



CLASS-IX	AARAMBH	DATE: 03-10-19
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)

Directions (Questions 1-2): In a certain code language,

- (A) 'mxy das zci' means 'good little frock';
 (B) 'jmx cos zci' means 'girl behaves good';
 (C) 'nvg drs cos' means 'girl makes mischief';
 (D) 'das ajp cos' means 'little girl fell'.

1. Which word in that language stands for 'frock'?
 1) zci 2) das 3) nvg 4) None of these
2. Which of the given statements is superfluous and can be dispensed with while answering the above question?
 1) A 2) B 3) C 4) D
3. If ACNE can be coded as 3,7,29,11, then BOIL will be coded as
 1) 5,29,19,27 2) 5,29,19,25 3) 5,31,21,25 4) 5,31,19,25

Directions (Q.No-4-7) : A wooden cube is painted Blue on all the four adjoining sides and Green on two opposite sides i.e. top and bottom. It is then cut at equal distances at right angles four time vertically (top to bottom) and two times horizontally (along the sides).

4. How many cubes will have one face painted only in Blue?
 1) 1 2) 2 3) 3 4) 4

5. How many cubes will have one face painted only in Green?

- 1) 1 2) 2 3) 3 4) 4

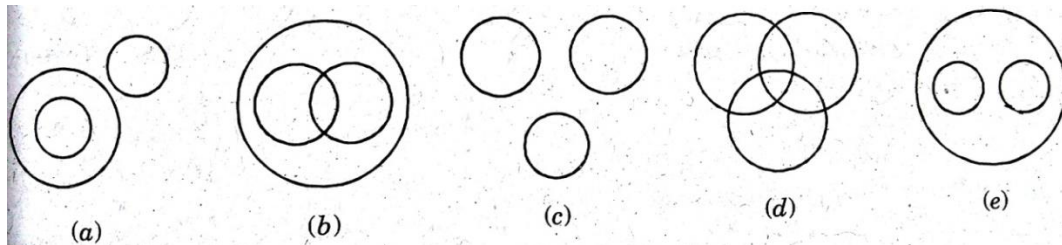
6. How many cubes are formed in all?

- 1) 16 2) 24 3) 27 4) 32

7. How many cubes will have at least three sides painted?

- 1) 12 2) 8 3) 6 4) 3

Directions (Q.No-8 to 11): Each of the following questions below contains three elements. These three elements may or not have some linkage. Each group of the elements may fit into one of the diagrams at (a), (b), (c), (d) and (e). You have to indicate groups of elements in each questions fit into which of the diagram given below. The letter indicating the diagram is the answer.



8. Machine, Lathe, Mathematics

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

9. Honesty, Intelligence, Aptitude

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

10. Diseases, Leprosy, Scurvy

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

11. Doctors, Lawyers, Professionals

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

12. 2A11, 4D13, 12G17,?

- 1) 36I19 2) 36J21 3) 48J21 4) 48J23

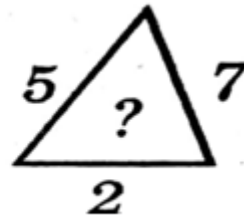
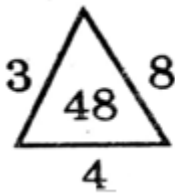
13. Thirty-six vehicles are parked in a parking lot in a single row. After the first car, there is one scooter. After the second car, there are two scooters. After the third car, there are three scooters and so on. Work out the numbers of scooters in the second half of the row.

- 1) 10 2) 12 3) 15 4) 17

14. In a row of a boys facing the North, A is sixteenth from the left end and C is sixteenth from the right end. B, who is fourth to the right of A, is fifth to the left of C in the row. How Many boys are there in the row?

- 1) 39 2) 40 3) 41 4) 42

15.



- 1) 27 2) 35 3) 54 4) 64

Directions (Q. No-16) : Read the following information carefully and answer the question given below:

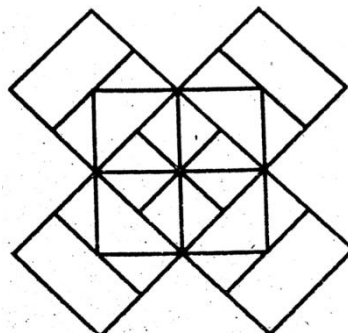
- i) 'P×Q' means 'P is the father of Q';
- ii) 'P-Q' means 'P is the sister of Q';
- iii) 'P+Q' means 'P is the mother of Q';
- iv) 'P÷Q' means 'P is the brother of Q';

16. Which of the following represents 'R' is niece of M'?

- 1) $M \div K \times T - R$ 2) $M - J + R - N$
 3) $R - M \times T \div W$ 4) Cannot be determined

Directions (Q.No-17) : Count the number of squares in the following figures

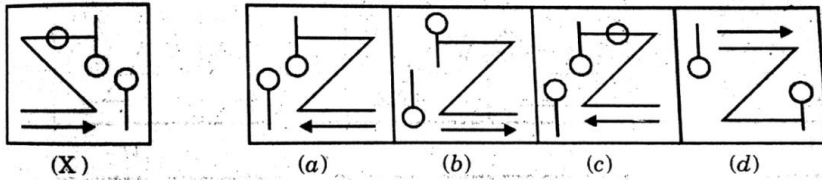
17.



- 1) 22 2) 20 3) 18 4) 14

Directions (Questions No-18) : Mirror image

18.



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

19. Choose the alternative which is closely resembles the water-image of the given combination.

monday

(1) yadnom

(2) γsbpnom

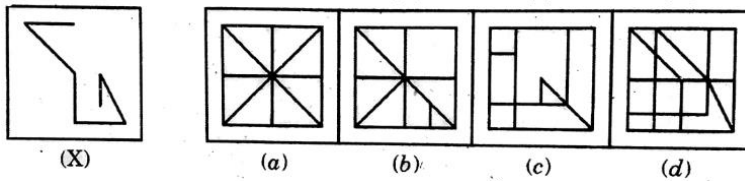
(3) λequow

(4) wouqsl

- 1) 1 2) 2 3) 3 4) 4

Directions (Q. No: 20): Embedded Figure.

20.



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

MATHEMATICS (Q.NO.21 TO 35)

21. If $\sqrt{1 + \frac{x}{169}} = 1\frac{1}{13}$ then x is equal to :

- 1) 1 2) 13 3) 27 4) None of these

22. By what least number by which 3600 be divided to make it a perfect cube?

- 1) 9 2) 50 3) 300 4) 450

23. If $a^3 = 117 + b^3$ and $a = 3 + b$, then the value of $a + b$ is:

- 1) ± 7 2) 49 3) 0 4) ± 13

24. If $(\sqrt[3]{4})^{2x + \frac{1}{2}} = \frac{1}{32}$, then $x =$ _____

- 1) -2 2) 4 3) -6 4) -4

25. The factors of $a^2 - b^2 - 4c^2 + 4d^2 - 4(ad - bc)$ are:

- 1) $(a + 2d + b + 2c)(a - 2d - b + 2c)$ 2) $(a - 2d + b - 2c)(a + 2d - b + 2c)$
 3) $(a - 2d + b - 2c)(a - 2d - b + 2c)$ 4) $(a - 2d - b - 2c)(a - 2d + b + 2c)$

26. If $(3x+4)^2 + (3x-2)^2 = (6x+5)(3x-2) + 12$, then the value of x is:

- 1) 2 2) 1 3) -3 4) -2

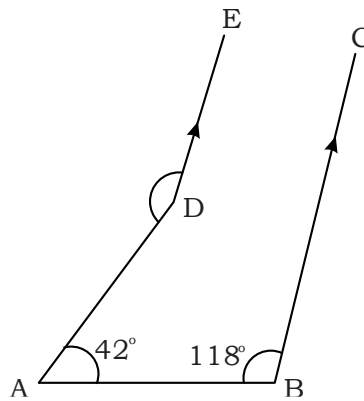
27. A rectangular carpet has an area of $60m^2$. Its diagonal and longer side together equal 5 times the shorter side. The length of the carpet is:

- 1) 5 m 2) 12 m 3) 13 m 4) 14.5 m

28. The LCM of the polynomials $xy + yz + zx + y^2$ and $x^2 + xy + yz + zx$ is:

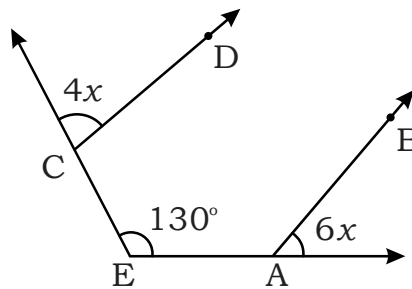
- 1) $x + y$ 2) $y + z$
 3) $(x + y)(y + z)(z + x)$ 4) $x^2 + y^2$

29. In the given figure, $DE \parallel BC$, $\angle ABC = 118^\circ$, $\angle DAB = 42^\circ$, then $\angle ADE$ is equal to



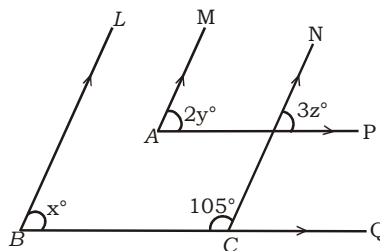
- 1) 118° 2) 42° 3) 138° 4) 160°

30. In the given figure, $AB \parallel CD$. Find x .



- 1) 26° 2) 13° 3) 23° 4) 46°

31. In the figure BL , AM and CN are parallel to each other and AP and BQ are also parallel to each other. Then $x^\circ - y^\circ + 2z^\circ$ is



- 1) 75° 2) 62.5° 3) 135.5° 4) 87.5°

32. A shop keeper sold two TV sets at Rs. 9,9000 each. He sold one at a profit of 10% and the other at a loss of 10%, then the loss percentage is
- 1) 0% 2) 1% 3) 2% 4) 3%
33. 5 pumps are required to fill a tank in $1\frac{1}{2}$ hours. How many pumps of the same type are used to fill the tank in half an hour?
- 1) 5 pumps 2) 10 pumps 3) 15 pumps 4) 20 pumps
34. ABCD is a rectangle. O is the interior point of a rectangle. If OA = 3cm, OC = 4cm, then $OB^2 + OD^2$ is
- 1) 10cm 2) 25cm 3) 15cm 4) 20cm
35. A number when divided by 5 leaves 3 as remainder. If the square of the same number is divided by 5, the remainder obtained is
- 1) 9 2) 4 3) 1 4) 3

PHYSICS (Q.NO.36 TO 50)

36. A mass m extends a vertical helical spring of spring constant k by x m at the surface of earth. Extension in spring by the same mass at height h metre above the surface of earth is
- 1) $\frac{GMm}{k(R+h)}$ 2) $\frac{GMm}{kR^2}$ 3) $\frac{(R+h)^2}{R^2}x$ 4) $\frac{R^2}{(R+h)^2}x$
37. A tennis ball is dropped on to the floor from a height of 10 m. It rebounds to a height of 2.5m. If the ball is in contact with the floor for 0.01 second, what is the average acceleration during the contact? Take $g = 10 \text{ m/s}^2$
- 1) 2121m/s² 2) 1121m/s² 3) 1021m/s² 4) 921m/s²
38. A body travelling with a speed of more than the velocity of sound in air is said to travel with
- 1) Supersonic speed 2) hypersonic speed
3) Ultrasonic speed 4) infrasonic speed
39. When a motor boat in a sea travels faster than sound, then waves just like shock-waves are produced on the surface of water. These waves are called.....
- 1) Shock waves 2) Doppler's waves
3) Refracted waves 4) Bow waves
40. Vibrations inside the ear are amplified by the three bones namely the _____ in the middle ear.
- 1) Hammer, anvil and stirrup 2) hammer, anvil and pinna
3) Hammer, cochlea and stirrup 4) auditory bone, anvil and stirrup

41. Pole Star cannot be seen in which of the following countries?

- 1) USA 2) India 3) UK 4) New Zealand

42. The correct ascending order of distance of planets from sun is

- 1) Mars, Earth, Jupiter, Saturn 2) Earth, Mars, Jupiter, Saturn
3) Earth, Mars, Saturn, Jupiter 4) Earth, Jupiter, Mars, Saturn

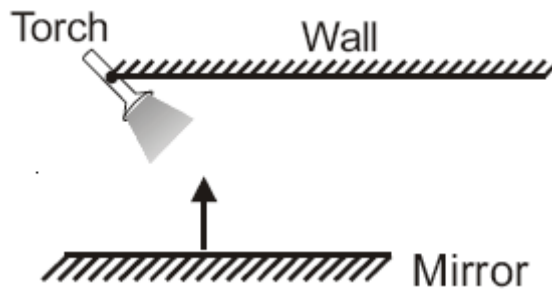
43. Two persons are holding a rope of negligible weight tightly at its ends so that it is horizontal. A 15 kg weight is attached to the rope at the mid-point which now no longer remains horizontal. The minimum tension required to completely straighten the rope is

- 1) 15 kg 2) 15/2 kg 3) 5 kg 4) Infinitely large

44. When a graph of one quantity versus another results in a straight line, the quantities are

- 1) Directly proportional 2) constant
3) Inversely proportional 4) independent of each other

45. Figure shows a torch sending a parallel beam of light fixed on a wall and a plane mirror which forms a spot on the wall. As the mirror moves towards the wall, the spot on the wall moves



- 1) Towards the torch 2) Away from the torch
3) First closer to torch then away 4) now here

46. A body is at rest on the surface of the earth. Which of the following statements is correct?

- 1) No force is acting on the body
2) Only weight of the body acts on it
3) Net downward force is equal to the net upward force
4) None of the above statement is correct

47. Which one of the following objects has the greatest inertia?

- 1) Ping pong ball 2) a golf ball 3) a soft ball 4) a bowling ball

48. Where the value of gravitational acceleration is less due to the diurnal motion of earth?

- 1) At Polar region 2) At equator
3) Tropic of Cancer or Tropic of Capricorn 4) None of this

49. If F_1 is the magnitude of the force exerted on earth by moon and F_2 is the magnitude of force exerted on moon by earth then

- 1) $F_1 > F_2$ 2) $F_1 = F_2$ 3) $F_1 < F_2$ 4) none of these

50. Which of the following is the third-law force that accompanies the force that an apple exerts on a tree? It is the force that the

- 1) Earth exerts on the apple 2) apple exerts on the earth
3) Tree exerts on the apple 4) air exerts on the apple

CHEMISTRY (Q.NO.51 TO 65)

- 51. Which of the following not an example for natural resources:**
1) Water 2) Petrol 3) Coal 4) Plastic
- 52. Name the petroleum products used for surfacing of roads.**
1) Asphalt 2) Bitumen.
3) Both Asphalt and Bitumen 4) Coal
- 53. _____ is an ionized gaseous state of matter.**
1) Bose Einstein condensate 2) Plasma condensate
3) Liquid 4) Solid
- 54. A solution contains 20 gm of sugar in 80ml solution calculate the concentration in terms of mass by volume percentage of solution:**
1) 30% 2) 20% 3) 25% 4) 10%
- 55. Acid rain can be caused by the burning of:**
1) Petrol. 2) CNG 3) Diesel 4) Coal
- 56. Which of the following metals exhibits good conductor of electricity:**
1) Tungsten, lead 2) Copper, silver 3) Bismuth, tungsten 4) Silver, Tin
- 57. Identify the most reactive metal:**
1) Potassium 2) Calcium 3) Zinc 4) Lead
- 58. The molecular formula of lime stone is:**
1) $NaNO_3$ 2) $MgCO_3$ 3) $CaCO_3$ 4) $ZnCO_3$
- 59. When a solute is present in trace quantities, it is convenient to express the concentration in:**
1) Weight percentage 2) Volume percentage
3) Parts per million 4) Normality
- 60. _____ is a condensate super fluid phase formed by atoms, cooled very near to absolute zero temperature.**
1) Gas 2) Solid 3) Plasma 4) Bose Einstein
- 61. Which of the following one is non-combustible material:**
1) Kerosene 2) LPG 3) CNG 4) Pebble
- 62. The chemical name of Washing soda is _____**
1) Sodium Bicarbonate 2) Sodium Chloride
3) Sodium Carbonate 4) Sodium Hydroxide
- 63. Nichrome is an alloy of:**
1) Ni + Fe + Cr 2) Fe + Hg 3) Ni + Hg 4) Ni + Zn
- 64. What is the calorific value of compressed natural gas?**
1) 17000 2) 55000 3) 150000 4) 50000
- 65. Which of the following is known as liquid gold:**
1) Kerosene 2) Diesel 3) Petroleum 4) Paraffin wax

BIOLOGY (Q.NO.66 TO 80)

66. Observe the below diagram and identify the function



- 1) Traps sunlight
- 2) Conducts respiration
- 3) Transports food and water
- 4) All the above

67. Inter cellular connections in plant cells are called

- 1) Middle lamella
- 2) Micro fibrils
- 3) matrix
- 4) plasmodesmata

68. The infoldings in mitochondria are known as

- 1) Cristae
- 2) matrix
- 3) cisternae
- 4) grana

69. Find out the false statement

- 1) Golgi apparatus is involved with the formation of lysosomes
- 2) Nucleus, mitochondria and plastid have DNA, hence they are able to make their own structural proteins
- 3) Mitochondria is said to be the power house of the cell as ATP is generated in them
- 4) Cytoplasm is called as protoplasm

70. A cell will swell up if

- 1) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium.
- 2) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell
- 3) The concentration of water molecules is same in the cell and in the surrounding medium
- 4) Concentration of water molecules does not matter.

71. First living cells were observed by

- 1) A.V.Leeuwenhoek
- 2) Robert Hooke
- 3) R.Virchow
- 4) Robert Brown

72. This tissue protects the plants from loss of water, mechanical damage and invasion by parasitic and disease causing organisms

- 1) Xylem
- 2) Ground tissue
- 3) Vascular tissue
- 4) **Dermal tissue**

73. Match the following

- | | |
|---------------------------------|--|
| i) Apical meristem | a) Internodes |
| ii) Phloem | b) food material |
| iii) Cambium | c) at the tips |
| iv) Intercalary Meristem | d) increase in diameter of the stem |

- | | |
|---------------------------|---------------------------|
| 1) i-a, ii-b, iii-c, iv-d | 2) i-c, ii-b, iii-d, iv-a |
| 3) i-a, ii-c, iii-b, iv-d | 4) i-d, ii-b, iii-c, iv-a |

74. I am an animal tissue. my cells are tightly packed without intercellular spaces and form continuous sheets. I am

- | | | | |
|--------------|---------|----------------------|----------|
| 1) Cartilage | 2) Bone | 3) Epithelial tissue | 4) Blood |
|--------------|---------|----------------------|----------|

75. MATCHING SKILLS

Column A

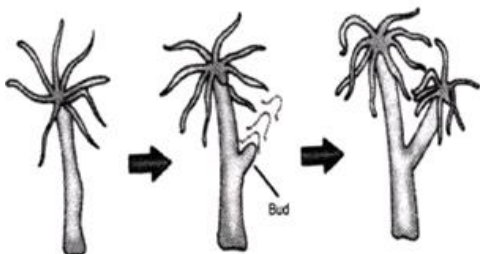
- 1) Yeast
- 2) Ovary
- 3) Single parent
- 4) Testes
- 5) Oviparous

Column B

- a) asexual reproduction
- b) lays eggs
- c) budding
- d) ovum
- e) sperm

- | | |
|----------------------------|----------------------------|
| 1) 1-d, 2-c, 3-a, 4-e, 5-b | 2) 1-c, 2-d, 3-e, 4-a, 5-b |
| 3) 1-c, 2-d, 3-a, 4-e, 5-b | 4) 1-c, 2-d, 3-a, 4-b, 5-e |

76. Observe the diagram and choose the correct answer



- 1) It shows vegetative reproduction by budding
- 2) Its vegetative reproduction seen in Euglena
- 3) It's a kind of sexual reproduction
- 4) External and internal changes occur during developing stages

77. **Match the following**

Column A

- i) Pituitary gland**
- ii) Pancreas**
- iii) Adrenal Gland**
- iv) Metamorphosis**

- 1)i-e, ii-a, iii-d, iv-b
- 3)i-b, ii-d, iii-a, iv-e

Column B

- a) Stress**
- b) Thyroxin**
- c) Bile Juice**
- d) Insulin**
- e) Growth hormones**

- 2)i-e, ii-d, iii-a, iv-b
- 4)i-e, ii-b, iii-a, iv-d

78. **Which term used for secretions of endocrine glands responsible for changes taking place in the body?**

- 1) Adolescence
- 2) Hormones
- 3) Menstruation
- 4) Insulin

79. **Rice, Wheat, Maize, Barley, Oats are all**

- 1) Oil Crops
- 2) Pulses
- 3) Cereal crops
- 4) Leguminous crops

80. **Areas meant for conservation of biodiversity called**

- 1) Biosphere
- 2) Deforestation
- 3) Biosphere reserves
- 4) Respiration
