

ANGEL'S PUBLIC SCHOOL

SAMPLE PAPER

HALF YEARLY EXAM SESSION 2021 – 22

CLASS – IX SUBJECT: MATHEMATICS CODE – 041

TIME: 3 HRS

M.M: 80

General Instructions:

- (a) Section – A consists 20 M.C.Qs of 1 mark each.
- (b) Section – B consist 10 Fill in the Blanks of 1 mark each.
- (c) Section – C consists 10 True/ False of 1 mark each.
- (d) Section – D consists 11 questions of 3 marks each. Attempt any ten
- (e) Section – E consists 2 questions of 5 marks each.

SECTION – A

1. Which of the following is not a congruence criterion?
(a) A.A.A (b) R.H.S (c) S.S.S (d) S.A.S
2. Every rational number is a/an_____.
(a) whole number (b) natural number (c) integer (d) real number
3. Which of the following is an irrational number?
(a) $\sqrt{16}$ (b) $\sqrt{\left(\frac{12}{3}\right)}$ (c) $\sqrt{12}$ (d) $\sqrt{100}$
4. If the coordinates of a point are $(-3,-4)$, then it lies in the _____.
(a) first quadrant (b) second quadrant (c) third quadrant (d) fourth quadrant
5. The points $(-4,-8)$ lie in the _____.
(a) first quadrant (b) second quadrant (c) third quadrant (d) fourth quadrant
6. The point $(0, -5)$ lies_____.
(a) on the x-axis (b) on the y-axis (c) in the first quadrant (d) none of these
7. Area of triangle is equal to_____.
(a) base x height (b) $2(\text{base} \times \text{height})$ (c) $\frac{1}{2}(\text{base} \times \text{height})$ (d) $\frac{1}{2}(\text{base} + \text{height})$
8. The ratio of the sum of observations and the total number of observations is called_____.
(a) mean (b) median (c) mode (d) central tendency

9. The mean of $x+2$, $x+3$, $x+4$ and $x-2$ is_____.

- (a) $\frac{(x+7)}{4}$ (b) $\frac{(2x+7)}{4}$ (c) $\frac{(3x+7)}{4}$ (d) $\frac{(4x+7)}{4}$

10. The mode of the given data: 4, 6, 5, 9, 3, 2, 7, 7, 6, 5, 4, 9, 10, 10, 3, 4, 7, 6, 9, 9 is_____.

- (a) 7 (b) 9 (c) 10 (d) 6

11. The mean of the data 2, 3, 4, 5, 0, 1, 3, 3, 4, 3 is _____.

- (a) 2 (b) 2.2 (c) 2.4 (d) 2.8

12. If two lines intersect each other, then the vertically opposite angles are _____.

- (a) equal (b) unequal (c) cannot be determined (d) none of these

13. The median of the data: 155 160 145 149 150 147 152 144 148 is _____.

- (a) 149 (b) 150 (c) 147 (d) 144

14. Can we write 0 in the form of $\frac{p}{q}$?

- (a) yes (b) no (c) cannot be explained (d) none of the above

15. $\sqrt{9}$ is a _____ number.

- (a) a rational (b) an irrational (c) neither rational or irrational (d) none of these

16. Which of the following is an irrational number?

- (a) $\sqrt{16}$ (b) $\sqrt{\left(\frac{12}{3}\right)}$ (c) $\sqrt{12}$ (d) $\sqrt{100}$

17. $3\sqrt{6} + 4\sqrt{6}$ is equal to_____.

- (a) $6\sqrt{6}$ (b) $7\sqrt{6}$ (c) $4\sqrt{12}$ (d) $7\sqrt{12}$

18. Which of the following is a irrational number?

- (a) $\sqrt{23}$ (b) $\sqrt{225}$ (c) 0.3796 (d) 7.478478

19. The graph of $x = 3$ is a line_____.

- (a) parallel to x–axis at a distance of 3 units from the origin
(b) parallel to y–axis at a distance of 3 units from the origin
(c) makes an intercept 3 on the x–axis
(d) makes an intercept 3 on the y–axis

20. The graph of the linear equation $x+2y = 2$, cuts the y–axis at_____.

- (a) (2,0) (b) (0,2) (c) (0,1) (d) (1,1)

SECTION – B

Fill in the blanks.

21. The formula to calculate median when number of observations is even is ____.
22. Two congruent figures have ____ areas but the converse need not to be true.
23. When the two sides of a triangle are 5 cm and 13 cm and the perimeter is 32 cm, then the value of the third side is ____.
24. The line joining (3,2) and (-3,2) is parallel to ____.
25. Complement of an angle measured m is ____.
26. Mean of the first six natural numbers is ____.
27. A rectangle is a square with a pair of ____ sides equal.
28. If one angle of a linear pair is acute, then its other angle will be ____
29. If all sides of a quadrilateral are equal, it is a ____.
30. Two lines perpendicular to the same line are ____ to each other.

SECTION – C

State whether the following statements are true or false.

31. Every natural number is a whole number.
32. Every integer is a whole number.
33. Every rational number is a whole number.
34. Zero a rational number.
35. (-3,-5) lies in the IInd quadrant.
36. Every integer the is a rational number.
37. If the distance of a point P, lie on the y axis is 5 unit,the coordinates of P are (0,-5).
38. The coordinate of a point lying on x- axis to the left of origin at a distance of 3 units is (0,-3).
39. A triangle can have two right angles.
40. The class mark of 50-60 is 55.

SECTION – D (ATTEMPT ANY TEN)

41. Sides of a triangle are in the ratio 12:17:25 and its perimeter is 540 cm.
Find its area.
42. The triangular side walls of a flyover have been used for advertisements. The sides of the walls are 122m, 22m and 120m. The advertisements yield an earning of Rs 5000 per m^2 per year. A company hired one of its walls for 3 months. How much rent did it pay?

- 43.** In an isosceles triangle ABC with $AB = AC$, the bisectors of $\angle B$ and $\angle C$ intersect each other at O. Join A to O. Show that:
- (a) $OB = OC$ (b) AO bisects $\angle A$
- 44.** Write five solutions for the equation : $2x+y= 7$
- 45.** Yamini and Fatima, two students of class IX of a school, together contributed Rs 100 towards the PM relief fund to help the earthquake victims. Write a linear equation which satisfies this data. Draw the graph of the same.
- 46.** Plot the points (x,y) on the graph choosing suitable units of distance on the axes.
 $(-2,8), (-1,7), (0,1.25), (3,-1)$
- 47.** Find three different irrational numbers between $\frac{5}{7}$ and $\frac{9}{11}$.
- 48.** AD is an altitude of an isosceles triangle ABC in which $AB= AC$. Show that
- (a) AD bisects BC (b) AD bisects $\angle A$
- 49.** In which quadrant or on which axis do each of the points $(-2,4), (3,-4), (1,3), (7,-8)$ lie. Represent with a graph.
- 50.** Find five irrational numbers between $\frac{1}{7}$ and $\frac{2}{7}$.
- 51.** Express $0.\overline{6}$ in the form of $\frac{P}{Q}$, where p and q are integers and $q \neq 0$.

SECTION – E

- 52.(a)** What is the name of the horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?
- (b)** In $(2,5)$, write the abscissa and the ordinate.
- (c)** Find: $(64)^{1/2}$
- (d)** Simplify: $(\sqrt{2}+\sqrt{5})^2$
- (e)** Find six rational numbers between 3 and 4.
- 53.** Find four different solutions of $x+ 2y=6$. Draw the graph also.