



CLASS-X	AARAMBH	DATE: 04-10-19
Max. Time: 120 min		Max marks: 320

Instructions:

- i. The test paper consists of **80** multiple choice questions numbered from **1 to 80**, each question followed by four alternatives 1, 2, 3 and 4.
- ii. Mental Ability 1 to 20, Mathematics 21 to 35, Physics 36 to 50 and Chemistry 51 to 65, Biology 66 to 80.
- iii. Each question has only one correct option.
- iv. (a) Each correct answer carries **+4 Marks**.
 (b) For each wrong answer **1 mark** will be **deducted**.

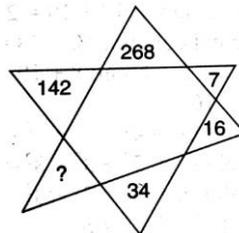
MAT (Q.NO.1 TO 20)

1.

3C	27D	9F
7I	21K	3M
4D	?	7J

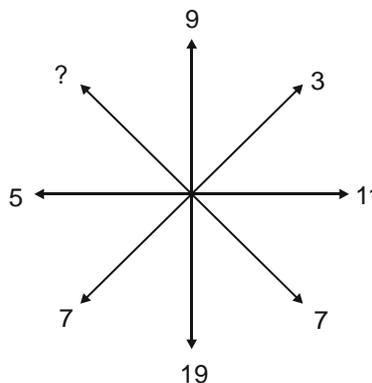
- 1) 11E 2) 28G 3) 35I 4) 48F

2.



- 1) 72 2) 70 3) 68 4) 66

3.



- 1) 4 2) 5 3) 12 4) 15

9. 'P-Q' means 'P is the mother of Q'; ' $P \times Q$ ' means 'P is the father of Q' and ' $P + Q$ ' means 'P is the daughter of Q'. Now if $M - N \times T + Z$, then which of the following is not true?
- 1) T is N's daughter 2) N is wife of Z
3) M is mother-in-law of Z 4) T is granddaughter of M
10. Reaching the place of meeting 20 minutes before 8.50hrs Sumit found himself thirty minutes earlier than the man who came 40 minutes late. What was the scheduled time of the meeting?
- 1) 8.00 2) 8.05 3) 8.10 4) 8.20
11. There are twenty people working in an office. The first group of five works between 8.00 A.M. and 2.00 P.M. The second group of ten works between 10.00 A.M. and 4.00 p.m. and the third group of five works between 12 noon and 6.00 P.M. There are three computers in the office which all the employees frequently use. During which of the following hours the computers are likely to be used most?
- 1) 10.00 A.M.– 12 noon 2) 12 noon – 2.00 P.M.
3) 10.00 P.M.– 3.00 P.M. 4) 2.00 P.M.– 4.00 P.M.
12. At what time between 5.30 and 6 will the hands of a clock be at right angles?
- 1) $43\frac{5}{11}$ min. past 5 2) $43\frac{7}{11}$ min. past 5
3) 40 min. past 5 4) 45 min. past 5
13. The angle between the minute hand and the hour hand of a clock when the time is 4.20, is:
- 1) 0° 2) 10° 3) 5° 4) 20°

Directions (Q.No-14) : In each of the following questions, If the given interchange are made in signs and numbers, which one of the four equations would be correct ?

14. Given interchanges : signs – and \div and numbers 4 and 8

1) $6 - 8 \div 4 = -1$ 2) $8 - 6 \div 4 = 1$ 3) $4 \div 8 - 2 = 6$ 4) $4 - 8 \div 6 = 2$

Directions (Q.No-15-16) : A solid cube of each side 8 cms, has been painted red, blue and black on pairs of opposite faces. It is then cut into cubical blocks of each side 2 cms.

15. How many cubes have no face painted?

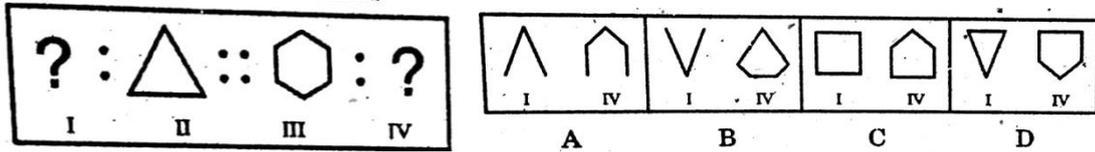
1) 0 2) 4 3) 8 4) 12

16. How many cubes have only one face painted?

- 1) 8 2) 16 3) 24 4) 28

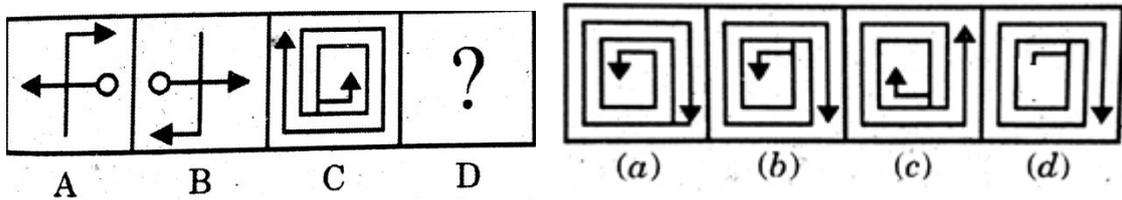
FIGURE ANALOGY(17-18)

17.



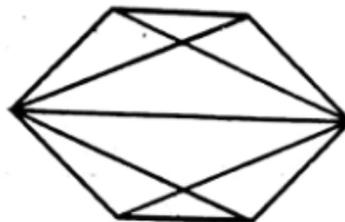
- 1) A 2) B 3) C 4) D

18.



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

Directions (Q. No: 19): Analysis the following figure and answer the given questions based on this figure.



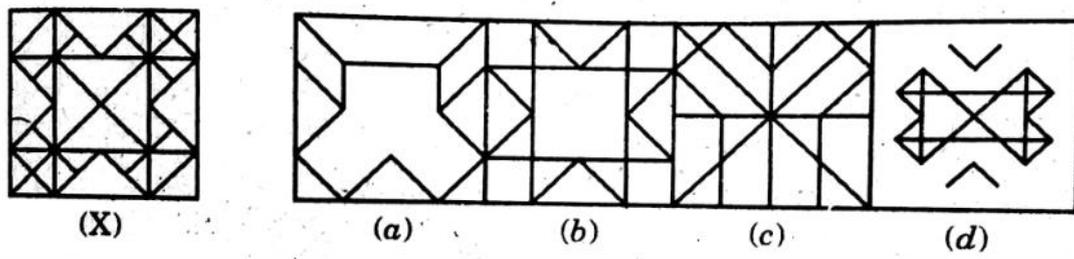
2)

19. Find the number of quadrilaterals in the given figure

- 1) 6 2) 7 3) 9 4) 11

Directions (Q. No: 20): Which of the following figure a, b, c and d are embedded figure X.

20.



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

MATHEMATICS (Q.NO.21 TO 35)

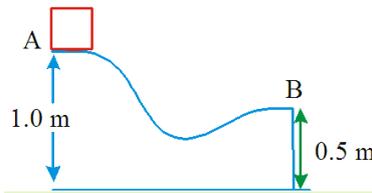
21. A circle is drawn with origin as the centre passes through $\left(\frac{13}{2}, 0\right)$. The point which does not lie in the interior of the circle is
- 1) $\left(\frac{-3}{4}, 1\right)$ 2) $\left(2, \frac{7}{3}\right)$ 3) $\left(5, \frac{-1}{2}\right)$ 4) $\left(-6, \frac{5}{2}\right)$
22. Angles of a triangle are in the ratio 2:4:3. The smallest angle of the triangle is
- 1) 60° 2) 40° 3) 80° 4) 20°
23. ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and $\angle ADC = 140^\circ$, then $\angle BAC$ is equal to
- 1) 80° 2) 50° 3) 40° 4) 30°
24. The length of each sides of an equilateral triangle having an area of $9\sqrt{3} \text{ cm}^2$ is
- 1) 8cm 2) 36cm 3) 4cm 4) 6cm
25. The lateral surfaces area of a cube is 256 m^2 . The volume of the cube is
- 1) 512 m^3 2) 64 m^3 3) 216 m^3 4) 256 m^3
26. In $\triangle PQR$, if $\angle R = \angle P$ and $QR = 4\text{cm}$ and $PR = 5\text{cm}$. Then, the length of PQ is
- 1) 4cm 2) 5cm 3) 2cm 4) 2.5cm
27. If angles A,B,C and D of the quadrilateral ABCD, taken in order are in the ratio 3:7:6:4, then ABCD is a
- 1) rhombus 2) parallelogram 3) trapezium 4) kite
28. If the HCF of 65 and 117 is expressible in the form $65m - 117$, then the values of m is
- 1) 4 2) 2 3) 1 4) 3
29. Find k , so that $x^2 + 2x + k$ is a factor of $2x^4 + x^3 - 14x^2 + 5x + 6$
- 1) -3 2) 4 3) -2 4) -1
30. A system of two linear equations in two variables has no solution, if their graphs.....
- 1) cut the x-axis 2) coincide
3) intersect only at a point 4) do not intersect at any point
31. If $\triangle ABC \sim \triangle DEF$ if $\angle A = 50^\circ$, then $\angle E + \angle F =$ _____
- 1) 130° 2) 40° 3) 80° 4) 140°

32. A medicine-capsule is in the shape of a cylinder of diameter 0.5 cm with two hemispheres stuck to each of its ends. The length of entire capsule is 2 cm. The capacity of the capsule is
- 1) 0.36 cm^3 2) 0.35 cm^3 3) 0.34 cm^3 4) 0.33 cm^3
33. If $\frac{\sin \theta - \cos \theta + 1}{\sin \theta + \cos \theta - 1} = \frac{x}{\tan \theta - \sec \theta + 1}$, then x =
- 1) 0 2) 2 3) $\tan \theta - \sec \theta + 1$ 4) $\tan \theta + \sec \theta - 1$
34. The probability of getting a bad egg in a lot of 400 is 0.035. The number of bad eggs in the lot is
- 1) 7 2) 14 3) 21 4) 28
35. If the mean of the data 12,15, x, 19,25,44 is 25 then x is
- 1) 20 2) 25 3) 30 4) 35

PHYSICS (Q.NO.36 TO 50)

36. A letter 'A' is constructed as a uniform wire of resistance 1 ohm/cm. The sides of the letter are 20 cm long and the cross piece in the middle is 10cm long while the vertex angle is 60° . The resistance of the letter between the two ends of the legs is
- 1) $40/3 \ \Omega$ 2) $80/3 \ \Omega$ 3) $40 \ \Omega$ 4) $10 \ \Omega$
37. Two different wires have specific resistivities, lengths, area of cross-sections are in the ratio 3:4, 2:9 and 8:27. Then the ratio of resistance of two wires is
- 1) $\frac{16}{9}$ 2) $\frac{9}{16}$ 3) $\frac{8}{27}$ 4) $\frac{27}{8}$
38. Resistance of a conductor is directly proportional to its _____
- 1) Length 2) Area of cross-section
3) Nature of the material 4) radius of wire
39. A straight vertical conductor carries a current. At a point 5 cm due north of it, the magnetic induction is found to be $20 \ \mu\text{T}$ due east. The magnetic induction at a point 10 cm east of it will be
- 1) $5 \ \mu\text{T}$ north 2) $10 \ \mu\text{T}$ north 3) $5 \ \mu\text{T}$ south 4) $10 \ \mu\text{T}$ south
40. Generators work on the principle of production
- 1) Dynamically induced emf 2) static induced emf
3) Thumb rule 4) Left hand rule
41. Commutator in DC machines have a role of which converts.
- 1) AC to DC 2) DC to AC
3) Both AC to DC & DC to AC 4) none of these

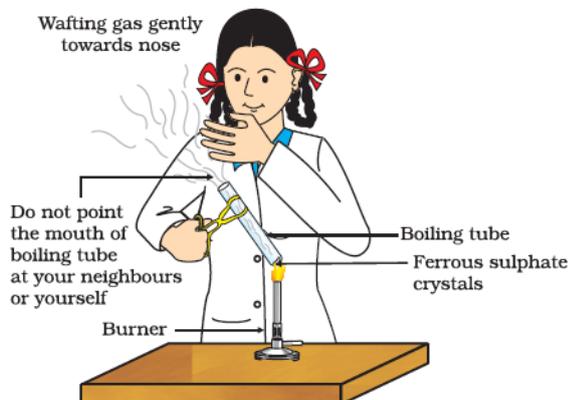
42. The area under velocity-time graph gives the value of
- 1) Distance travelled
 - 2) velocity
 - 3) Acceleration
 - 4) Speed
43. A body moving with uniform acceleration has velocities 20 ms^{-1} and 30 ms^{-1} when passing two points A and B. Then the velocity midway between A and B is:
- 1) 25 ms^{-1}
 - 2) $10\sqrt{6} \text{ ms}^{-1}$
 - 3) 24 ms^{-1}
 - 4) 25.5 ms^{-1}
44. Mass M is divided into two parts xM and $(1-x)M$. For a given separation, the value of x for which the gravitational attraction between the two pieces becomes maximum is
- 1) $\frac{1}{2}$
 - 2) $\frac{3}{5}$
 - 3) 1
 - 4) 2
45. Two bodies one held 1 m vertically above the other, are released simultaneously and fall freely under gravity. After 2seconds, the relative separation of the bodies will be:
- 1) 4.9 m
 - 2) 9.8 m
 - 3) 19.6 m
 - 4) 1 m
46. Figure shows a particle sliding on a frictionless track which terminates in a straight horizontal section. If the particle starts slipping from the point A, how far away from the track will the particle hit the ground?



- 1) 4 m
 - 2) 1m
 - 3) 8 m
 - 4) Zero
47. One unit of electrical energy is equal to
- 1) $3.6 \times 10^5 \text{ J}$
 - 2) $3.6 \times 10^6 \text{ J}$
 - 3) $0.36 \times 10^5 \text{ J}$
 - 4) $360 \times 10^5 \text{ J}$
48. Loud sound can travel a larger distance, due to
- 1) Higher amplitude
 - 2) Higher energy
 - 3) High frequency
 - 4) High speed
49. A wave in slinky travelled two and fro in 5 sec the length of the slinky is 5m. What is the velocity of wave?
- 1) 10m.s
 - 2) 5m/s
 - 3) 2m/s
 - 4) 25m/s
50. When two forces act in opposite directions, then net force acting two forces
- 1) sum of two factors
 - 2) difference between two factors
 - 3) division of two forces
 - 4) none of these

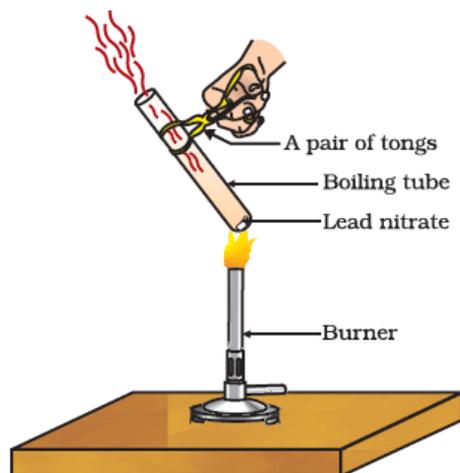
CHEMISTRY (Q.NO.51 TO 65)

51. * Take about 2 g ferrous sulphate crystals in a dry boiling tube.
* Heat the boiling tube over the flame of a burner or spirit lamp as shown in Fig.



In the above activity Identify which of the gases are liberated?

- 1) SO_2, SO_4 2) Only SO_2 3) SO_2, SO_3 4) SO_4
52. Isotope of Co is used in treatment of
1) Aids 2) Cancer 3) Malaria 4) Typhoid
53. Atomic mass of an atom can be determined very accurately with help of an instrument called
1) Galvanometer 2) Protoclometer 3) Mass Spectrometer 4) Ammeter
54. Which of the following gas is flushed in to potato chips bag
1) NH_3 2) O_2 3) N_2 4) CO_2
55. Apples, peals, bananas, potatoes etc., contain enzyme
1) polyphenol oxidase or tyrosinase 2) tyrosine
3) peptidase 4) lusine
56. Quantity of metal produced when a mixture of 13.1 g of Aluminium and 14.3 g of MnO_2 is heated is
1) 9 grams 2) 18 g 3) 20 g 4) 40 g
57. Henderson's equation for methyl orange
1) $\text{MeOH} \rightleftharpoons (\text{MeOH})^{-1}$ 2) $\text{MeOH} \rightleftharpoons \text{Me}^+ + \text{OH}^-$
3) $\text{MeOH} \rightleftharpoons \text{Me}^- + \text{OH}^-$ 4) $\text{MeOH} \rightleftharpoons \text{Me}^+ + \text{OH}^+$
58. pH value of a solution is changed from '2' to '5', then the H^+ ion concentration of the solution
1) Increases by 3 times 2) Decreases by 3 times
3) Increases by 1000 time 4) Decreases by 1000 time



59.

* Take about 2 g lead nitrate powder in a boiling tube.

* Hold the boiling tube with a pair of tongs and heat it over a flame, as shown in Fig.

The above activity is an example for?

- 1) Photo Chemical reaction 2) Thermal decomposition reaction
3) Oxidation reaction 4) Reduction reaction

60. The wavelength of light having frequency 60 MHz is :

- 1) 2.0 m 2) 6.0 m 3) 20m 4) 5.0m

61. A few drops of universal indicator were added to three unknown colourless solutions P, Q and R as shown in the following diagram. A student observed the changes in colour as green in test tube P, red in test tube Q and violet in test tube R.

What will be the decreasing order of pH value of these solutions?

- 1) $Q > P > R$ 2) $P > R > Q$ 3) $Q > R > P$ 4) $R > P > Q$

62. Calculate the wave length, frequency and wave number of a light whose period is 2.0×10^{-10} s

Wave length Frequency Wave number

- 1) 3×10^6 mm $2 \times 10^{-3} s^{-1}$ $3.3 \times 10^3 m^{-1}$
2) $6 \times 10^{-2} m$ $5 \times 10^9 s^{-1}$ $16.66 m^{-1}$
3) $6 \times 10^{-2} m$ $2 \times 10^9 s^{-1}$ $16.66 m^{-1}$
4) $5 \times 10^{-2} m$ $3 \times 10^9 s^{-1}$ $16.66 m^{-1}$

63. What is the percentage of aluminium oxide in bauxite?

- 1) 20% – 30% 2) 30% – 40% 3) 40% – 60% 4) 50% – 70%

64. Pyrolusite ore contains

- 1) Fe 2) Al 3) Mn 4) Cu

65. Tin and Lead can be refined by

- 1) Cupellation 2) Liquefaction 3) Poling 4) Cupellation

BIOLOGY (Q.NO.66 TO 80)**66. Identify the correct sequence of events with regards to pulmonary respiration**

- 1) Breathing → Gaseous exchange at tissue level → blood → cellular respiration
- 2) Breathing → gaseous exchange at lungs → gaseous exchange at tissue level → cellular respiration
- 3) Breathing → gaseous exchange at lungs → blood → gaseous exchange at tissue level → cellular respiration
- 4) Breathing → gaseous exchange at tissue level → gaseous exchange at lungs level → cellular respiration

67 The correct sequence of Anaerobic reactions in Yeast is

- 1) Glucose $\xrightarrow{\text{cytoplasm}}$ pyruvate $\xrightarrow{\text{mitochondria}}$ ethanol + CO₂
- 2) Glucose $\xrightarrow{\text{cytoplasm}}$ pyruvate $\xrightarrow{\text{cytoplasm}}$ lactic acid
- 3) Glucose $\xrightarrow{\text{cytoplasm}}$ pyruvate $\xrightarrow{\text{mitochondria}}$ lactic acid + CO₂
- 4) Glucose $\xrightarrow{\text{cytoplasm}}$ pyruvate $\xrightarrow{\text{cytoplasm}}$ ethanol + CO₂

68. Transport of end products from intestine into the blood through the walls of intestine is called

- 1) Digestion
- 2) Emulsification
- 3) Assimilation
- 4) Absorption

69. Which of the following events does not occur in photosynthesis:

- 1) Conversion of light energy into chemical energy
- 2) Reduction of carbon dioxide to carbohydrates
- 3) Oxidation of carbon to carbon dioxide
- 4) absorption of light energy by chlorophyll

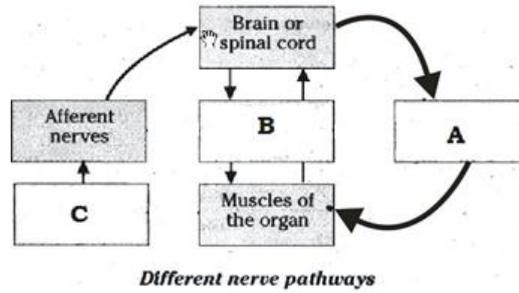
70. Identify the mismatch related to the circulatory systems of different vertebrates

- 1) Fishes – Single circulation
- 2) Amphibians – incomplete double circulation
- 3) Birds – double circulation with systemic circulation only.
- 4) Mammals – double circulation with both systemic and pulmonary circulations

71. Column- I**Column-II**

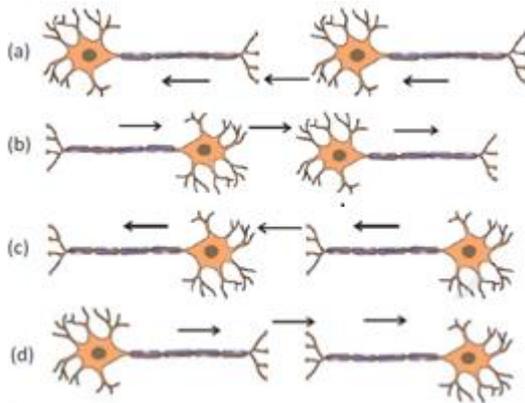
- | | |
|-----------------------|---|
| a) Superior Venacava | p) carries deoxygenated blood to lungs |
| b) Inferior vena cava | q) carries oxygenated blood from lungs |
| c) Pulmonary artery | r) brings deoxygenated blood from lower parts of body to right atrium |
| d) Pulmonary vein | t) brings deoxygenated blood from upper parts of body into right atrium |
| 1) a-q,b-t,c-r,d-p | 2) a-t,b-p,c-q,d-r |
| 3) a-t,b-r,c-p,d-q | 4) a-t,b-p,c-r,d-q |

72. Identify the parts A, B & C in the diagram given below



- 1) A-Efferent nerves, B-Association nerves, C-Effector organ
- 2) A-Motor nerves, B-Association nerve C-Sensory nerve
- 3) A-Sensory nerve, B-Association nerves, C-Sense organ
- 4) A-Motor nerve, B-Association nerves, C-Sense organ

73. What is the correct direction of flow of electrical impulses?



- 1) All the correct
- 2) a & b
- 3) c only
- 4) All are incorrect

74. During dialysis the cleaned blood is pumped back into the body through the vein after adding anti-coagulant called

- 1) Porphyrin
- 2) Sodium glycolate
- 3) Heparin
- 4) Haeme

75. Generally coloured and fragrant metabolites produced by plants are

- 1) Fats and alkaloids
- 2) proteins resins and gums
- 3) Tannins, latex and gums
- 4) Fats and carbohydrates

76. Name the plant hormone responsible for the following

- a)Elongation of the stem
- b)Growth of the stem
- c)Promotion of cell division
- d)Falling of senescent leaves

- 1)Auxins, ethylene, Abcistic acid, Gibberellins
- 2) Gibberellins, ethylene, Abcistic acid, Gibberellins
- 3) Auxins Gibberellins, cytokinins, Abcistic acid
- 4) Gibberellins, Auxins, cytokinins, Abcistic acid

77. Choose the vascular plants out of these

- 1) Mosses 2) Liverworts 3) Hornworts 4) Ferns

78. Identify the incorrect statement

i) When a disease causing organism enters our body it causes infection, it multiplies and grows in the body called host and micro-organisms multiplies in the host body

ii) Air borne Diseases are Cholera, typhoid, hepatitis.

iii) The disease which does not spread by contact between infected and healthy person through air and water, is called non-infectious disease.

iv) Proper nourishment or healthy diet that includes all the necessary nutrients as well as vitamins and minerals is necessary for better functioning of our immune system.

- 1) i and ii 2) ii only 3) iii and iv 4) iv only

79. DPT vaccine is not given against the disease

- 1)Diphtheria 2)Pertusis 3)Polio 4)Tetanus

80. Venus and mars have no life because

- 1) They have no atmosphere
2) Their atmosphere has 95 – 97% oxygen
3) Their atmosphere has only oxygen
4) Their atmosphere has 95 – 97% carbon dioxide

***** ALL THE BEST *****