, \frac{16}{19}, \frac{19}{22}$$

Step-01: Subtract all given fraction from 1.

$$1 - \frac{6}{7}, 1 - \frac{11}{13}, 1 - \frac{16}{19}, 1 - \frac{19}{22}$$

$$\text{or, } \frac{1}{7}, \frac{2}{13}, \frac{3}{19}, \frac{3}{22}$$

Step-02: Now, take the reciprocal each and then divide.

$$\frac{7}{1}, \frac{13}{2}, \frac{19}{3}, \frac{22}{3}$$

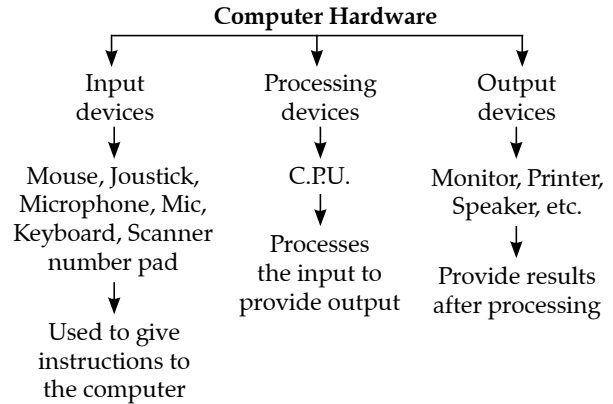
$$\text{or, } 7, 6.5, 6.33, 7.33$$

Step-03: Arrange in increasing order

$$6.33 < 6.5 < 7 < 7.33$$

$$\frac{16}{19} < \frac{11}{13} < \frac{6}{7} < \frac{19}{22}$$

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



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

Modem is used to convert a computer's digital signal to an analogue signal for communication over networks.

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

Shodhgangotri:

- ShodhGangotri is a platform where synopsis of research topics are reserved which are being researched or accepted in Indian Universities.
- This platform has three digital access over the internet and every resource is downloadable.
- Shodh ganga.
- Established in 2011 by INFLIBNET Centre Ahmedabad, UGC and Ministry of Education.

Shodh ganga: Shodhganga is a reservoir of research thesis of Indian University which is also established by INFLIBNET centre, Ahmedabad.

Shodh Sindhu: Shodh Sindhu is a program initiated by the ministry of education Government of India.

This program is aimed at providing academy institutions affordable access to high quality electronic resources.

In other words, Shodh Sindhu is a consortium for higher education electronic resources.

Shodh Shuddhi: Shodh Shuddhi is a platform by the Ministry of Education, Government of India which provides Plagiarism Detection Software (PDS) to all Universities/Institutions in India to enhance research quality.

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

The communication which helps the group to achieve its goals by motivating the team members or group members is promotional communication.

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

Relative speed of Downstream = $5 + 1 = 6$ km/h

Relative speed of Upstream = $5 - 1 = 4$ km/h

$$\text{Time upstream} = \frac{24}{4} = 6 \text{ h}$$

$$\text{Time downstream} = \frac{24}{6} = 4 \text{ h}$$

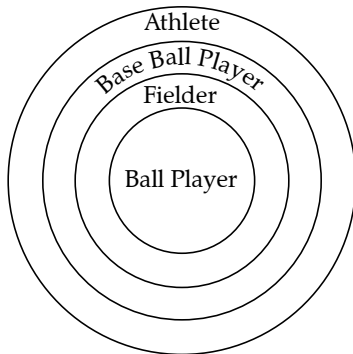
$$\text{Total time} = 6 + 4 = 10 \text{ h}$$

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

Breeder reactors are:

- Nuclear reactors which produce more fissile material than it consumes.
- Apsara was the first nuclear reactor of India installed in 1956 under the government of PM Jawaharlal Nehru. It was designed by Bhabha Atomic Research Centre.
- KAMINI (Kalpakkam mini reactor) is India's first fast nuclear reactor recently installed under the government of PM Narendra Modi. It was installed with collaboration of India and Russia and is the largest nuclear power station of India.

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



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

When more than one variable is taken to find the outcome it may be by variant or multivariate analysing.

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

Random or probability sampling is a type of sampling in which every unit of population has the same probability to be selected whereas non-random sampling is the sampling method we use for the biases of researcher works and every unit of population has an unequal probability to be selected in the sample.

Random sampling is also called probability sampling this is of various types they are:

- Simple random sampling
- Stratified sampling
- Cluster sampling
- Systematic sampling

Types of non-random sampling:

- Quota sampling
- Purposive sampling
- Convenience sampling
- Judgemental sampling

Following two sampling methods are considered as quasi random sampling:

- Multi-State sampling
- Systematic sampling

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

Nyaya syllogism has five propositions which includes four premises and one conclusion.

Pratijna , Hetu, Upanaya, Udaharana , Nigmana
This process can be learnt by mnemonic **PHUUN**.

- **Pratijana** (the subject of inference)- The hill has fire
- **Hetu** (the reason)- Because it has smoke
- **Udaharana** (the example) - Kitchen has smoke because it has fire.
- **Upnayan (comparison):** Ad kitchen has smoke because of fire that is as hill has fire because of smoke.
- **Nigmana** (the conclusion): Hill has fire.

This is a formal reasoning

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

Telegraph was the first technology to provide separation between transportation and communication.

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

Credit level earned by the students after completing a four year degree in any field will be 6.5.

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

RAM or Random Access Memory is a volatile memory. The data which is stored in this memory is volatile which vanishes if the electricity is down or the computer gets off.

ROM or Read Only Memory is a non-volatile memory. This is permanent in nature. Software is installed in Read Only Memory.

CPU or Central Processing Unit is the processor which is called brain of computer having three parts named:

- Control Unit (CU)
- Arithmetic and Logic Unit (ALU)
- Memory Unit

SSD - Solid state drive is a secondary storage device also called Solid State Disk.

CPU cache - This is a part of the CPU memory unit. This is used to store recent input instructions of instructions that are frequently used.

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

Telepathy or mind to mind communication includes communication through experiences, feeling, perception, feeling and affliction, etc.

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

Implicit memory is the part of memory which is remembered unconsciously. This can affect human behavior even though it was not remembered intentionally. It helps to rote.

It has three main subdivisions:

1. Priming
2. Classical conditioning effect
3. Procedural memory

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

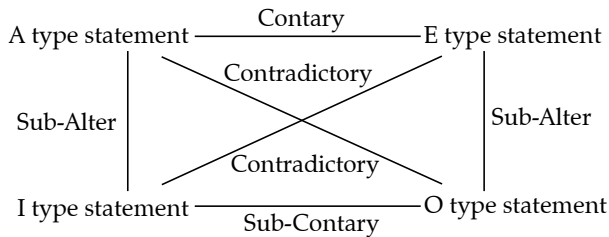
In second 5 year plan many recommendations of these committees were considered in making the plan.

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

Unit	Abbreviation	Storage
Byte		8 bits
Kilobyte	KB	1024 bytes
Megabyte	MB	1024 kilobyte
Gigabyte	GB	1024 megabytes
Terabyte	TB	1024 gigabytes
Petabyte	PB	1024 terabyte

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

Square of opposition:



- **A type sentence:** All felines are horses
- **E type sentence:** No feline is a horse
- **I type sentence:** Some felines are horses
- **O type sentence:** Some felines are not horses
- **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 another 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.
 - If one will be undetermined then the other will also be undetermined.

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

Media quality or communication is completely based on the characteristics of effective communication. This includes education, awareness, understanding the audience, feedback, language, evaluation according to the results and monitoring.

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

According to the official website of IIT (Indian Institute of Information Technology) - "VIDWAN

is the premier database of profiles of scientists / researchers and other faculty members working at leading academic institutions and other R & D organisations involved in teaching and research in India. It provides important information about an expert's background, contact address, experience, scholarly publications, skills and accomplishments, researcher identity, etc. The database is developed and maintained by the Information and Library Network Centre (INFLIBNET) with financial support from the National Mission on Education through ICT (NME-ICT). The database would be instrumental in selection of panels of experts for various committees, taskforce, established by the Ministries/Govt. establishments for monitoring and evaluation purposes."

Shodh Sindhu: Shodh Sindhu is a program initiated by the ministry of education Government of India.

This program is aimed at providing academy institutions affordable access to high quality electronic resources.

In other words, Shodh Sindhu is a consortium for higher education electronic resources.

Swayam Prabha: This is an initiative of the ministry of education to provide educational content through DTH channels all over the country 24/7. It consists of 80 channels which provide educational content in various forms on a repeating basis.

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

A single proposition can be true or false but validity is defined on the basis of prepositions and conclusion.

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

University Education Commission:

- This commission was the first educational commission after independence of the country.
- Also known as Radhakrishnan Commission from the chairman Sarvepalli Radhakrishnan.
- It was set up in 1948.
- Major suggestions or recommendations of this commission were for secondary and higher education.
- It recommended improvement of secondary and higher education by setting up UGC or universities grant commission.
- Vocational education and establishment of rural university was also one of its suggestions.
- The commission recommended that the university should generate interest in leadership and citizenship among the students.

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

Metacognition is a psychological process which includes planning, monitoring, executing, regulates and directs one's learning. This is a process of thinking about one's own cognition.

This helps the students to think and improve their learning styles and learning.

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

Toxicants are the polluted articles which are man made or created by humans and released in the environment.

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

Sustainable development goals came into effect in 2016 and its targets have to be achieved by 2030.

It consists of 17 goals and 169 targets.

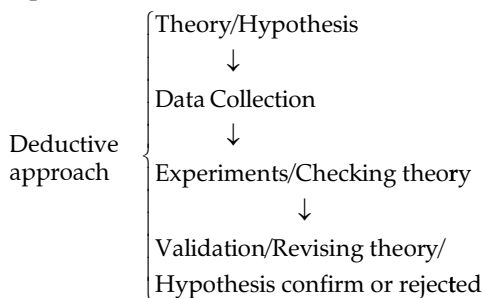
These goals replaced the millennium development goals which were 8 in numbers and were established in 2000.

Millennium development goals were replaced by sustainable development goals in 2015 but sustainable development goals came into effect in 2016.

The 17th sustainable development goals(SDGs) are:

1. No poverty
 2. Zero hunger
 3. Good health and well being
 4. Quality education
 5. Gender equality
 6. Clean water and sanitation
 7. Affordable and clean energy
 8. Decent work and economic growth
 9. Industry, innovation and infrastructure
 10. Reduced inequality
 11. Sustainable cities and communities
 12. Responsible consumption and production
 13. Climate action
 14. Life below water
 15. Life on land
 16. Peace and Justice strong institution
 17. Partnership to achieve the goal
- Agenda 2030 is related with SDGs.

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



Inductive research: The research goes from particular to general or example to theory.

Deductive research: Opposite to inductive research. This flows from general to particular or theory to observation.

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

- A. Free commerce and communication-Adam Smith.
- B. Communication in economics-Alfred Marshall.

C. Language as a conduit of communication- John Locke.

D. Lines of communication-Karl Marx.

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

A. Indian Council of Social Science Research (ICSSR)

- Established in 1969 in New Delhi.
- It has 7 subsidiaries.
- It oversees research work in the field of Social Science in India.

B. National Council for Rural Institutes (NCRI)

- It is now known as Mahatma Gandhi National Council for Rural Education.
- Established in 1995 in Hyderabad.
- It is registered as autonomous society.
- The object of NCRI is to promote rural higher education by supporting rural institutions.

C. Indian Council for Philosophical Research (ICPR)

- It was established in 1977.
- It started working actively in 1981.
- It was established under the Department of education, Ministry of Human Resources Development.

D. Indian Council for Historical Research (ICHR)

- Established in 1972 in New Delhi

E. Indian Institute of Advanced Studies (IIAS)

- Established in 1964.

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

F I N D → D G L B
 6 9 14 4 4 7 12 2

-2 from all letters

C L O G → A J M E
 3 12 15 7 1 10 13 5

-2 from all letters

Same code and logic is for all

S H O W → Q F M U
 19 8 15 23 17 6 13 21

T I M E → R G K C
 20 9 13 5 18 7 11 3

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

For converting any number from base 4 to base 10, following steps are to be done:

A. Multiply each digit to power table of 4 - $3013 = (3 \times 64) + (0 \times 16) + (1 \times 4) + (3 \times 1)$

B. Add the products
 $192 + 0 + 4 + 3 = 199$

For converting any number from base 10 to base 4, following steps are to be done:

A. Start by dividing the number of base 10 by making it 4 digits (convert by 4).

B Note down the remainder.

- C. Divide the quotient by 4 and continue to record the remainder in every step. Repeat until it becomes 0.
- D. Take the remainders in reverse order.
46. **Option (b) is correct.**
As the passage suggests, the purpose of setting up a new institute for medical care and other things in the passage are to focus on the importance of holistic healthcare and increasing the health benefits. The suitable title for the passage is holistic healthcare not only Ayurveda, Allopathy or Homeopathy.
47. **Option (d) is correct.**
As the second paragraph of the passage says "No system of medicine can single handedly address all health concerns, but an integrative approach incorporating the positives of each can surely benefit mankind".
48. **Option (c) is correct.**
Statement A and B are correct as the first paragraph suggests.
Statement C and D are incorrect because modern science has succeeded to the traditional medical system because All these systems were formulated, practiced and perfected in a continuum much before the advent of modern health science.
49. **Option (b) is correct.**
- Global Centre for traditional medicine is set up by the World health organisation in Jamnagar Gujarat India.
 - The foundation stone was led down by prime minister Narendra Modi in the presence of prime minister of Mauritius and general director of World Health Organisation in 2022
 - The Government of India has contributed 250 million US dollars for infrastructure and other expenses for this centre.
50. **Option (d) is correct.**
- The World Health Organisation and the Government of India signed an agreement on 25th March 2022 to set up a centre for traditional medicine. This project was supported by 250 million US dollars from the government of India.
 - It was estimated that 80% of the world's population uses traditional medicine.
 - To date, 170 of the 194 WHO Member States have reported the use of traditional medicine, and their governments have asked for WHO's support in creating a body of reliable evidence and data on traditional medicine practices and products. Source- who.int(Official website of WHO)