



NARAYANA

GROUP OF SCHOOLS


Max.Time: 120 Min
Max.Marks: 320 M
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. Each correct answer carries **4 Marks**.
- v. No negative marking for wrong answer.

MAT (Q.NO.1 TO 20)
Directions (Q.No : 1-2): Find the missing term in the given number series:

1. $11\frac{1}{9}, 12\frac{1}{2}, 14\frac{2}{7}, 16\frac{2}{3}, ?$

1) $8\frac{1}{3}$

2) $19\frac{1}{2}$

3) 20

4) $22\frac{1}{3}$

2. **5760, 960, ?, 48, 16, 8**

1) 120

2) 160

3) 192

4) 240

3. **Find the missing term in the given letter series:**

PMT, OOS, NQR, MSQ, ?

1) LUP

2) LVP

3) LVR

4) LWP

4. **If GO=32, SHE=49, then SOME will be equal to**

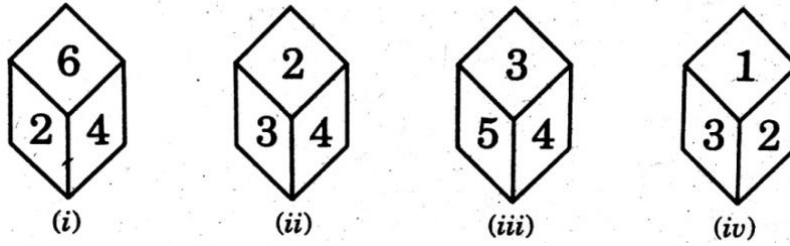
1) 56

2) 58

3) 62

4) 64

5. **A dice thrown four times and its four different positions are shown below. Find the number on the face opposite the face showing 2.**



- 1) 3 2) 4 3) 5 4) 6

6. In a class of 60, where girls are twice that of boys, Kamal ranked seventeenth from the top. If there are 9 girls ahead of Kamal, how many boys are after him in rank?

- 1) 3 2) 7 3) 12 4) 13

Directions(Q. No :7-8) : Study the number series given below and answer the questions that follow:

7 8 9 7 6 5 3 4 2 8 9 7 2 4 5 9 2 9 7 6 4 7

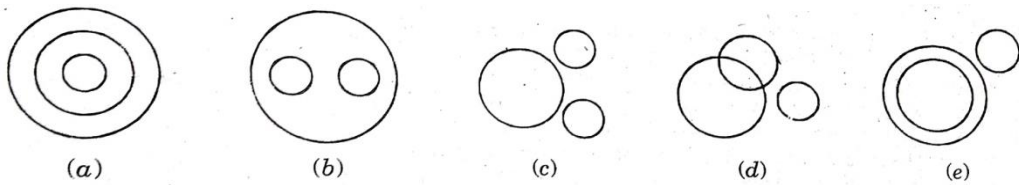
7. How many 7s are preceded by 9 and followed by 6?

- 1) 2 2) 3 3) 4 4) 5

8. Which figures have equal frequency?

- 1) 2, 5, 3 2) 2, 4, 5 3) 3, 7, 5 4) 8, 6, 5

Directions (Q.No-9 to 10) : 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.



9. Judge, Thief, Criminal

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

10. Anxiety, Intelligence, Strength

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

11. A boy rode his bicycle northwards, then turned left and rode one km and again turned left and rode two km. He found himself exactly one km west of his starting point. How far did he ride northwards initially?

- 1) 1 km 2) 2 km 3) 3 km 4) 5 km

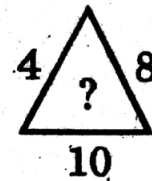
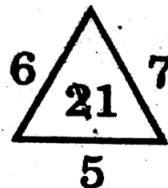
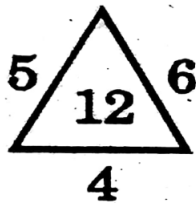
Directions (Q.No-12) : The below question, which one of the four interchanges in signs and numbers would make the given equation correct?

12. $(3 \div 4) + 2 = 2$

- 1) + and \div , 2 and 3 3) + and \div , 2 and 4
 2) + and \div , 3 and 4 4) No interchange, 3 and 4

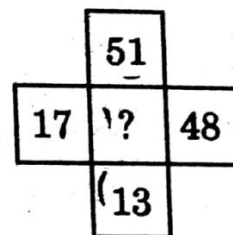
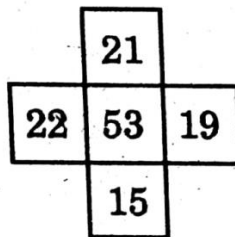
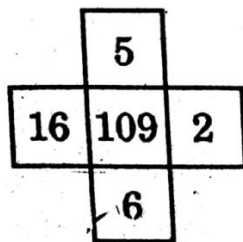
Directions (Q. No-13 to 14): Find the missing character from among the given alternatives.

13.



- 1) 47 2) 29 3) 32 4) None of these

14.



- 1) 7 2) 25 3) 49 4) 129

Directions (Q. No-15) : Read the following information carefully and answer the question given below:

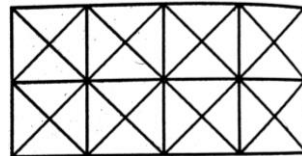
- 'A + B' means 'A is the daughter of B';
- 'A × B' means 'A is the son of B';
- 'A - B' means 'A is the wife of B'.

15. If $T-S \times B - M$, which of the following is not true?

- 1) B is mother of S.
- 2) M is husband of B
- 3) T is wife of S
- 4) S is daughter of B

Directions (Q.No-16) : Count the number of squares in the following figures

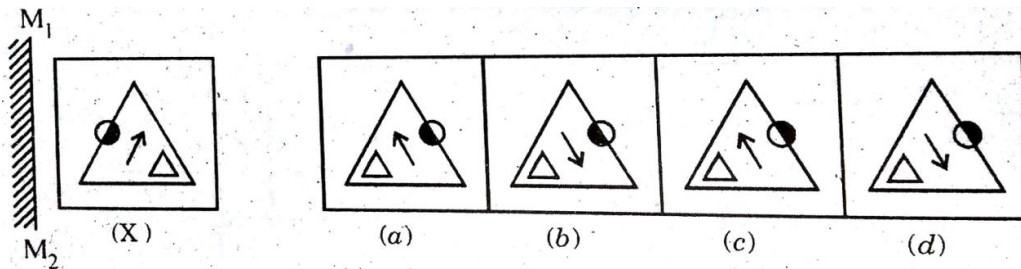
16.



- 1) 11
- 2) 21
- 3) 24
- 4) 26

Directions (Q.No-17) : find out the mirror image

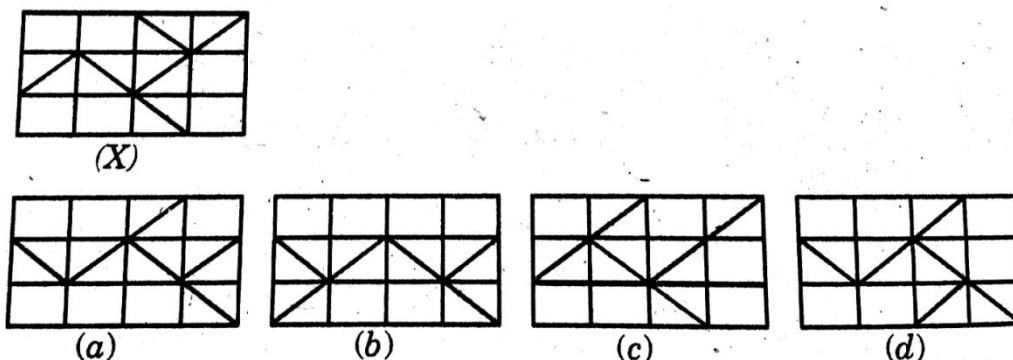
17.



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

Directions (Q.No-18) : find out the water image

18.



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

Directions (Q.NO.-19: FIGURE SERIES)

24. Find the value of x such that $\frac{2}{3}(4x-1) - \left(2x - \frac{1+x}{3}\right) = \frac{x}{3} + \frac{4}{3}$

1) $-\frac{5}{4}$

2) $\frac{5}{4}$

3) $\frac{5}{2}$

4) $-\frac{5}{2}$

25. If a and b are positive integers, then the solution of the equation $ax = b$ will always be a

1) positive number

2) negative number

3) 1

4) 0

26. $-16 \div [8 \div (-2)]$ is equal to

1) -1

2) 1

3) 4

4) -4

27. Area of a right triangle is 54 cm^2 . If one of its legs is 12 cm long, its perimeter is

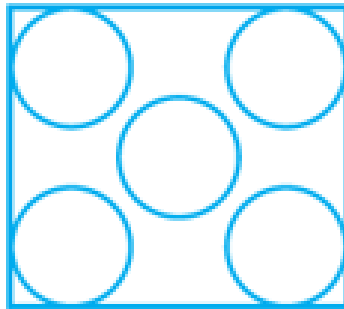
1) 18 cm

2) 27 cm

3) 36 cm

4) 54 cm

28. The angle of rotation for the below figure is

1) 45° 2) 60° 3) 90° 4) 180°

29. What is the maximum exterior angle possible for a regular polygon?

1) 60° 2) 80° 3) 120° 4) 160°

30. The value of $(\sqrt{81} + \sqrt{0.81} + \sqrt{0.0081}) \times \sqrt{10000}$ is

1) 9

2) 99

3) 999

4) 1

31. The value of x in $(81)^{-4} \div (729)^{2-x} = 9^{4x}$ is

1) 18

2) -18

3) 14

4) -14

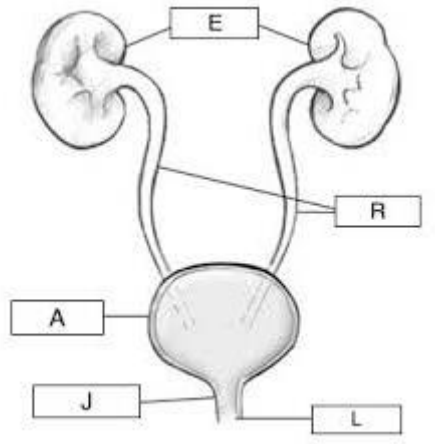
54. $2\text{H}_2\text{O} \xrightarrow{\text{pressure}} 2\text{H}_2 + \text{O}_2$ **in the pressure**
1) Sunlight 2) Boiling 3) Filtration 4) Electrolysis
55. **The Element which form positively charged ions by loosing electrons from their valency shell and form oxides are**
1) Non- Metal 2) Metals 3) Compound 4) Elements
56. **Basicity of hydrochloric acid is _____**
1) 1 2) 2 3) 3 4) 4
57. **Which of the following is desirable change?**
1) Burning of house 2) Occurring of floods
3) Land slides 4) Burning of cooking gas
58. **Number of water molecules in Mohr's salt**
1) 5 2) 7 3) 8 4) 6
59. **The process of making a Fabric by interlocking loops of single yarn with knitting needles or machines, is called _____**
1) spinning 2) wearing 3) knitting 4) orling
60. _____ **is used as the black material inside writing pencil**
1) Diamond 2) Coal 3) Graphite 4) Potassium
61. **Which of the following is/are source of citric acid?**
1) Olive OIL 2) Lemons 3) Apples 4) Tamarind
62. **The poisonous gases like carbon monoxide and nitric oxide are produced which are very harmful to health. This is an:**
1) Desirable change 2) Undesirable change
3) Reversible change 4) Periodic change
63. **In nature pure carbon is not found in which of the following form(s) :**
1) Dull black coal
2) Slippery black graphite
3) Highly lustrous and non-black diamond
4) Lead
64. **The _____ are place in hot water to drawn silkworm.**
1) Cocoons 2) Bamboo 3) Silk 4) Reels
65. **The substance which cannot be further sub- divided into simpler substance by any Physical (or) chemical means is called**
1) Mixture 2) Compound 3) Element 4) Molecules

BIOLOGY (Q.NO.66 TO 80)

66. During exhalation the ribs

- (1) move down and inwards
- (2) move upwards
- (3) move outwards
- (4) do not move at all

67. In the below given excretory system diagram, identify the functions of 'R' and 'A'



- 1) R expels urine out and A stores urine
- 2) R filters urine and A expels urine out
- 3) R transports urine to A and A stores urine till it is expelled out
- 4) R filters and stores urine, A expels urine out

68. In cockroach, air enters the body through

- 1) Lungs
- 2) Gills
- 3) Spiracles
- 4) Skin

69. Identify the odd man out among the parts of the diagram given below



- 1)Nucleolus
- 2)Chromosomes
- 3)Genes
- 4)Cytoplasm

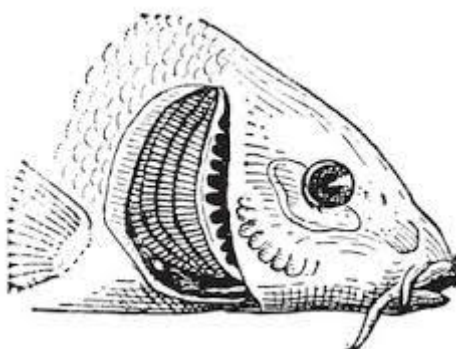
70. Name the muscular sheet which separates the abdomen from the chest cavity.

- 1) Diaphragm 2) Ribs
3) Spiracles 4) Tracheae

71. Which of the following tools would a farmer use to remove weeds from the field?

- 1) Hoe 2) Plough 3) Axe 4) Cultivator

72. Identify the respiratory organ shown in the diagram below and its significance.



- 1) Gills, breathe through their skin
2) Spiracles, breathe through their skin
3) Spiracles, use Oxygen dissolved in water
4) Gills ,use Oxygen dissolved in water

73. The table given below has certain terms and four blank spaces named A, B, C and D.

Cell	Feature/part	Function
Amoeba	A	Movement
Plant Cell	Plastid	B
C	Spindle shaped	Contraction
Nerve cell	D	Stimuli and response

From the options given below choose the correct combination of terms.)

- 1) A-Pseudopodia; B-Respirations; C-Muscle cell; D-Branched
2) A-Pseudopodia; B-Photosynthesis; C-Muscle cell; D-Branched
3) A-Contractile vacuole; B-Photosynthesis; C-Blood cell; D-Spindle shaped
4) A-Pseudopodia; B-Photosynthesis; C-Cheek cell; D-Spindle shaped

74. The absorption of nutrients and exchange of respiratory gases between blood and tissues takes place in –

- 1) veins 2) arteries
 3) heart 4) capillaries

75. Match the names of scientists given in Column A with the discovery made by them given in Column B.

Column A

- (a) Louis Pasteur
 (b) Robert Koch
 (c) Edward Jenner
 (d) Alexander Fleming

Column B

- (i) Penicillin
 (ii) anthrax bacterium
 (iii) Fermentation
 (iv) small pox vaccine
 (v) Typhoid

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

76. Which of the following has the strongest stem?

- 1) A tree 2) A creeper 3) A climber 4) A bush

77. The organic substance obtained from dead plants and animal wastes is

- 1) Manure 2) Fertilizer 3) Irrigation 4) Agriculture

78. Read the statements given below.

- (i) Seeds require moisture for germination.**
(ii) Plants can absorb nutrients mostly in dissolved form.
(iii) Irrigation protects crops from both frost and hot air currents.
(iv) Irrigation improves soil texture.

Choose the combination of statements which indicate the need to irrigate crops.

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

79. Forests are not responsible for

- 1) providing medicinal plants.
 2) maintaining the flow of water into the streams.
 3) creating flood conditions.
 4) absorbing rainwater and maintaining water table.

80. The gas released during the preparation of bread is

- 1) oxygen 2) carbon dioxide
 3) nitrogen 4) sulphur dioxide