



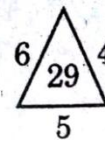
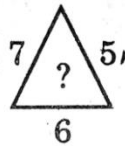
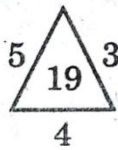
CLASS-X	AARAMBH	DATE: 01-10-19
Max. Time: 120 min		Max marks: 320

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.



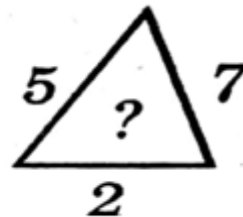
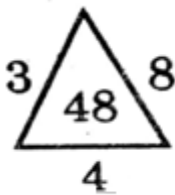
1) 27

2) 33

3) 41

4) 47

2.



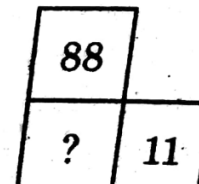
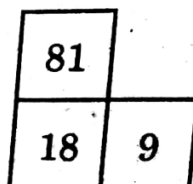
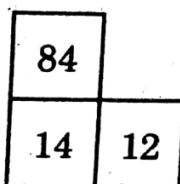
1) 27

2) 35

3) 54

4) 64

3.



1) 16

2) 21

3) 61

4) 81

Directions (Questions 4 to 8): Study the following information carefully to answer the given questions: Madan and Rohit are in the same team of hockey. Parth defeated Rohit in badminton but lost to Sachin in tennis. Nitin teams with Sagar in football and with Sachin in hockey. Rohit defeated Sachin in chess. Those who play cricket do not play badminton, volleyball or tennis. Madan and Parth are in opposite teams of basketball. Nitin represents his state in cricket while Sagar does so at the district level. Boys who play chess do not play football, basketball or volleyball. Madan and Parth are together in the volleyball team. Boys who play football also play hockey.

4. Name the boys who do not play football.

1) Sachin, Nitin

2) Rohit, Sagar

3) Rohit, Sachin

4) Rohit, Nitin

5. Who plays both hockey and tennis?

1) Sachin

2) Rohit

3) Nitin

4) Parth

6. Which is the most popular game with this group?

1) Cricket

2) Hockey

3) Football

4) Badminton

7. Who plays the largest number of games?

1) Sagar

2) Rohit

3) Parth

4) Nitin

8. Which boy plays both badminton and hockey?

1) Sachin

2) Rohit

3) Nitin

4) Parth

9. A family has a man, his wife, their four sons and their wives. The family of every son also has 3 sons and one daughter. Find out the total number of male members in the whole family.

1) 4

2) 8

3) 12

4) 17

10. Satish remembers that his brother's birthday is after fifteenth but before eighteenth of February whereas his sister Kajal remembers that her brother's birthday is after sixteenth but below nineteenth of February. On which day in February is Satish's brother's birthday?

1) 16th2) 17th3) 18th4) 19th

11. If the seventh day of a month is three days earlier than Friday, what day will it be on the nineteenth day of the month?

1) Sunday

2) Monday

3) Wednesday

4) Friday

12. An accurate clock shows 8 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

- 1) 144° 2) 150° 3) 168° 4) 180°

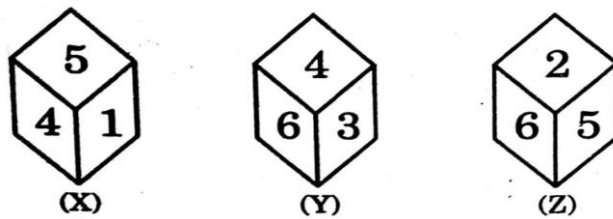
13. The reflex angle between the hands of a clock at 10.25 is:

- 1) 180° 2) $192\frac{1}{2}^\circ$ 3) 195° 4) $197\frac{1}{2}^\circ$

14. If L stands for +, M stands for -, N stands for \times , P stands for \div , then $14 N 10 L 42 P 2 M 8 = ?$

- 1) 153 2) 216 3) 248 4) 251

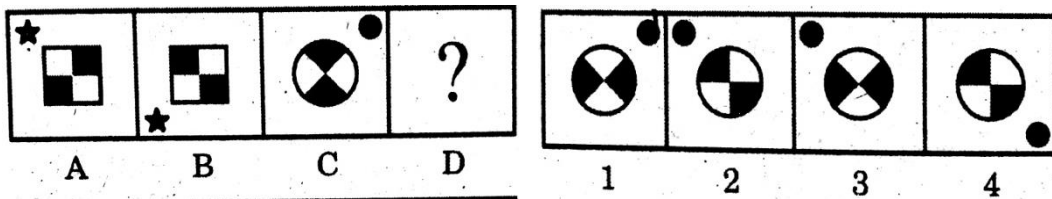
Directions (Q.No-15-16): Three different positions X, Y and Z of a dice are shown in the figures given below. Answer the following questions which are based upon these figures.



15. Which number lies at the bottom face in position X?
 1) 2 2) 3 3) 6 4) Cannot be determined
16. Which number lies at the bottom face in position Y?
 1) 1 2) 2 3) 5 4) Cannot be determined

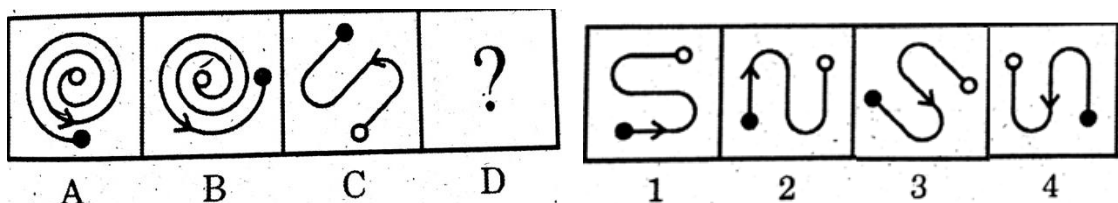
FIGURE ANALOGY(17-18)

17.



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

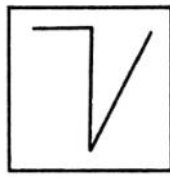
18.



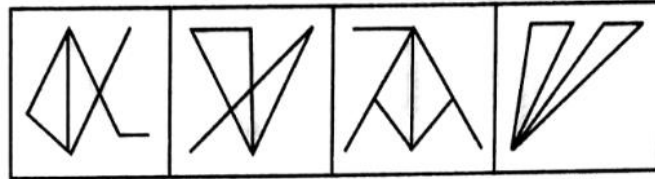
- 1) 1 2) 2 3) 3 4) 4

Directions (Q. No:19): Embedded Figure:

19.



(X)



(1)

(2)

(3)

(4)

1) 1

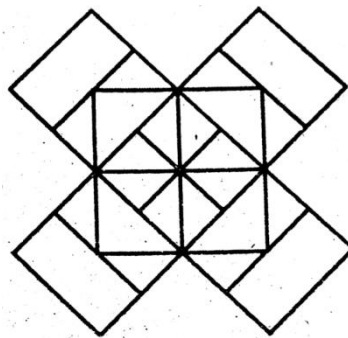
2) 2

3) 3

4) 4

Directions (Q.No-20) : Count the number of squares in the following figures

20.



1) 22

2) 20

3) 18

4) 14

MATHEMATICS (Q.NO.21 TO 35)

21. The number of dimensions, a point has

1) 0

2) 1

3) 2

4) 3

22. An exterior angle of a triangle is 105° and its two interior opposite angles are equal. Each of the these equal angles is

1) $37\frac{1}{2}^\circ$

2) $52\frac{1}{2}^\circ$

3) $72\frac{1}{2}^\circ$

4) 75°

23. The figure obtained by joining the mid-points of the adjacent sides of a rectangle of sides 8cm and 6cm is

1) a rectangle of area $24cm^2$

2) a square of area $25cm^2$

3) a trapezium of area $24cm^2$

4) a rhombus of area $24cm^2$

24. In a triangle ABC, X and Y are points on the segments AB and AC respectively, such that AX: XB = 1:2 and AY: YC=2:1. If the area of triangle AXY is 10 then the area of the triangle ABC is

- 1) 30Sq. units 2) 35 Sq. units 3) 40 Sq. units 4) 45 Sq. units
25. The total surface area of a cube is 96 cm^2 . The volume of the cube is
- 1) 8 cm^3 2) 512 cm^3 3) 64 cm^3 4) 27 cm^3
26. If $AB=QR$, $BC = PR$ and $CA = PQ$, then
- 1) $\triangle ABC \cong \triangle PQR$ 2) $\triangle CBA \cong \triangle PRQ$
 3) $\triangle BAC \cong \triangle RPQ$ 4) $\triangle PQR \cong \triangle BCA$
27. ABCD is a rhombus such that $\angle ACB = 40^\circ$, then $\angle ADB$ is
- 1) 40° 2) 45° 3) 50° 4) 60°
28. The number of integers 'n' such that $n^4 - 4n^3 + 5n^2 - 30n + 27$ is a prime number is
- 1) 0 2) 3 3) 1 4) 3
29. If (x-2) and (x-3) are factors of $x^4 + ax^3 + bx^2 + 2x - 24 = 0$ then which of the following is not true.
- 1) $a + b = -9$ 2) $a + b = 9$ 3) $a^2 + b^2 = 353$ 4) $|a| + |b| = 25$
30. If $3x + y = 5$ and $6x + ay = 7$ are intersecting lines then $a = \underline{\hspace{2cm}}$
- 1) =2 2) $\neq 2$ 3) > 2 4) < 2
31. If two circles of Radii 'R' and 'r' touch internally, of the distance between their centres is 'd' then
- 1) $d < R - r$ 2) $d = R + r$ 3) $d > R - r$ 4) $d = R - r$
32. Water is drawn out of a tank full to the brim. The shape of the tank is that of a cuboid of dimensions $3\text{ m} \times 1.4\text{ m} \times 80\text{ cm}$. If the rate of water flowing out is $100\text{ cm}^3 / \text{s}$ then find the height of the water level in the tank after 5 minutes.
- 1) $78\frac{2}{7}\text{ cm}$ 2) $87\frac{2}{7}\text{ cm}$ 3) $97\frac{2}{7}\text{ cm}$ 4) $79\frac{2}{7}\text{ cm}$
33. If $\sin \theta = \cos \theta$ then the value of θ
- 1) 45° 2) 30° 3) 60° 4) 90°
34. If two coins are tossed simultaneously, then the probability of getting exactly one head is.
- 1) $\frac{1}{4}$ 2) $\frac{1}{2}$ 3) $\frac{3}{4}$ 4) $\frac{2}{3}$
35. The median of a set of 9 distinct observations is 20.5. If each of the largest 4 observations of the set is increased by 2, then the median of the new set
- 1) Is decreased by 2
 2) Is two times the original median
 3) Remains the same as that of the original set

4) Is increased by 2

PHYSICS (Q.NO.36 TO 50)

- 36. The voltmeter always connected in _____ to an electrical conductor.**
1) Series
2) Parallel
3) Series and parallel
4) neither series nor parallel
- 37. In a straight conductor of uniform cross-section charge q is flowing for time t . Let s be the specific charge of an electron. The momentum of all the free electrons per unit length of the conductor, due to their drift velocity only is**
1) $\frac{q}{ts}$
2) $\left(\frac{q}{ts}\right)^2$
3) $\sqrt{\frac{q}{ts}}$
4) qts
- 38. A copper wire of length 1 m and radius 1 mm is joining in series with an iron of length 2 m and radius 3 mm and I current is passed through the wires. The ratio of the current density in the copper and iron wires is**
1) 2 : 3
2) 6 : 1
3) 9 : 1
4) 18 : 1
- 39. Two circular coils are made of two identical wires of same length and carry same current. If the number of turns of the two coils are 4 and 2, then the ratio of magnetic induction at the centres will be**
1) 2:1
2) 1:2
3) 1:1
4) 4:1
- 40. An AC generator can be converted into DC generator by replacing**
1) Armature with coil
2) Concave magnets with horse shoe magnet
3) Slip rings with split rings
4) All of the above.
- 41. A solenoid carrying a current behaves like a**
1) Bulb
2) Resistor
3) Motor
4) Magnet
- 42. The direction of acceleration an object moving in a circular path is:**
1) Directed away from the centre of the circle
2) Directed towards the centre of the circle
3) Directed upward in the plane of the circle
4) None of these
- 43. Which of the following is not a vector?**
1) Displacement
2) Velocity
3) Acceleration
4) Speed
- 44. If the distance between centres of earth and moon is D and the mass of earth is 81 times the mass of moon, then at what distance from centre of earth the gravitational force will be zero**

- 1) $\frac{D}{2}$ 2) $\frac{2D}{3}$ 3) $\frac{4D}{3}$ 4) $\frac{9D}{10}$

45. 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

46. Which of the following is the evidence to show that there must be a force acting on the earth and directed towards the sun?

- 1) Deviation of the falling bodies towards the east
2) Revolution of the earth around the sun
3) Phenomenon of day and night
4) Apparent motion of sun around the earth

47. A ball is dropped from a height of 10 m.

- 1) Its potential energy increases and kinetic energy decreases during the falls
2) Its potential energy is equal to the kinetic energy during the fall.
3) The potential energy decreases and the kinetic energy increases during the fall.
4) The potential energy is '0' and kinetic energy is maximum while it is falling.

48. What do dolphins, bats and porpoise use

- 1) Ultrasound 2) Visibility
3) Wave length 4) None of them

49. Which characteristic is this? We can distinguish between sound having same pitch and loudness.

- 1) Tone 2) Note 3) Pitch 4) Timber

50. What is state of motion?

- 1) position of rest 2) position of motion
3) both by the state of rest or motion 4) none of these

CHEMISTRY (Q.NO.51 TO 65)

51. _____ is an intrinsic property of an electron

- 1) Emission of Energy 2) Absorption of Energy
3) Spin 4) Emission of Radiation

52. The limiting line in Paschen series corresponds to

- 1) $n_1 = 2; n_2 = 3$ 2) $n_1 = 3; n_2 = 4$
3) $n_1 = 3; n_2 = 10$ 4) $n_1 = 3; n_2 = \infty$

53. Calculate the number of Photons emitted in 10 hours by a 60W Sodium Lamp

(λ of Photon = 5893\AA)

- 1) 5.3×10^{24} 2) 6.41×10^{24} 3) 7.6×10^{23} 4) 9.1×10^{21}

54. $xKClO_3 \rightarrow yKCl + zO_2$ what are x,y & z

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

55. Which of the following is a Redox Reaction

- 1) $NaCl + KNO_3 \rightarrow NaNO_3 + KCN$ 2) $CaC_2O_4 + 2HCl \rightarrow CaCl_2 + H_2C_2O_4$
3) $Mg(OH)_2 + 2NH_4Cl \rightarrow MgCl_2 + 2NH_2OH$ 4) $Zn + 2AgCN \rightarrow 2Ag + Zn(CN)_2$

56. X on heating forms Y (black coloured compound) along with the liberation of Z (Reddish brown gas) what are X, Y , Z

- 1) X= $NaNO_3$ Y= N_2O Z= Na_2O
2) X= $Pb(NO_3)_2$ Y= PbO Z= NO_2
3) X= $CaCO_3$ Y= CaO Z= CO_2
4) X= $MgCO_3$ Y= MgO Z= CO_2

57. Compound which liberate H_2S gas when treated with acid

- 1) $CaSO_4$ 2) $Pb(NO_3)_2$ 3) FeS 4) $FeSO_4$

58. What is the colour of HPh in acidic medium?

- 1) Red 2) Pink 3) Colourless 4) yellow

59. Which is the basic salt?

- 1) $NaHCO_3$ 2) $Zn(OH)Cl$ 3) $NaHSO_4$ 4) NaH_2PO_4

60. Which of the following transitions are not allowed in the normal electronic emission spectrum of an atom ?

- 1) $2s \rightarrow 1s$ 2) $2p \rightarrow 1s$ 3) $3d \rightarrow 4p$ 4) $5p \rightarrow 3s$

61. The $n + l$ value for the 3p energy level is

- 1) 4 2) 7 3) 3 4) 1

62. Lines in an atomic emission spectrum of an element are due to :

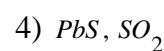
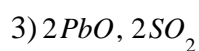
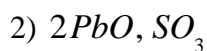
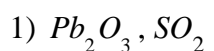
- 1) Excitation of electrons from lower energy levels to higher energy levels
2) Energy of electrons
3) Excited electrons dropping from higher levels to lower energy levels
4) Nuclear charges

63. The composition of magnesite is

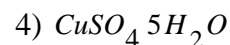
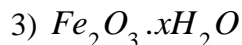
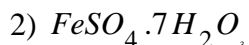
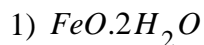
- 1) $MgCO_3 \cdot CaCO_3$ 2) $MgCl_2 \cdot KCl \cdot 6H_2O$



64. $2PbS + 3O_2 \rightarrow B + C$ then **B and C are**



65. **The formula of rust is**



BIOLOGY (Q.NO.66 TO 80)

66. **Classify the following organisms into their respective kingdoms given as per Whittaker's five kingdom classification**

(1) Herbs

(2) Lactobacillus

(3) Euglena

(4) Funaria

(5) Balanoglossus

1) Fungi, Plantae, Animalia, Monera and Protista

2) Plantae, Monera, Protista, Fungi and Animalia

3) Plantae, Protista, Monera, Fungi and Animalia

4) Plantae, Monera, Protista, Bryophyta and Animalia

67. **Which among the following is exclusively marine?**

1) Porifera

2) Echinodermata

3) Mollusca

4) Pisces

68. **Expand ICRISAT**

1) Indian Crop Research Institute for Semi-Arid Tropics

2) International Cereal Research Institute for Semi-Arid Tropics

3) Indian Cereal Research Institute for Semi-Arid Tropics

4) International Crop Research Institute for Semi-Arid Tropics

69. **You are aware of Polio Eradication Programme in your city. Children are vaccinated because**

1) Vaccination kills the polio causing microorganisms

2) Prevents the entry of polio causing organism

3) It creates immunity in the body

4) All the above

70) **Viruses, which cause hepatitis, are transmitted through**

1) Air

2) Water

3) Food

4) Personal contact

71) **Choose the wrong statement**

1) The light yellow fluid called Lymph flows only in one direction that is from heart to the tissue.

2) The basic filtration unit in the kidney is a cluster of thin walled blood capillaries called as a Nephron

3) Translocation is not a simple physical process but needs energy which is obtained from ATP

4) Evaporation of water from the leaves to atmosphere results in a decrease in the water potential of the epidermal cells

72) The correct order of steps occurring in nutrition in animals is

- 1) Ingestion -->Absorption-->Digestion -->Assimilation -->Egestion
- 2) Ingestion -->Digestion -->Assimilation --> Absorption-->Egestion
- 3) Ingestion -->Digestion -->Absorption-->Assimilation -->Egestion
- 4) Ingestion -->Assimilation-->Digestion-->Absorption -->Egestion

73) Which of the following is the correct order of urine formation?

- 1) Glomerular filtration- Tubular reabsorption- Tubular secretion-Concentration of urine
- 2) Glomerular filtration- tubular secretion- Tubular reabsorption -Concentration of urine
- 3) Concentration of urine - Tubular reabsorption - Tubular secretion – Glomerular filtration
- 4) Glomerular filtration - Tubular reabsorption - Tubular secretion- Concentration of urine

74) Mountaineers generally carry oxygen cylinders as supplementary supply of oxygen. This is because of:

- 1) Low levels of Haemoglobin in them
- 2) High levels of Haemoglobin in them
- 3) Lower concentration of oxygen at higher altitudes
- 4) Higher concentration of oxygen at higher altitudes

75) Read the following terms given below:

Root hairs	Xylem	Urethra
Arteries	Kidneys	Veins
Atria	Capillaries	Heart
Ureter	Phloem	Urinary bladder

Group the terms in the category of Circulatory system of animals.

- 1) Phloem, urethra, Atria, capillaries
- 2) Arteries, heart, capillaries, xylem
- 3) Urethra, Ureter, kidneys, capillaries
- 4) Arteries, Atria, capillaries, heart

76. Muscles that help in pushing the lymph flowing in lymphatic vessels and blood flowing in veins towards the heart are

- 1) Skeletal muscles
- 2) Cardiac muscles
- 3) Smooth muscles
- 4) Unstriated muscles

77) Observe the diagram and answer the following questions

- a) Shoots response
- b) Roots response
- c) Type of movement

d) Hormone responsible for the movement

- 1) Positive geotropism, positive hydrotropism, nastic movement, gibberellins.
- 2) Negative geotropism, positive phototropism, tropic movements, cytokinins.
- 3) Negative phototropism, positive geotropism, Thigmotropic movement, Auxins.
- 4) Positive Phototropism, Negative phototropism, tropic movements, Auxins.

78) Match the hormones given in column I with their functions given in column II:**Hormones**

- a) Amount and regulation of hormone release
- b) Causes the male to start producing sperms
- c) Prepares the body for an emergency
- d) Controls the metabolic rate
- e) Simple Goitre

Functions

- i) Thyroxine
- ii) Adrenaline
- iii) Iodine
- iv) Testosterone
- v) Feedback mechanism

- 1) a-v; b-iv; c-ii; d-i; e-iii
- 2) a-iii; b-ii; c-v; d-iv; e-i
- 3) a-v; b-iv; c-ii; d-i; e-iii
- 4) a-iv; b-v; c-i; d-iii; e-ii

79) The problems for criticism about large dams are that they

- 1) Displace large number of peasants and locals without proper rehabilitation
- 2) Swallow up huge amounts of public money without the generation of proportionate benefits
- 3) Contribute enormously to deforestation and the loss of biological diversity
- 4) All of the above.

80) The following are stakeholders of forests. Which one of these cause the maximum damage to forest?

- 1) The industrialists
- 2) People who live in or around the forest
- 3) The wildlife and native enthusiasts
- 4) The forest department of the government