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SONI COLLEGE
SOLAPUR



Question Paper-Batch-I

Date: 07.12.2025

Maximum Marks: 300

Std. IX

SYLLABUS

- MATHS** : Real numbers, Polynomials, Linear equations in two variables,
Parallel Lines, Triangles, Quadrilaterals
- SCIENCE** : Laws of Motion, Work & energy, Measurement of Matter, Acid
Bases & Salts, Classification of Plants, Useful & Harmful Micro
- LOGIC & REASONING**

INSTRUCTIONS TO CANDIDATE

GENERAL:

- 1. This Question paper consists of 3 - sections. Containing 75 Questions.**
- 2. Section-I = Mathematics (Q.1 - Q.30)**
- 3. Section-II = Science.** This session consists of 30 questions from Chemistry, Physics and Biology (Q. 31 - Q. 60)
- 4. Section - III = Logic and Reasoning (Q. 61 - Q. 75)**
- 5. There is Negative Marking.**

MARKING SCHEME:

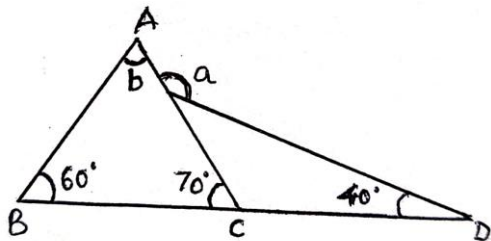
- 1. Each Question has four options, from which only one option is correct.**
- 2. For each correct option '4' marks will be given.**
- 3. There is (-1) for every wrong answer**

STD - IX

SECTION - 1 - MATHS

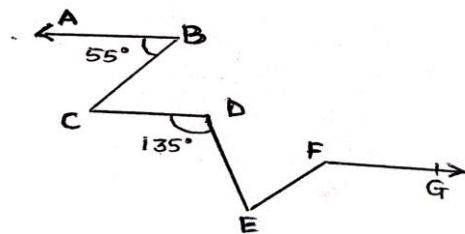
1. If $x = \frac{\sqrt{3}+1}{2}$, then the value of $4x^3 + 2x^2 - 8x + 7$ is ---.
- a) 8 b) 10 c) 6 d) 4
2. If $a + b + c = 0$, then $\frac{1}{2}\left(\frac{a^2}{bc} + \frac{b^2}{ac} + \frac{c^2}{ab}\right)$ is -----.
- a) 0 b) $\frac{1}{2}$ c) $\frac{3}{2}$ d) -1
3. The value of $(6561)^{0.16} \times (6561)^{0.09}$ is -----.
- a) 3 b) 27 c) 9 d) 81
4. If $a^m \cdot a^n = a^{mn}$, then $m(n-2) + n(m-2)$ is -----.
- a) $\frac{2n+4}{n-1}$ b) 0 c) $\frac{n(2n+4)}{n-1}$ d) $\frac{n+1}{n-1}$
5. If both $(x-2)$ and $(x-\frac{1}{2})$ are factors of $Px^2 + 5x + r$, then -----.
- a) $P + r = 0$ b) $P + 2r = 0$ c) $P = r$ d) $2P + r = 0$
6. Which of the following is a rational number?
- a) $2 + \sqrt{3}$ b) $(2 - \sqrt{-5})(2 + \sqrt{5})$ c) $\sqrt{3} - 8$ d) $\frac{\sqrt{5}}{2}$
7. If $4^{44} + 4^{44} + 4^{44} + 4^{44} = 4^x$, then x is ----.
- a) 44 b) 176 c) 45 d) 11
8. If $2x - 5y = 13$ and $xy = 5$, then the value of $8x^3 - 125y^3$ is -----.
- a) 4130 b) 4211 c) 4126 d) 4147
9. The value of $5^4\sqrt[3]{\sqrt{5}} - \sqrt[3]{\sqrt[4]{5}}$ is -----.
- a) $25\sqrt{12}$ b) $4\sqrt[7]{5}$ c) $5^5\sqrt{12}$ d) $4^{12}\sqrt{5}$
10. When $x^{11} + 1$ is divided by $x + 1$ then the remainder is -----.
- a) 2 b) 0 c) 1 d) -1

11. In the given figure, the values of a and b respectively will be -----.



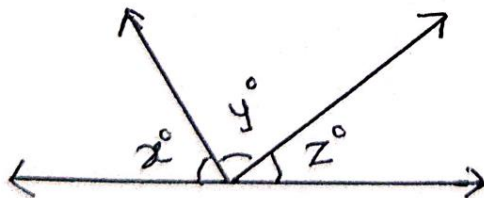
- a) $150^\circ, 50^\circ$ b) $100^\circ, 80^\circ$
 c) $120^\circ, 40^\circ$ d) $110^\circ, 50^\circ$

12. If $AB \parallel CD \parallel FG$ and $BC \parallel FE$ in the given figure, then the measure of reflex $\angle DEF$ is -----.



- a) 200° b) 275°
 c) 280° d) 180°

13. In figure, if $\frac{y}{x} = 5$ and $\frac{z}{x} = 4$, then the value of x is -----.



- a) 8° b) 18°
 c) 12° d) 15°

14. Graph of the equation $3x - 7y = 0$ -----.

- a) Passes through the origin b) Does not pass through the origin
 c) is a straight line parallel to x - axis d) is a straight line parallel to y - axis

15. The point on the graph of the linear equation $2x + 5y = 19$, whose ordinate is $1\frac{1}{2}$ times its abscissa is ----.

- a) (2, 3) b) (3, 2) c) (-2, -3) d) (-3, -2)

16. If the graph of the equation $4x + 3y = 12$ cuts the coordinate axes at A & B, then hypotenuse of right triangle AOB is of length -----.

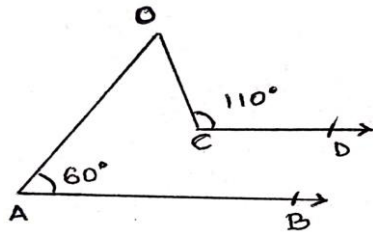
- a) 4 units b) 3 units c) 5 units d) none of these

17. The measure of an angle which exceeds its complement by 30° is -----.

- a) 150° b) 120° c) 60° d) 80°

18. Statement -1 (A) in fig, $AB \parallel CD$, $\angle BAO = 60^\circ$, and $\angle OCD = 110^\circ$,
 then $\angle AOC = 50^\circ$

Statement - 2 (R) : If two parallel lines are intersected by a transversal, then each pair of consecutive interior angles are equal -----.



- a) Statement 1 and 2 both are true. Statement 2 is a correct explanation for statement 1
- b) Statement 1 and 2 both are true Statement 2 is not a correct explanation for statement 1
- c) Statement 1 is true, statement 2 is false
- d) Statement 1 is false, statement 2 is true

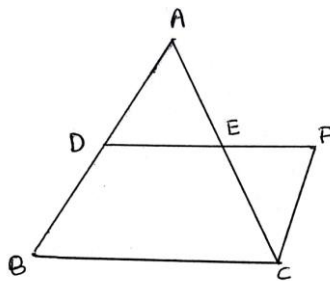
19. The distance between the images of points $P(-7,4)$ and $Q(7,4)$ in x axis is -----.

- a) 7 units
- b) 8 units
- c) 11 units
- d) 14 units

20. If the point $(2a - 1, a - 2)$ lies on the graph of the equation $x - y = \frac{-1}{2}$, then the value of a is

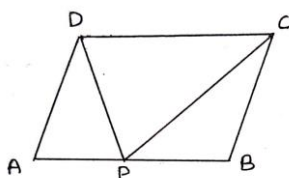
- a) $\frac{-1}{2}$
- b) $\frac{-3}{2}$
- c) $\frac{-5}{2}$
- d) $\frac{-7}{2}$

21. In figure D and E are the Mid - points of the sides AB and AC respectively of ΔABC . DE is produced to F. To prove that CF is equal and parallel to DA, we need an additional information which is -----.



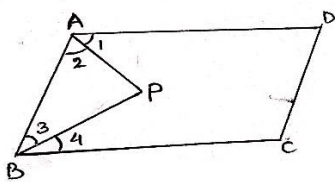
- a) $\angle DAE = \angle EFC$
- b) $AE = EF$
- c) $DE = EF$
- d) $\angle ADE = \angle ECF$

22. ABCD is a parallelogram, as shown in figure. If $AB = 2AD$ and P is the midpoint of AB, then $\angle CPD$ is equal to ----.



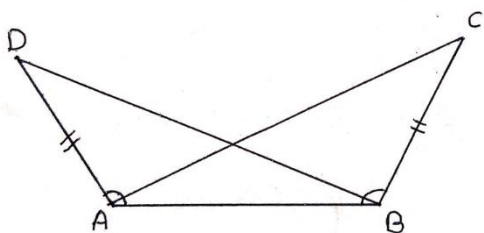
- a) 90°
- b) 60°
- c) 45°
- d) 135°

23. In the figure, ABCD is a parallelogram, if AP & BP are bisectors of $\angle A$ and $\angle B$ which meet at P, then $2\angle APB$ can be equal to -----.



- a) $2\angle A + \angle D$
- b) $\frac{1}{2}(\angle A + \angle C)$
- c) $\angle B + \frac{1}{2}\angle C$
- d) $\angle C + \angle D$

24. In figure, If $AC = BD$ and $\angle CAB = \angle DBA$ then $\angle ACB =$ -----.

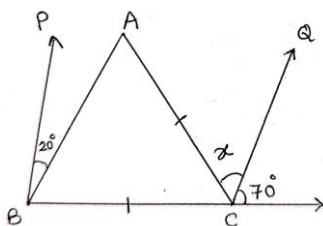


- a) $\angle BAD$
- b) $\angle ABC$
- c) $\angle ABD$
- d) $\angle BDA$

25. Orthocentre is the point of concurrence of all the three -----.

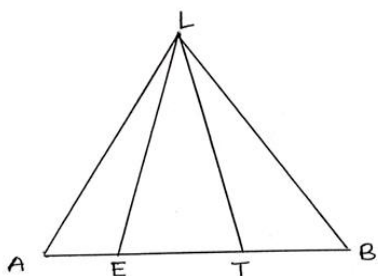
- a) Medians of a triangle
- b) Perpendicular bisectors of a triangle
- c) Altitudes of a triangle
- d) Angle of bisectors of a triangle

26. In figure If $BP \parallel CQ$ and $AC = BC$, then the measure of x is -----.



- a) 20°
- b) 25°
- c) 30°
- d) 35°

27. In the given figure, AETB is a straight line such that $AE = TB$. If $ET = 30$ cm, $LE = LT = 25$ cm and the perimeter of $\triangle LAB$ is 20 cm more than the perimeter of $\triangle LET$, then the length of AE is -----.

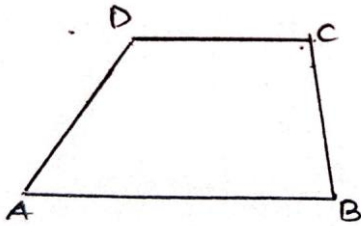


- a) 6 cm
- b) 7 cm
- c) 8 cm
- d) 9 cm

28. In a parallelogram ABCD if $AB = 2x + 5$, $CD = y + 1$, $AD = y + 5$ and $BC = 3x - 4$, then the ratio $AB : BC$ is equal to -----.

- a) 71 : 21 b) 12 : 11 c) 31 : 35 d) 4 : 7

29. In the given figure, if $AB = AD$ and $BC = CD$, then which of the following is true?



- a) $\triangle ABC \cong \triangle ADC$
b) $\angle ABC = \angle ADC$
c) $AC \perp BD$
d) All of these

30. If the bisectors of $\angle A$ and $\angle B$ of quadrilateral ABCD intersect each other at P, of $\angle B$ and $\angle C$ at Q, of $\angle C$ and $\angle D$ at R and of $\angle D$ and $\angle A$ at S then PQRS is a -----.

- a) Rectangle b) Rhombus
c) Parallelogram d) Quadrilateral whose opposite sides are supplementary

SECTION - 2 - SCIENCE

31. In case of negative work the angle between the force and displacement is

- a) 0° b) 45° c) 90° d) 180°

32. A 50 W bulb is consumed for 2 hours. The energy consumed is ----.

- a) 100 J b) 50 J c) 360000 J d) 720000 J

33. What is the momentum of a body of mass $2m$ & velocity $v/2$?

- a) $mv/4$ b) mv c) $2mv$ d) $mv/2$

34. A carpenter exerts a force of magnitude 1.5N at right angles to the surface of a nail of mass 3 gram to drive it into the wood. If wood offers a resistive force of 0.6 N and the time of interaction of hammer and the nail is 0.01 sec, the depth through which the nail penetrate is -----.

- a) 15 m b) 1.5 cm c) 15 cm d) 1.5 mm

35. There will be a change in the speed or in the direction of motion when it is acted upon by -----.

- a) An unbalanced force b) Balanced force
c) Uniform force d) Zero force

36. A body is falling from a height h , After it has fallen a height $h/2$, it will possess ---.
- a) only potential energy b) only kinetic energy
c) half potential and half kinetic energy d) more kinetic & less potential energy
37. A girl is carrying a school bag of 3kg mass on her back and moves 200m on a levelled road. The work done against the gravitational force will be ($g = 10\text{ms}^{-2}$)
- a) $6 \times 10^3 \text{ J}$ b) 6 J c) 0.6J d) zero
38. The potential energy of a body at a height is given by -----.
- a) $PE = mgh$ b) $PE = \frac{1}{2} mv^2$ c) $PE = mg/h$ d) $PE = m^2gh$
39. A plate, a ball and a child all have the same mass. The one having the more inertia is the -----.
- a) Plate b) Ball c) Child d) All have equal inertia
40. A bullet of mass 20gm is fired from a gun of mass 8 kg with a velocity of 400 m/s , calculate the recoil velocity of gun -----.
- a) -2 m/s b) 2 m/s c) 1 m/s d) - 1 m/s
41. The acid having highest hydrogen ion concentration is one with -----.
- a) $\text{pH} = 2.5$ b) $\text{pH} = 1.8$ c) $\text{pH} = 7$ d) $\text{pH} = 10$
42. Identify the basic salt from the following
- a) Na_2CO_3 b) NaHCO_3 c) KCl d) NH_4Cl
43. Which of the following has no water of crystallization?
- a) Blue vitriol b) Gypsum c) Washing soda d) Baking soda
44. Tincture of iodine has antiseptic properties. This solution is made by dissolving----.
- a) Iodine in potassium iodine b) Iodine in vaseline
c) Iodine in water d) Iodine in alcohol
45. Which of the following has highest density?
- a) Kerosene b) water c) iron d) wood
46. Which of the following are homogenous in nature?
- i) ice ii) wood iii) soil iv) clean air
- a) i and iii b) ii & iv c) i & iv d) iii and iv

47. Two chemical species X and Y combine together to form a product P which contains both X and Y, $X + Y \rightarrow P$

X & Y cannot be broken down into simpler substances by simple chemical reactions. Which of the following concerning the species X, Y & P are correct?

- i) P is compound ii) X & Y are compounds
iii) X & Y are elements iv) P has a fixed composition

- a) i, ii and iii b) i, ii and iv c) ii, iii and iv d) i, iii and iv

48. When we put some crystals of potassium permanganate in a beaker containing water, we observe that after sometime whole water has turned pink. This is due to-

- a) Boiling b) Melting of potassium permanganate crystals
c) Sublimation of crystals d) Diffusion

49. A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish orange. Which of the following would

change the colour of this pH paper to greenish - blue?

- a) vinegar b) Lemon juice c) Common salt d) An antacid

50. Which of the following can be considered as an example of olfactory indicators?

- a) onion b) methyl orange c) Turmeric d) China rose

51. Which one of the following diseases is caused by protozoans?

- a) Malaria b) Influenza c) AIDS d) Cholera

52. Which of the following can make you ill if you come in contact with an infected person?

- a) High blood pressure b) Genetic abnormalities
c) Sneezing d) Blood cancer

53. Pteridophyta do not have -----.

- a) root b) stem c) flowers d) leaves

54. The locomotary organs of Echinodermata are

- a) tube feet b) muscular feet c) joined legs d) parapodia

55. Which of the following statements are correct?

- i) Genus comprises a group of related species
ii) Taxon represents a taxonomic group of individual organisms
iii) Family comprises a group of related genera
iv) Taxonomic category class include related orders

- a) i, ii and iv b) ii and iv c) i, iii and iv d) ii, iii and iv

56. Which one of the following is not a bacterial diseases?

- a) Cholera b) Tuberculosis c) Anthrax d) Influenza

57. We should not allow mosquitoes to breed in our surroundings because

- a) multiply very fast and cause pollution b) are vectors for many diseases
c) bite and cause skin diseases d) are not important insects

58. Making anti viral drugs is more difficult than making anti-bacterial medicines because -----.

- a) viruses make use of host machinery
b) viruses are on the border line of living and non - living
c) viruses have very few biochemical mechanisms of their own
d) viruses have a protein coat

59. Identify the member of porifera -----.

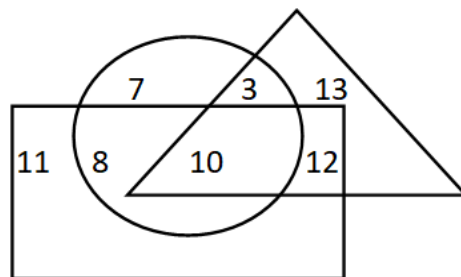
- a) Spongilla b) Euglena c) Penicillium d) Hydra

60. Well defined nucleus is absent in -----.

- a) algae b) blue green algae c) yeast d) diatoms

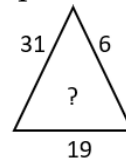
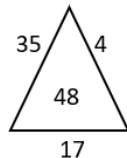
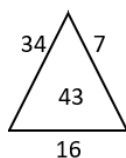
SECTION - 3 - LOGIC REASONING

61. If triangle represents poor people, rectangle represents educated people and circle represent jobs. Then which number represents uneducated poor people who are in Jobs ?



- a) 10 b) 12 c) 8 d) 3

62. Find the correct alternative which will replace the question mark?



- a) 49 b) 33 c) 27 d) 44

63. Y is in the East of X which is in the North of Z. If P is in the South of Z, then in which direction of Y, is P?

- a) North b) South c) South-East d) None of these

64. Find the missing numbers & Complete the series 34, 45, 57, ?, 54, 43.

- a) 88 b) 92 c) 75 d) 63

65. Complete the following series 8, 20, 36, 56, ...?

- a) 68 b) 80 c) 58 d) 42

66. Introducing a person, a boy said, "He is son of my grandfather's only son". How is that person related to the boy?

- a) Father b) Brother c) Grandfather d) Husband

67. K is the son of A's mother's sister. Q is daughter of D, who is the father of G and grandfather of A. P is the Daughter of H who is grandmother of K. D is husband of H and G is husband of L. How is P related to Q?

- a) Mother b) Sister c) Daughter d) Cousin

68. In a certain code "LION" is written as "MNHK". How is "MONKEY" is written in that code?

- a) BWKXSU b) XDJMNL c) FSHXIL d) GQWPJS

69. Select a suitable figure from the Answer Figures that would replace the question mark (?).

Problem Figures:



- (A) (B) (C) (D)

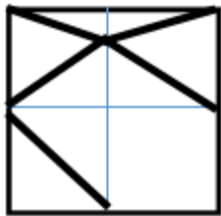
Answer Figures:



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

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

70. Identify the figure which completes the pattern.



71. Four girls are sitting on a bench to be photographed. Komal is to the left of Aakriti.

Disha is to the right of Aakriti. Ankita is between Aakriti and Disha. Who would be second from the left in the photograph ?

- a) Komal b) Aakriti c) Ankita d) Disha

72. In a certain code "ACIDIC" is written as "BELHNI". How is "BASIC" written in that code?

- a) DRLEP b) CKALE c) CCVMH d) CCQAN

73. Identify the wrong number in the series. 2, 4, 8, 14, 22, 30?

- a) 2 b) 14 c) 22 d) 30

74. Itanagar : Arunachal Pradesh :: Amravati : ?

- a) Nagaland b) Meghalaya c) West Bengal d) Andhra Pradesh

75. Find the odd one out.

- a) E13H b) D15K c) W36M d) G25P
