



# NARAYANA

## GROUP OF SCHOOLS



CLASS-IX

AARAMBH

DATE: 01-10-19

Max. Time: 120 min

Max marks: 320

**Instructions:**

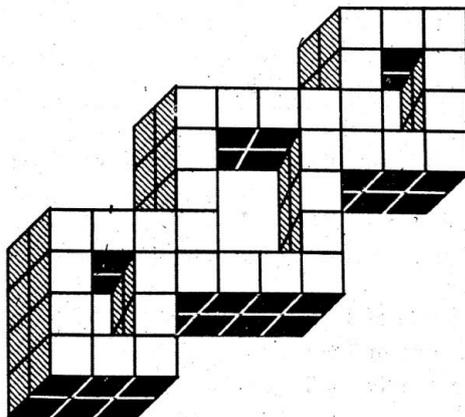
- The test paper consists of **80** multiple choice questions numbered from **1 to 80**, each question followed by four alternatives 1, 2, 3 and 4.
- Mental Ability 1 to 20, Mathematics 21 to 35, Physics 36 to 50 and Chemistry 51 to 65, Biology 66 to 80.
- Each question has only one correct option.
-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

### MAT (Q.NO.1 TO 20)

- If  $GO=32$ ,  $SHE=49$ , then  $SOME$  will be equal to  
 1) 56                      2) 58                      3) 62                      4) 64
- If  $DRIVER=12$ ,  $PEDESTRIAN=20$ ,  $ACCIDENT=16$ , then  $CAR=?$   
 1) 3                          2) 6                          3) 8                          4) 10
- If  $DELHI$  is coded as  $73541$  and  $CALCUTTA$  as  $82589662$ , how can  $CALICUT$  be coded?  
 1) 5279431                2) 5978213                3) 8251896                4) 8543691

**Directions ( Q.No-4) : Count the number of cubes the following figure :**

4.



1) 64

2) 66

3) 68

4) 70

**Directions (Q.No-5-8):** Three different positions X,Y and Z of a dice are shown in the figures given below. Answer the following questions which are based upon these figures.



**5. Which number lies at the bottom face in position X?**

1) 2

2) 3

3) 6

4) Cannot be determined

**6. Which number lies at the bottom face in position Y?**

1) 1

2) 2

3) 5

4) Cannot be determined

**7. Which number lies opposite 6?**

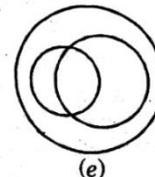
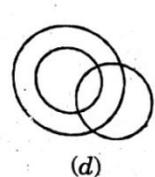
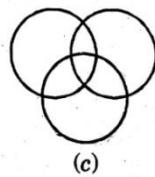
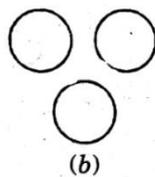
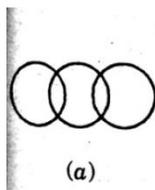
1) 1

2) 2

3) 4

4) 5

**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. Tennis fans, Cricket players, Students**

1) e

2) b

3) c

4) d

**9. Males, Fathers, Doctors**

1) a

2) e

3) c

4) d

**10. Anti-social elements, Pickpocketers, Blackmailers**

1) a

2) e

3) c

4) d

**11. Tall men, Black haired people, Indians**

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

12. Which term comes next in the series? YEB, WFD, UHG, SKI, ?

- 1) QOL                                      2) QGL                                      3) TOL                                      4) QNL

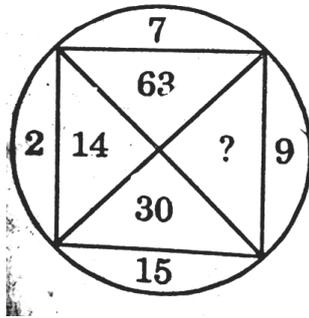
13. The positions of the second and the eighth digits of the number 39128564 are interchanged. Similarly, the positions of the fourth and the fifth digits are interchanged. The positions of the first and sixth digits are interchanged and the positions of the third and the seventh digits are interchanged. Which of the following will be the third digit to the left of 3 after the rearrangement?

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

14. Manoj and Sachin are ranked seventh and eleventh respectively from the top in a class of 31 students. What will be their respective ranks from the bottom in the class?

- 1) 20<sup>th</sup> and 24<sup>th</sup>                      2) 24<sup>th</sup> and 20<sup>th</sup>                      3) 25<sup>th</sup> and 21<sup>st</sup>                      4) 26<sup>th</sup> and 22<sup>nd</sup>

15.



- 1) 18                                      2) 33                                      3) 135                                      4) 145

Directions (Q. No-16) : 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';

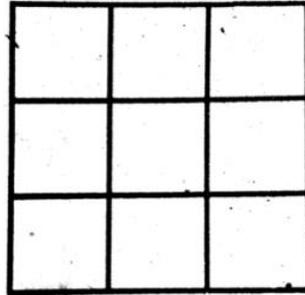
'A – B' means 'A is the wife of B'.

16. If T-S × 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-17) : Count the number of squares in the following figures**

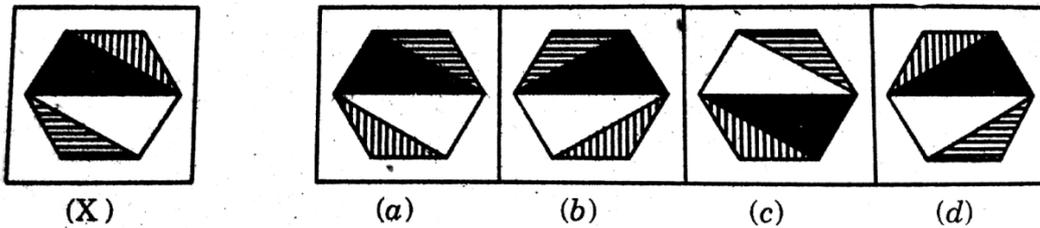
17.



- 1) 18                      2) 14                      3) 10                      4) 9

**Directions (Questions No-18) : Mirror image**

18.



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

**Directions (Q.No-19): Find out the water images**

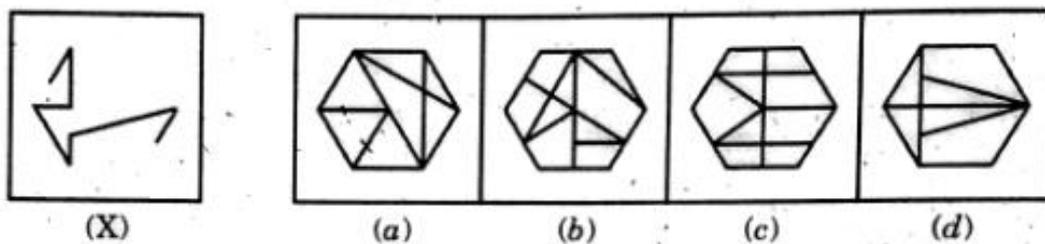
19.



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

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

20.

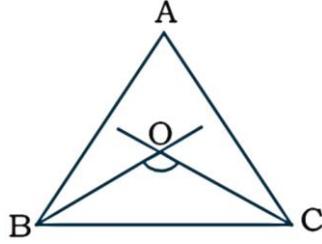


- 1) a                      2) b                      3) c                      4) d

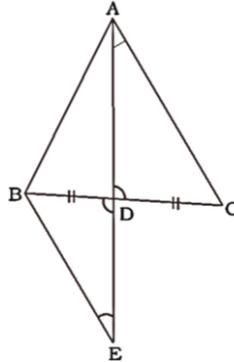
**MATHEMATICS (Q.NO.21 TO 35)**

21.  $\left(\sqrt{\frac{225}{729}} - \sqrt{\frac{25}{144}}\right) \div \sqrt{\frac{16}{81}} = ?$
- 1)  $\frac{1}{48}$                       2)  $\frac{5}{48}$                       3)  $\frac{5}{16}$                       4) None of these
22.  $\sqrt[3]{.000064} = ?$
- 1) .02                      2) .2                      3) 2                      4) None of these
23. What will be the value of  $n^4 - 10n^3 + 36n^2 - 49n + 24$  if  $n = 1$ ?
- 1) 21                      2) 2                      3) 1                      4) 22
24.  $\left(5\left(8^{\frac{1}{3}} + 27^{\frac{1}{3}}\right)^3\right)^{\frac{1}{4}} = \underline{\hspace{2cm}}$
- 1) 3                      2) 6                      3) 5                      4) 4
25. The factors of  $9a^2 - 6\sqrt{5}a + 5$  are
- 1)  $(3a + \sqrt{5})(3a - \sqrt{5})$                       2)  $(3a - 5)(3a - 5)$
- 3)  $(3a - \sqrt{5})(3a - \sqrt{5})$                       4)  $(3a + \sqrt{5})(3a - 5)$
26. If  $\frac{x+3}{2} + 3x = 5(x-3) + \frac{x+23}{5}$ , then what is the value of x ?
- 1) 7                      2) 8                      3) 10                      4) 12
27. The sides of a triangle are in the ratio of  $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ . If the perimeter is 52 cm, then the length of the smallest side is :
- 1) 9 cm                      2) 10 cm                      3) 11 cm                      4) 12 cm
28. HCF of  $x^3 - 1$  and  $x^4 + x^2 + 1$  will be
- 1)  $(x-1)$                       2)  $x^2 + x + 1$                       3)  $x^2 - x + 1$                       4)  $x^2 - x - 1$
29. In  $\triangle ABC$ ,  $a = 7\text{cm}$ ,  $b = 8\text{cm}$ ,  $c = 11\text{cm}$  then the length of the median from A on BC is
- 1)  $\frac{\sqrt{321}}{5}$                       2)  $\frac{\sqrt{321}}{2}$                       3) 8                      4) 6

30. In the adjoining figure,  $\angle B = 70^\circ$ ,  $\angle C = 30^\circ$ ,  $BO$  and  $CO$  are the angular bisectors of  $\angle ABC$  and  $\angle ACD$  then value of  $\angle BOC$



- 1)  $160^\circ$                       2)  $150^\circ$                       3)  $140^\circ$                       4)  $130^\circ$
31. In the given  $\triangle ABC$ ,  $AD$  is median to  $BC$  and  $AD$  is produced to  $E$ ,  $AC \parallel BE$ , then

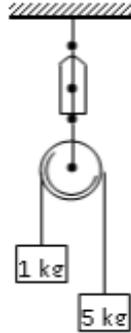


- 1)  $AD = BE$                       2)  $AC = DC$                       3)  $AD = DE$                       4)  $AB = AC$
32. The population of Hyderabad was 68,09,000 in the year 2015. If it increases at the rate of 4.7% per annum. What will be the population at the end of the year 2019?
- 1) 81,81,199                      2) 81,80,199                      3) 80,82,199                      4) 81,82,199
33. 10 men can lay a road 75 km. long in 5 days. In how many days can 15 men lay a road 45 km. long?
- 1) 1 days                      2) 2 days                      3) 3 days                      4) 4 days
34. ABCD is an isosceles trapezium,  $AB \parallel CD$ . If  $AC = 9\text{cm}$ , then  $BD =$
- 1) 10cm                      2) 4cm                      3) 20cm                      4) 9cm
35. The difference between the squares of two consecutive odd integers is always divisible by
- 1) 8                      2) 7                      3) 6                      4) 3

**PHYSICS (Q.NO.36 TO 50)**

36. Choose wrong, size of image formed in a plane mirror
- 1) Could be taller than the mirror  
 2) The height of the image depends on the object distance  
 3) The width of the image is the same as of the object  
 4) The image height depends on the object height

37. Two masses of 1 kg and 5 kg are attached to the ends of a massless string passing over a pulley of negligible weight. The pulley itself is attached to a light spring balance as shown in the figure. The masses start moving during this interval, the reading of spring balance will be



- 1) More than 6 kg    2) less than 6 kg    3) equal to 6 kg    4) none of the above

38. Which part of human ear converts sound vibrations into electrical signals?

- 1) Hammer                      2) Stirrup                      3) Tympanic membrane    4) Cochlea

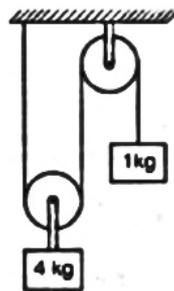
39. If temperature increases, speed of sound

- 1) Also increases    2) decreases    3) remains same    4) may increase or decrease

40. Identify the planet whose length of the days and tilt of its axis are almost identical to those of the earth

- 1) Uranus                      2) Neptune                      3) Saturn                      4) Mars

41. In the system shown in the adjoining figure, the acceleration of the 1 kg mass is



- 1)  $g/4$  downwards    2)  $g/4$  upward    3)  $g/2$  downwards    4)  $g/2$  upward

42. A planet has mass  $1/10$  of that of earth, while radius is  $1/3$  that of earth. If a person can throw a stone on earth surface to a height of 90m, then he will be able to throw the stone on that planet to a height

- 1) 90m                      2) 40m                      3) 100m                      4) 45m

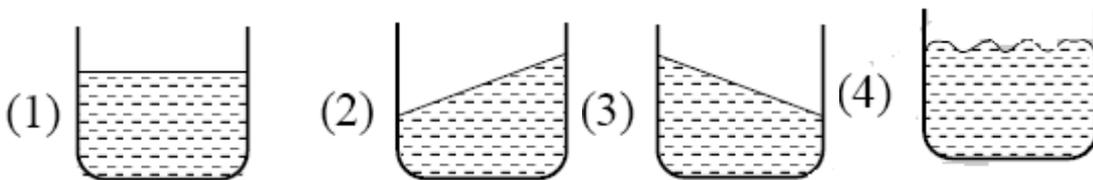
**43. When a train stops suddenly, passengers in the running train feel an instant jerk in the forward direction because**

- 1) The back of seat suddenly pushes the passengers forward
- 2) Inertia of rest stops the train and takes the body forward
- 3) Upper part of the body continues to be in the state of motion whereas the lower part of the body in contact with seat remains at rest
- 4) Nothing can be said due to insufficient data

**44. Gary reads about Newton's third law while sitting in a room with a single closed door. He reasons that if he applies a force to the door there will be an equal and opposite force that will cancel his pull and he never will be able to escape. What is wrong with Gary's reasoning?**

- 1) He hasn't applied Newton's third law correctly
- 2) The force on the door must be greater than the force of the door on him.
- 3) The motion of the door is affected only by the net forces on the door, and the reaction force on him is irrelevant.
- 4) All of the above.

**45. A jar containing water is placed in a train. The train accelerates from left to right. Which of the following shows the water level in the jar correctly?**



**46. What is the weight of a body inside an artificial satellite of earth?**

- 1) It depends on the mass of the body
- 2) It depends on the velocity of satellite
- 3) Product of its mass and gravitational acceleration
- 4) Zero

**47. A ray of light is incident on a plane mirror and the angle of reflection is  $50^\circ$ . Calculate the angle between the incident ray and the reflected ray.**

- 1)  $50^\circ$
- 2)  $25^\circ$
- 3)  $90^\circ$
- 4)  $100^\circ$

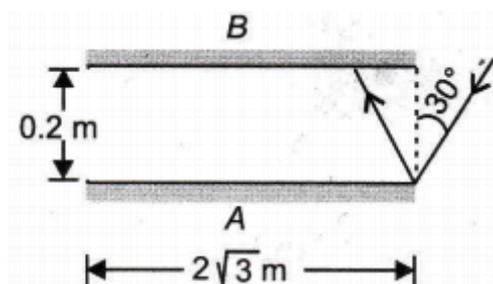
**48. Eardrum is a part of**

- 1) Sound producing organ
- 2) Skeletal system
- 3) Hearing organ
- 4) Reproductive organ

49. While revolving an artificial satellite around earth, the required centripetal force is provided by

- 1) Fuel contained in the satellite                      2) gravitational force due to sun  
3) gravitational force due to earth                      4) Thrust produced by burning fuel

50. Two plane mirrors A and B are aligned parallel to each other as shown in the figure. A light ray is incident at an angle  $30^\circ$  at a point just inside one end of A. The plane of incidence coincides with the plane of the figure. The maximum number of times the ray undergoes reflections (including the first one), before it emerges out, is



- 1) 28    2) 30    3) 32    4) 34

### CHEMISTRY (Q.NO.51 TO 65)

51. The ratio of hydrogen and oxygen in water by weight is

- 1) 1 : 2    2) 3 : 1    3) 1 : 8    4) 1 : 4

52. How many non- metals present in Periodic table

- 1) 22    2) 20    3) 18    4) 16

53. The property by virtue of which a substance can bear a lot of strain without breaking is called as

1. Malleability                      2. Ductility                      3. Tensile strength                      4. Conductivity

54. The molecular formula of cinnabar is

- 1) CaS    2)  $FeS_2$     3) HgS    4)  $HgS$

55. Which of the following is a pure substance

- 1) Milk    2) Honey    3) Cheese    4) Iron

56. Different pigments from an extracts of flower petals are separated by

- 1) Winnowing                      2) Chromatography                      3) Sublimation                      4) Distillation

57. One barrel equals to \_\_\_\_\_ litres.

- 1) 156 litres                      2) 172 litres                      3) 159 litres                      4) 132 litres

58. If 15 g of sugar is present in 85g of solution then mass percentage of sugar is \_\_\_\_

- 1) 15    2) 17.6    3) 85    4) 100



**70. Which of the following statement is incorrect**

- 1) Some tissues in plants divide throughout their life
- 2) Cell growth in animals is more uniform as compared to plants
- 3) Animals have more dead tissues as compared to plants
- 4) There is no demarcation of dividing and non-dividing regions in animals

**71. Which of the following statements about reproduction in humans is correct?**

- 1) Fertilisation takes place externally.
- 2) Fertilisation takes place in the testes.
- 3) During fertilisation egg moves towards the sperm.
- 4) Fertilisation takes place in the human female.

**72. In human beings, after fertilisation, the structure which gets embedded in the wall of uterus is**

- 1) Ovum            2) embryo            3) foetus            4) zygote

**73. The identifying features of meristematic tissues are**

- 1) Thick cellulose cell wall, Small vacuoles, dense cytoplasm, Small nuclei
- 2) Thin cellulose cell wall, Almost no vacuoles, dense cytoplasm, prominent nuclei
- 3) Thin cellulose cell wall, No vacuoles, Sparse cytoplasm, prominent nuclei
- 4) Thick cellulose cell wall, Large vacuoles, Sparse cytoplasm, small nuclei

**74. Rhizobium is found in root nodules of which of the following plants?**

- 1) Cereals            2) Pulses            3) Oilseeds            4) Horticultural plants

**75. Sets of reproductive terms are given below. Choose the set that has an incorrect combination.**

- 1) Sperm, testis, sperm duct, penis            2) menstruation, egg, oviduct, uterus  
3) Sperm, oviduct, egg, uterus            4) ovulation, egg, oviduct, uterus

**76. The first phase of the sexual cycle in the human female is called.**

- 1) Ovulation            2) implantation            3) menstruation            4) follicle phase

**77. Dramatic changes of body features associated with puberty are mainly because of secretion of**

- 1) Oestrogen from testes and testosterone from ovary
- 2) Oestrogen from adrenal gland and testosterone from pituitary gland
- 3) Testosterone from testes and Oestrogen from ovary
- 4) Testosterone from thyroid gland and Oestrogen from pituitary gland

**78. Select the incorrect sentence**

- 1) Blood has matrix containing proteins, salts and hormones.
- 2) Two bones are connected with ligament.
- 3) Tendons are non-fibrous tissue and fragile.
- 4) Cartilage is a form of connective tissue.

**79. Match the following****A**

- a) Virus
- b) Yeast
- c) Female Aedes Mosquito
- d) Common carrier of communicable diseases

**B**

- i) Housefly
- ii) Chickenpox
- iii) Alcohol
- iv) Dengue

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

**80. Red Data Book keeps the record of .....**

- 1) endangered animals & plants
- 2) extinct animals and plants
- 3) Endemic animals and plants
- 4) all of the above

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