

**Paper-I General**

1. A student centric method of teaching is
  - a. Lecture
  - b. Online video
  - c. Group discussion
  - d. Assignment
2. The term that best describes the process of acquiring specific skills is
  - a. Training
  - b. Learning
  - c. Teaching
  - d. Experiencing
3. The level of teaching with highest valuation is
  - a. Memory level
  - b. Understanding level
  - c. Reflective level
  - d. Rote level
4. Detailed plan with course material and method of teaching is called as
  - a. Syllabus
  - b. Notes
  - c. Curriculum
  - d. Précis
5. The single most essential trait of a teacher is
  - a. Command over language
  - b. Knowledge of the subject
  - c. Desire to teach
  - d. Humorous nature
6. Teaching aids are useful for all of the following aspect of learning process EXCEPT
  - a. Memory
  - b. Understanding
  - c. Aptitude
  - d. Enthusiasm

7. An example of informal learning is
- Group discussion
  - Online lectures
  - Classroom teaching
  - Social interaction
8. The examination that you are currently participating in is best described as
- Placement evaluation
  - Diagnostic evaluation
  - Formative evaluation
  - Summative evaluation
9. A researcher is studying the views of people in a country regarding the role of WHO during Covid-19. This type of research is best termed as
- Quantitative research
  - Qualitative research
  - Deductive research
  - Inductive research
10. Amongst the following components of a research paper, the most essential components is
- Introduction
  - Method
  - Result
  - Discussion
11. In order to find out the percentage of people who have been vaccinated in a large company of 10,000 employees, the researcher write the ID numbers of employee on chits and then pick the chits after mixing them to select 100 employees for collection of data. This type of sampling is best termed as
- Convenient sampling
  - Clustered sampling
  - Stratified sampling
  - Random sampling
12. Which of the following will NOT qualify as appropriate research ethics?
- To maintain the confidentiality of the participants
  - To record additional information without telling participants
  - To record same parameters with multiple methods
  - To record same parameter multiple times during the course of study

13. Amongst the following options, the best way to evaluate the value of published paper is
- Journal in which the paper is published
  - Country from where the paper is published
  - Number of authors in the paper
  - Citation of the paper
14. All of the following can be considered as research except
- Study to find out relationship between two measurable variables
  - Study to find out mechanism of an observed phenomenon
  - Study to prove what you already believe in
  - Study to recheck the finding of earlier published research
15. The calculation of number of participants in a study (Sample size) is based on
- Available persons
  - Feasibility
  - Standard deviation of the variable to be measured
  - Cost of the study
16. A researcher has recorded a satisfaction level of consumers who use online sales portal by asking them to rate their experience on a scale of 1 to 5. The data obtained by the researcher is best classified as
- Nominal
  - Ordinal
  - Continuous
  - Discrete
17. A researcher has collected data regarding marks obtained in the final exams and attendance of students in a school. The best method to scientifically show an association between two variables is
- Comparison of mean values of marks with mean values of attendance
  - Comparison of standard deviation of marks with standard deviation of attendance
  - Determination of correlation of marks with attendance
  - Data not enough to determine association between marks and attendance

18. Hybrid Cars are vehicles that have the capability of running either on electric power or petroleum products. Running a hybrid car in electric mode has the advantage of cutting down on the gas emissions produced by a petroleum fuelled car. Hybrid cars do not have as high accelerations compared to conventional cars and their capacity is lower compared to larger petrol vehicles. Even though running a hybrid car can be cheaper, their purchasing costs are much higher than that of a petrol car.

Which of the following can be best inferred based on the above passage?

- a. Road trips take longer in hybrid cars.
  - b. It is more profitable for car manufacturers to produce hybrid cars.
  - c. Hybrid cars have certain lacunae compared to petrol cars
  - d. Gas emissions of petrol cars contribute to global warming.
19. Mr Y starts walking northwards for 1 km and then turns westwards and walks for another 1 km. He then turns by 135 degrees to his left and walks for another 2 km. From his starting point, Mr Y is now
- a. northwest
  - b. Southwest
  - c. Northeast
  - d. Southeast
20. A man, woman, dog and duck entered into a park at different times on a day. Read the statements carefully:
- i) The man entered before the dog.
  - ii) The bird entered at last.
  - iii) The woman entered after the dog but before the duck.
- Who entered the park at first?
- a. Man
  - b. Woman
  - c. Duck
  - d. Dog
21. Suraj, Dalbir, John and Irfan are friends. Suraj is taller than John but shorter than Dalbir. The height of Dalbir is 6 feet. Irfan is tallest of all four friends. Which of the following statements is NOT correct?
- a. John is shortest of all four friends.
  - b. Height of Irfan is more than 6 feet.
  - c. Suraj is less than 6 feet tall.
  - d. Dalbir is taller than Irfan.

22. Observe and analyse the series of numbers given below

0, 1, 1, 2, 3, 5, X, 13, 21

The number at location X is

- a. 6
- b. 7
- c. 8
- d. 9

23. If FAN is written as GBO, then CAT will be written as :

- a. DBU
- b. GBU
- c. DAU
- d. TBU

24. If LOVE is written as PSZI, then NOTE will be written as:

- a. RSXI
- b. RSZI
- c. PZSJ
- d. RSXJ

25. In a row of students, A was placed 5<sup>th</sup> from the left while the B was placed 7<sup>th</sup> from the right. When A and B exchanged their places, the A became 19<sup>th</sup> from the left. From the centre of row, how far right A is now placed?

- a. 4th
- b. 5th
- c. 6th
- d. 7th

26. Consider the following statement made by a teacher in a class to a student "The way you answer to the questions asked in class, you will make a good spokesperson for a political party"

This statement is best classified as

- a. Mass communication
- b. Meta communication
- c. Formal communication
- d. Horizontal communication

27. All of the following forms of communication provide an opportunity for a feedback EXCEPT

- a. Formal communication
- b. Informal communication
- c. Mass communication
- d. Non-verbal communication

28. All of the following can be considered as a form of communication EXCEPT
- Debate
  - Seminar
  - Group discussion
  - Observing conversation between two persons
29. A researcher is recording weight, age, daily food consumption and daily exercise in a group of students. In this study, the variable that can be classified as dependent variable is
- Weight
  - Age
  - Daily food consumption
  - Daily exercise
30. A researcher has sampled 1000 persons from five cities and collected information whether they had Covid-19 infection. The number of persons sampled in each is different. The best way to graphically present this data is
- Line diagram
  - Pie chart
  - Scatter plot
  - Box plot
31. A research study showed that increase in age is associated with decrease in the bone mineral density and the increase in percentage greying of hair. On the basis of this information, which of the following statements CANNOT be true?
- Bone mineral density negatively correlates with age
  - Bone mineral density positively correlates with age
  - Percentage greying of hair positively correlates with age
  - Percentage greying of hair negatively correlates with bone mineral density
32. Carefully read the following words:  
1. Vote, 2. Polling booth, 3. Campaign, 4. Minister.  
The most meaningful order of arrangement is
- 4, 3, 1, 2
  - 3, 4, 1, 2
  - 3, 2, 1, 4
  - 2, 1, 3, 4

33. The function that is done by brain in human beings, the same function is done in computers by  
(Human : Brain :: Computer : ?)

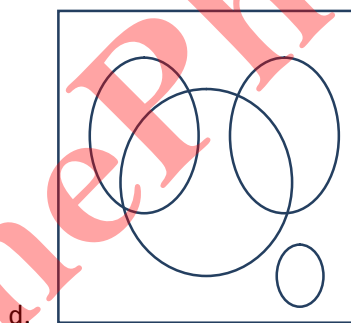
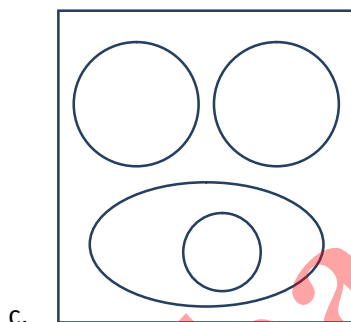
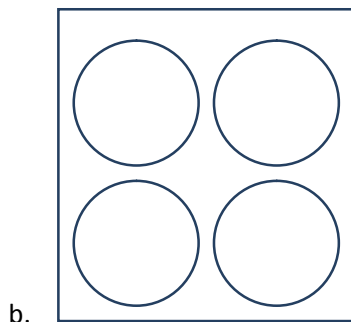
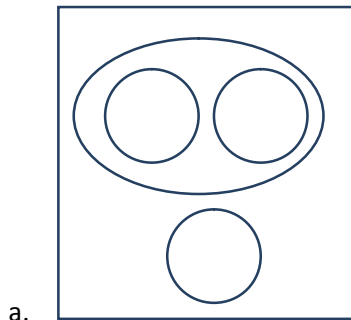
- a. Hard disc
- b. Random access memory
- c. Central processing unit
- d. Software

34. People are related to bus in the same way as oxygen is related to

(People : Bus :: Oxygen : ?)

- a. Lungs
- b. Heart
- c. Blood vessels
- d. Red blood cells

35. Which Venn diagram best describes the relationship between Earth, Venus, Sun and Planets?

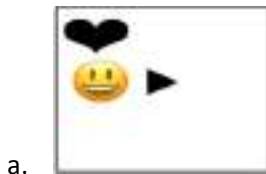




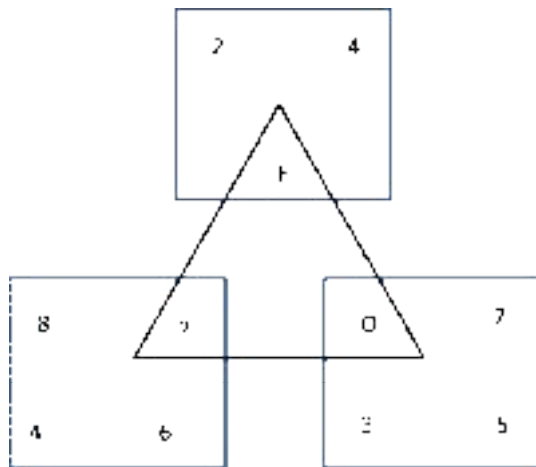
36. Carefully observe the sequences of images given below



Which of the following best fits in place of the question mark?



37. Which alphabet should replace the question mark?



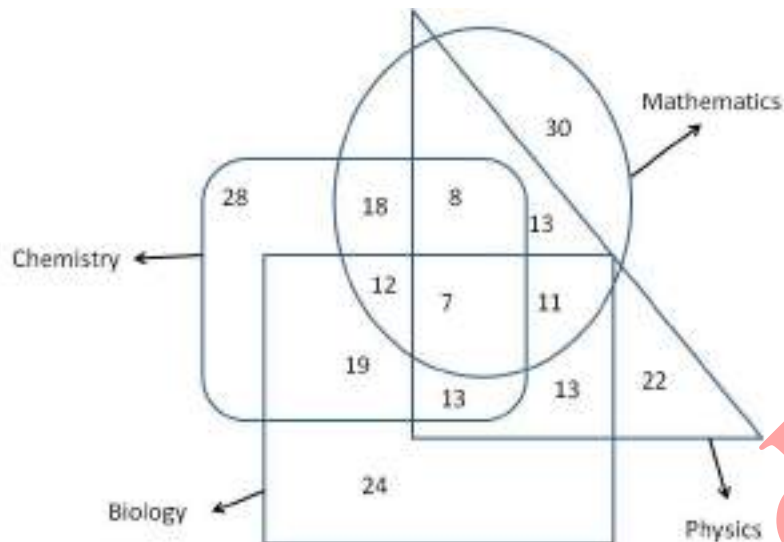
- a. X
- b. R
- c. S
- d. U

38. Carefully read the following words and choose the odd one out.

Fair, Just, Objective, Quiet, Impartial, Unbiased

- a. Just
- b. Quiet
- c. Unbiased
- d. Fair

39. The venn diagram given below shows the numbers of students obtaining a pass grade in the departments of physics, chemistry, mathematics and biology at a university.



What is the total number of students who have obtained a pass grade in both Mathematics and Physics?

- a. 11  
b. 13  
c. 24  
d. 39
40. Which of the following is related to resolution of a camera?
- a. Megapixel  
b. Megabytes  
c. Megabits  
d. Megacam
41. Which of the following is NOT used for biometrics
- a. Iris scan  
b. Finger print  
c. DNA print  
d. Retinal scan
42. In comparison to classroom teaching, the definitive advantage of online teaching is
- a. Accuracy of information  
b. Accessibility  
c. Personal touch  
d. Collective learning

43. LED, LCD, CRT are the names related to different types of
- Monitors
  - Printers
  - Sound Systems
  - Semiconductors
44. An educational institution would generally have the following in its domain name
- .org
  - .edu
  - .inst
  - .com
45. Which contents are lost when the computer turns off?
- Storage
  - Input
  - Output
  - Memory
46. A word in a web page that, when clicked, opens another document is called
- Anchor
  - Hyperlink
  - Reference
  - URL
47. Personal computers can be connected together to form a
- Server
  - Supercomputer
  - Enterprise
  - Network
48. All of the following are input device for a computer EXCEPT
- Keyboard
  - Mouse
  - Touch pad
  - Printer

49. Amongst the computer applications listed below, pick the odd one out

- a. Zoom
- b. Meet
- c. Webex
- d. Whatsapp

50. The application best suited for database management is

- a. MS word
- b. MS excel
- c. MS powerpoint
- d. MS access

**Paper-II Biochemistry**

51. The cellular organelles called “suicide bags” are

- a. Lysosomes
- b. Ribosomes
- c. Nucleolus
- d. Golgi's bodies

52. Carbonic anhydrase is an example of

- a. Lipoprotein
- b. Phosphoprotein
- c. Metalloprotein
- d. Chromoprotein

53. The protein present in hair is

- a. Elastin
- b. Prolamine
- c. Keratin
- d. Gliadin

54. Sulphur containing amino acid is

- a. Methionine
- b. Leucine
- c. Valine
- d. Asparagine

55. Deficiency of Vitamin A causes

- a. Xerophthalmia
- b. Hypoprothrombinemia
- c. Megaloblastic anemia
- d. Pernicious anemia

56. One of the following is not an aldose

- a. Glucose
- b. Galactose
- c. Mannose
- d. Fructose.

57. The nitrogenous base present in lecithin

- a. Choline
- b. Ethanolamine
- c. Inositol
- d. Serine

58. Esterification of cholesterol occurs at carbon position

- a. 1
- b. 2
- c. 3
- d. 4

59. Which one of the vitamin A functions as a steroid hormone

- a. Retinal
- b. Retinol
- c. Provitamin A
- d. Carotene

60. The functionally active form of vitamin D is

- a. Cholecalciferol
- b. Ergocalciferol
- c. Dehydrocholesterol
- d. Calcitriol.

61. An aromatic amino acid is

- a. Lysine
- b. Tyrosine
- c. Taurine
- d. Arginine

62. Synthesis of DNA is also known as

- a. Duplication
- b. Replication
- c. Transcription
- d. Translation

63. In the process of transcription, the flow of genetic information is from

- a. DNA to DNA
- b. DNA to protein
- c. RNA to protein
- d. DNA to RNA

64. A Gene is

- a. A single protein molecule
- b. A group of chromosomes
- c. An instruction for making a protein molecule
- d. A bit of DNA molecule

65. Adrenalin is synthesized from

- a. Adenine
- b. Adenosine
- c. Tyrosine
- d. Tryptophan

66. Hemophilia A is due to the deficiency of clotting factor

- a. X
- b. V
- c. VIII
- d. I

67. One of the following components of ETC possesses isoprenoid units

- a. Coenzyme
- b. Cytochrome
- c. Cytochrome b
- d. Non-heme iron

68. The lipoprotein possessing the highest quantity of phospholipid

- a. HDL
- b. LDL
- c. VLDL
- d. Chylomicrons



69. The two final products in the  $\beta$ -oxidation of odd chain fatty acids are

- a. Acetyl CoA and malonyl CoA
- b. Acetyl CoA and acetyl CoA
- c. Acetyl CoA and propionylCoA
- d. Acetyl CoA and succinyl CoA

70. Hormone sensitive lipase activity is inhibited by the hormone

- a. Epinephrine
- b. Insulin
- c. Thyroxine
- d. Glucocorticoids

71. The nitrogenous base not present in DNA structure

- a. Adenine
- b. Guanine
- c. Cytosine
- d. Uracil

72. The number of base pairs present in each turn (pitch) of B-form of DNA helix

- a. 9
- b. 10
- c. 11
- d. 12

73. 12 The number of heme groups present in myoglobin

- a. 1
- b. 2
- c. 3
- d. 4

74. Name the amino acid that directly participates in the synthesis of heme

- a. Methionine
- b. Aspartate
- c. Glycine
- d. Tryptophan

75. Carboxylation of clotting factors by Vitamin K is required to be biologically active. Which of the following amino acid is carboxylated?

- a. Histidine
- b. Histamine
- c. Glutamate
- d. Aspartate

76. Facilitated transport of glucose that is insulin insensitive (non-dependent) takes place in:

- a. Skeletal muscle
- b. Liver
- c. Adipose tissue
- d. Heart

77. In which of the following steps ATP is released?

- a. Phosphoenol pyruvate to pyruvate
- b. Glyceraldehyde 3 phosphate to 1,3 bisphosphoglycerate
- c. Fructose 6 phosphate to fructose 1,6 bisphosphate
- d. Glucose to Glucose 6 phosphate

78. Substrate level phosphorylation is by:

- a. Pyruvate kinase
- b. b. Phosphofructokinase
- c. c. Hexokinase
- d. d. ATP Synthase

79. Acetyl CoA can be converted into all of the following except:

- a. Glucose
- b. Fatty acids
- c. Cholesterol
- d. Ketone bodies

80. Pompe's disease is due to deficiency of:

- a. Debranching enzyme
- b. Muscle phosphorylase
- c. Acid maltase
- d. Branching enzyme

81. Products of uronic acid pathway in human beings are all except:

- a. Vitamin C
- b. Glucuronic acid
- c. Pentoses
- d. NADH

82. Which is not present in plants?

- a. Cholesterol
- b. Linolenic acid
- c. Linoleic Acid
- d. Lauric Acid

83. Hyperuricemia is not found in:

- a. Cancer
- b. Psoriasis
- c. Von Gierke's disease
- d. Xanthinuria

84. Triplex DNA is due to:

- a. Hoogsteen pairing
- b. Palindromic sequences
- c. Large no. of guanosine repeats
- d. Polypyrimidine tracts

85. During replication of DNA, which one of the following enzymes polymerizes the Okazaki fragments?

- a. DNA Polymerase I
- b. DNA Polymerase II
- c. DNA Polymerase III
- d. RNA Polymerase I

86. Strand of DNA from which mRNA is formed by transcription is called:

- a. Template
- b. Anti-template
- c. Coding
- d. Transcript

87. True about Ribozyme

- a. Peptidyltransferase activity
- b. Cuts DNA at specific site
- c. Participate in DNA synthesis
- d. GTPase activity

88. In the crystalline lens, level of tocopherol and Ascorbate is maintained by:

- a. Glutathione
- b. Glycoprotein
- c. Fatty Acid
- d. Glucose

89. Biotin act as a coenzyme for all except:

- a. Pyruvate to Oxaloacetate
- b. Acetyl CoA to Malonyl CoA
- c. Propionyl CoA to Methyl Malonyl CoA
- d. Glutamate to Gamma Carboxy Glutamate

90. Pantothenic acid containing coenzyme is involved in:

- a. Decarboxylation
- b. Dehydrogenation
- c. Acetylation
- d. Carboxylation

91. The form of THFA used in treatment is:

- a. N5 Formyl THFA
- b. N10 Formyl THFA
- c. N 5 Formimino THFA
- d. N5 Methyl THFA

92. Selenium is a cofactor in the following enzyme:

- a. Glutathione Peroxidase
- b. Cytochrome Oxidase
- c. Cytochrome Reductase
- d. Xanthine Oxidase

93. Heme biosynthesis do not occur in:

- a. Osteocyte
- b. Liver
- c. RBC
- d. Erythroid cells of Bone marrow

94. Acute Intermittent Porphyria is caused by:

- a. ALA synthase
- b. ALA dehydratase
- c. Ferrochelatase
- d. Uroporphyrinogen I synthase

95. Cytosolic Cytochrome C mediates:

- a. Apoptosis
- b. Electron transport
- c. Krebs cycle
- d. Glycolysis

96. Phenobarbitone inhibits which complex of ETC:

- a. Complex I
- b. Complex II
- c. Complex III
- d. Complex IV

97. Lac operon transcription is induced by:

- a. Glucose
- b. Glucose with inducer
- c. Inducer without glucose
- d. Both lactose and glucose

98. 43S preinitiation complex include all except:

- a. IF-3
- b. IF-1A
- c. IF-2
- d. IF-4F

99. Which enzyme involved in translation is often referred to as 'Fidelity enzyme':

- a. DNA polymerase
- b. RNA polymerase
- c. Aminoacyl tRNA synthetase
- d. Aminoacyl reductase

100. Apo B48 and Apo B100 is synthesized from the mRNA; the difference between them is due to:

- a. RNA splicing
- b. Allelic exclusion
- c. Deamination of cytidine to uridine
- d. Upstream repression

**Answer Key**

Q. No.	Answer
1	d
2	a
3	c
4	a
5	c
6	c
7	d
8	a
9	b
10	b
11	d
12	b
13	d
14	c
15	c
16	b
17	c
18	c
19	d
20	a
21	d
22	c
23	a
24	a
25	c

Q. No.	Answer
26	b
27	c
28	d
29	a
30	b
31	b
32	c
33	c
34	d
35	a
36	c
37	b
38	b
39	d
40	a
41	c
42	b
43	a
44	b
45	d
46	b
47	d
48	d
49	d
50	d

Q. No.	Answer
51	a
52	c
53	c
54	a
55	a
56	d
57	a
58	c
59	b
60	d
61	b
62	b
63	d
64	d
65	c
66	c
67	a
68	a
69	c
70	b
71	d
72	b
73	a
74	c
75	c

Q. No.	Answer
76	b
77	a
78	a
79	a
80	c
81	a
82	a
83	d
84	a
85	c
86	a
87	a
88	a
89	d
90	c
91	a
92	a
93	c
94	d
95	a
96	a
97	c
98	c
99	c
100	c