PART-I
IQ (MENTAL ABILITY)

This section contains **20 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

1. Arrange the given words Alphabetical Order and choose the one that comes first.
(1) Tenacious   (2) Terminate   (3) Temperature   (4) Temple

2. If × stands for 'addition', ÷ stands for 'subtraction', + stands for 'multiplication' and – stands for 'division', then $20 × 8 ÷ 8 – 4 + 2 = ?$
(1) 80   (2) 25   (3) 24   (4) 5

3. Choose the pair in which the words are differently related from the rest.
(1) Shirt : Dress   (2) Boy : Girl   (3) Mango: Fruit   (4) Table: Furniture

4. Choose the alternative which is closely resembles the mirror image of the given combination

EFFECTIVE

(1) ƎVITƆƎℲℲƎ   (2) EVITCEFFE   (3) ℲℲƎƆTIVƎ   (4) ƎVITƆƎℲℲƎ

5. Starting from the point X, Jayant walked 15 m towards west. He turned left and walked 20 m. He then turned left and walked 15 m. After this he turned to his right and walked 12 m. How far and in which directions is now Jayant from X?
(1) 32 m, South   (2) 47 m, East   (3) 42 m, North   (4) 27 m, South

6. Choose the correct water image of the given figure (X) from amongst the four alternatives.

(X)   (1)   (2)   (3)   (4)

7. If Q means 'add to', J means 'multiply by', T means 'substract from' and K means 'divide by' then $30 K 2 Q 3 J 6 T 5 = ?$
(1) 18   (2) 28   (3) 31   (4) 103

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

monday

(1) yadnom   (2) γɛbnom   (3) λɘquoɯ   (4) ɯouqɒλ

9. Arrange the words given below in a meaningful sequence.
1. Nation   2. Village   3. City   4. District
5. State
(1) 2, 3, 4, 5, 1   (2) 2, 3, 4, 1, 5   (3) 1, 3, 5, 4, 2   (4) 1, 2, 3, 4, 5

10. In a row of trees, one tree is fifth from either end of the row. How many trees are there in the row ?
(1) 8   (2) 9   (3) 10   (4) 11

11. One morning after sunrise, Vimal started to walk. During this walking he met Stephen who was coming from opposite direction. Vimal watch that the shadow of Stephen to the right of him (Vimal). To Which direction Vimal was facing?
(1) East   (2) West   (3) South   (4) Data inadequate

12. Find out the alternative figure which contains figure (X) as its part.
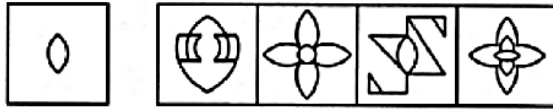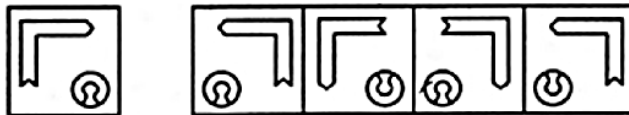

(X)　　(1)　(2)　(3)　(4)

(1) 1　　　　(2) 2　　　　(3) 3　　　　(4) 4

13. In a certain code language STUDENT is written as TUTDNES. How will SOURCES be written in that code language?

(1) SOURCES　　　　(2) SUORECS

(3) SRUOCES　　　　(4) SOURSEC

14. Choose the correct mirror image of the given figure (X) from amongst the four alternatives.

(X)　　(1)　(2)　(3)　(4)

15. Find the missing term of the following series :

50, 42, 44, 36, 38, ?

(1) 34　　　(2) 30　　　(3) 28　　　(4) 32

16. Deeksha went 15 km straight from her house, then turned left and walked 10 km, then turned right and walked 8 km. Now she is going towards west. In which direction she started walking?

(1) North　　　　(2) South

(3) West　　　　(4) Can't be determined

17. Which number is common in the square, ellipse and triangle?
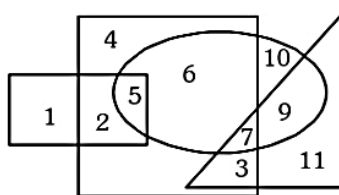
(1) 1　　　(2) 5　　　(3) 6　　　(4) 7

18. In a certain code language, 'dom put ta' means 'bring hot food'; 'put tir sop' means 'food is good' and 'tak da sop' means 'good bright boy'.

Which of the following does mean 'hot' in that language ?

(1) dom　　(2) pul　　(3) ta　　(4) Can't be determined

19. From the given alternatives select the one which cannot be formed using the letters of the word below

INTERNATIONAL

(1) NATIONAL   (2) TERMINAL   (3) TENANT   (4) TENOR

20. Find the missing term:

22, 24, 28, ?, 52, 84

(1) 36   (2) 38   (3) 42   (4) 46

PART-II
SECTION-A : PHYSICS

This section contains *12 Multiple Choice Questions.* Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

21. The S.I. unit of electric charge is :

(1) ampere   (2) Joule   (3) Volt   (4) Coulomb

22. If the glance angle of incidence is 39° then what will be the value of angle of reflection ?

(1) 39°   (2) 61°   (3) 51°   (4) 90°

23. When magnetic lines of force are parallel and equally spaced, the magnetic field is said to be ____ :

(1) uniform   (2) non-uniform   (3) variable   (4) (2) and (3) both

24. Distance covered by an object moving with 70 km/h in 25 minutes = ____.

(1) 30 km.   (2) 35 km.   (3) $29\dfrac{1}{6}$ km.   (4) 29 km.

25. Which of the following graph shows the correct relationship between the increase in temperature and the increase in the mercury level :
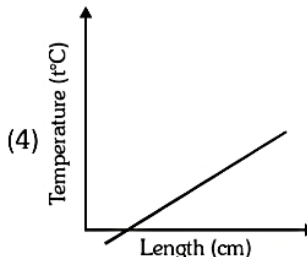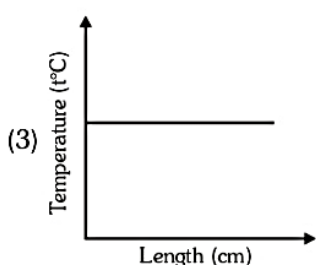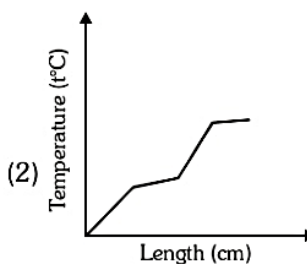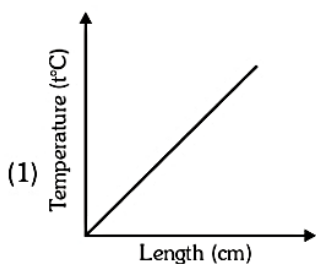
26. Why a coiled filament is used in an electric bulb ?
(1) Coiled filament offers more current
(2) Coiled filament offers less resistance
(3) coiling increases length and hence offers more resistance
(4) Coiling makes a filament more attractive

27. Modern wind power machines are used for generating electricity and are more commonly called ?
(1) Wind mills
(2) Wind turbines
(3) Wind vanes
(4) Traditional wind vanes

28. When a bar magnet in two pieces (as shown in figure) then -

(1) S N N S
(2) N S S N
(3) S N S N
(4) None of these

29. On heating, the temperature of steel increases as :
(1) Molecule gain energy and vibrate faster
(2) More collision between the molecules occur
(3) Both (1) and (2)
(4) None of the above

30. Which of the following figure shows a divergent beam of light :

31. What will happen to the magnitude of electric current if amount of charge flowing through the circuit is halved ?
(1) double
(2) four times
(3) becomes one-fourth
(4) half

32. Rest and motion are :
(1) Obsolute states
(2) Relative states
(3) Imaginary states
(4) None of these

SECTION-B : CHEMISTRY

This section contains **11 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.
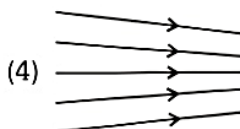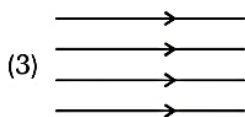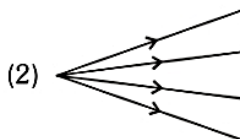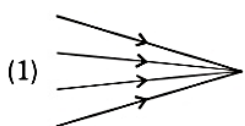
33. Complete the following reaction : $Na + H_2O \rightarrow$
(1) $NaOH + H_2$
(2) Na_2O
(3) $N_2O + NaOH$
(4) No reaction occurs

34. Identify the chemical change(s) among the following.
(1) Rusting of iron
(2) Combustion of coal
(3) Both (1) and (2)
(4) Melting of ice

35. Odd one out on the basis of fibre.
(1) Nylon
(2) Leather
(3) Cotton
(4) Silk

36. If a cold steel plate is held in the steam, water droplets are seen on the plate. This change is called
(1) Evaporation
(2) Boiling
(3) Melting
(4) Condensation

37. All are physical changes except
(1) Dissolution of NaCl in water
(2) Dissolution of sugar in water
(3) Burning of magnesium in air
(4) Mixing sand and water

38. Which acids are responsible for damaging the historical monuments, plants and animals?
(1) Carbonic acid
(2) Sulphuric acid
(3) Nitric acid
(4) Both (2) and (3)

39. Formation of slaked lime from quick lime is a
(1) Physical change
(2) Chemical change
(3) Decomposition reaction
(4) None of these

40. Which characteristic of the wool fibres create an insulation in it against cold?
(1) Fibres are tightly packed
(2) Static electric charges is present in the wool fibres
(3) Air spaces are present between the wool fibres
(4) Fibres are quite thick

41. The density of water is

(1) 0.1 g/cm³   (2) 1 g/cm³   (3) 100 g/cm³   (4) 1 kg/m³

42. To neutralize acidity of stomach, we can take

(1) Sodium bicarbonate

(2) Sodium hydroxide

(3) Sodium chloride

(4) Potassium hydroxide

43. Removal of fleece along with a thin layer of skin is known as

(1) Reasing   (2) Shearing

(3) Reeling   (4) Sorting

SECTION-C : BIOLOGY

This section contains *12 Multiple Choice Questions.* Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

44. Gliding joints are found in

(1) Ankle and wrist

(2) Elbow and knee

(3) Shoulder bone and arm bone

(4) Neck and skull

45. In plants, water is transported through

(1) Xylem   (2) Phloem   (3) Stomata   (4) Root hair

46. Which of the following features adapt polar bears to live in extremely cold climate?

(1) White fur, Fat below skin, Keen sense of smell

(2) Thin skin, Large eyes, White fur

(3) A long tail, Strong claws, White large paws

(4) White body, Paws for swimming, Gills for respiration

47. The process of photosynthesis converts solar energy into

(1) Kinetic energy

(2) Chemical energy

(3) Potential energy

(4) Nuclear energy

48. Response to a stimulus will be shown by

(1) man   (2) bird   (3) plants   (4) all the above

49. Which one is a non-biodegradable waste?

(1) Plastic

(2) Cow dung

(3) Vegetables

(4) Banana peel

50. The number of tarsals per limb of human beings is

(1) 5

(2) 6

(3) 7

(4) 8

51. The reproductive part of a plant is the

(1) Leaf

(2) Stem

(3) Root

(4) Flower

52. Micro-organisms act upon the dead plants to produce

(1) Sand

(2) Mushroom

(3) Humus

(4) Wood

53. On complete digestion of fats, the end products are

(1) Fatty acid and amino acids

(2) Fatty acid and glycerol

(3) Glucose and glycerol

(4) Glucose and amino acids

54. The plant having stem tendril is

(1) grape-vine

(2) passion flower

(3) gourd

(4) all the above

55. Animals living in hot and dry places have short shiny fur to

(1) Get moisture from air

(2) Live in burrows

(3) Reflect back sun's rays

(4) Kill prey

SECTION-D : MATHEMATICS

This section contains **25 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

56. Add $3x + 2y$ and $x + y$:

(1) $4x + 3y$

(2) $4x + 2y$

(3) $3x + 3y$

(4) $3x + 2y$

57. If $\Delta PQR \cong \Delta EFD$, which angle of ΔPQR equals $\angle E$?

(1) $\angle P$

(2) $\angle Q$

(3) $\angle R$

(4) None of these

58. By what number should 5^{-1} be multiplied so that the product may be equal to $(-7)^{-1}$?

(1) $\dfrac{5}{7}$

(2) $\dfrac{-5}{7}$

(3) $\dfrac{7}{5}$

(4) $\dfrac{-7}{5}$

59. The product of even number of negative integers is :

(1) Odd   (2) Even   (3) Positive   (4) Negative

60. $\dfrac{3}{15}, \dfrac{13}{15}, \dfrac{23}{15}$ are examples of :

(1) Proper fractions   (2) Equivalent fractions

(3) Like fractions   (4) Unlike fractions

61. How much is $x^2 - 2xy + 3y^2$ less than $2x^2 - 3y^2 + xy$:

(1) $x^2 - 6y^2 + 3xy$ (2) $x^2 + y^2 - 3xy$

(3) $x^2 + y^2 - 2xy$ (4) $2x^2 + 3y^2 - xy$

62. Solve for x : $3(x - 1) = 2x - 11$.

(1) -8 (2) 8 (3) -10 (4) 10

63. If a transversal cuts two parallel lines then which of the statement is true ?

(1) Pairs of corresponding angles are equal

(2) Pairs of alternate angles are equal

(3) The sum of interior angles on the same side of the transversal is 180°

(4) All of the above

64. If 5176x12 is divisible by 8, then find the sum of all the possible values of x?

(1) 9   (2) 4   (3) 16   (4) 25

65. The marks in science of 30 students are as follows :

53, 61, 48, 60, 78, 68, 55, 100, 67, 90, 75, 88, 77, 37, 84, 58, 60, 48, 62, 56, 44, 58, 52, 64, 98, 59, 70, 39, 50, 60

The lowest score is :

(1) 44   (2) 37   (3) 31   (4) 29

66. A car travels 168.75 km in 12.5 litres of petrol. Find the distance travelled by the car in 15 litres.

(1) 202.5   (2) 20.25   (3) 2.025   (4) 2025

67. Area of a parallelogram whose base is 17 cm and height is 0.8 m will be

(1) 13.6 cm^2 (2) 1360 cm^2 (3) 13.6 m^2 (4) None of these

68. Sum of a rational number and its additive inverse is

(1) 0   (2) 1   (3) -1 (4) None of these

69. What must be added to 30.38 to make 101.11 ?

(1) 70.33   (2) 70.73   (3) 70.43   (4) 70.23

70. If six numbers have 96 as the mean, the sum of the numbers is

(1) 16   (2) 32   (3) 192   (4) 576

71. In $\triangle ABC$, $\angle A = 100°$ and $AB = AC$. Find $\angle B + \angle C$.
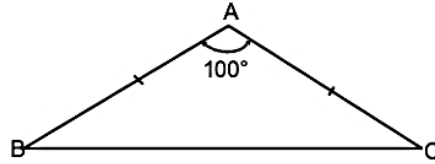
(1) 40°   (2) 60°   (3) 80°   (4) None of these

72. Determine the value of y:
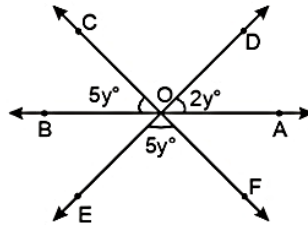
(1) 12   (2) 15   (3) 10   (4) 20

73. Solve the equation : $\dfrac{x}{2} = \dfrac{x}{3} + 1$:

(1) 3   (2) 10   (3) 6   (4) 9

74. Simplify : $(-20) + (-8) \div (-2) \times 3$

(1) –8   (2) 8   (3) 6   (4) 4

75. If $\dfrac{-5}{7} = \dfrac{x}{28}$, then the value of x :

(1) – 20   (2) 20   (3) 15   (4) – 15

76. Find the difference between the place values of 5 in 625653.

(1) 4995   (2) 5000   (3) 4950   (4) 4900

77. If the length of a rectangle is doubled and breadth does not change, its area will be :

(1) Double   (2) Half   (3) Three times   (4) Four times

78. Simplify $\left(6^{-1} - 8^{-1}\right)^{-1} + \left(2^{-1} - 3^{-1}\right)^{-1}$:

(1) 29   (2) 30   (3) 31   (4) 32

79. If the sales tax on a purchase worth Rs 60 is Rs 4.20. What will be the sales tax on the purchase worth of Rs 150 ?

(1) Rs 11   (2) Rs 10.50   (3) Rs. 11.50   (4) Rs. 10

80. What is the remainder when 516348277 is divided by 3?

(1) 0   (2) 1   (3) 2   (4) 7