DAV PUBLIC SCHOOL,POKHARIPUT, BHUBANESWAR

PA-3 ASSESSMENT-2020-21

CLASS-IX, SUBJECT- MATHEMATICS

TIME- 1hr 30 min   MAX.MARKS-40

General Instructions:

- All questions are compulsory.
- Q.no 1-12 are multiple choice questions carries 1 mark each.
- There are two case study questions consist of 4 questions each (Q no. 13-20) carries 1 mark each.
- Q.no 21-24 are short answer type -1 questions of 2 marks each.
- Q.no 25-28 are short answer type-2 questions 0f 3 marks each.

Choose the correct option:

1. The graph of $2x = 1$ is parallel to the
    a. X-axis at a distance of 1 unit   c. y-axis at a distance of 1 unit
    b. X-axis at a distance of ½ unit.   d. y-axis at a distance of ½ unit.
2. If we multiply or divide both sides of a linear equations with a non-zero number, then the solution of the linear equation
    a. Changes   b. remains the same   c. changes in case of multiplication only.   d. changes in case of division only
3. Coordinates of the points where the graph of the equation y = 2x+4 intersects the x-axis and y-axis respectively are
    a. (2,0)(0,-4)   b. (4,0)(0,-2)   c. (-2,0)(0,4)   d. (2,2)(4,0)
4. If (2p-1,p) is a solution of the equation 10x-9y=12,then the value of p is
    a. 1   b. 4   c. 2   d. 3
5. Coordinates of the point on the graph of the linear equation 2x+5y =19, whose ordinate is one and half times of the abscissa is
    a. (3,4.5)   b. (2.3)   c. (4,6)   d. (5/2,2)
6. In a frequency distribution, the mid value of a class is 60.5 and the width of the class is 10 then the lower limit of the class is
    a. 55.5   b. 65.5   c. 56.5   d. 62.5
7. In a histogram, which of the following is proportional to the frequency of the corresponding class?
    a. Length of the rectangle   b. width of the rectangle   c. area of the rectangle   d. perimeter of the rectangle
8. The width of each of 5 continuous classes in a frequency distribution is 5 and the lower-class limit of the lowest class is 10. The upper-class limit of the highest class is
    a. 15   b. 35   c. 40   d. 25
9. Which of the following is not the graphical representation of statistical data?
    a. Bar graph   b. histogram   c. frequency polygon   d. cumulative frequency distribution
10. In a histogram, each class rectangle is constructed with base as
    a. Frequency   b. class interval   c. range   d. size of the class
11. If a spherical balloon grows to twice its radius when inflated, then the ratio of the volume of the inflated balloon to the original balloon is
    a. 8:1   b. 4:1   c. 6:1   d. 5:1
12. AD is the diameter of a circle and AB is a chord. If AD= 34 cm and AB= 30 cm, then the distance of AB from the centre of the circle is
    a. 5 cm   b. 6 cm   c. 7 cm   d. 8 cm

CASE STUDY-1

There were 3 friends A, T and M. And every evening they used to play a game by standing on a circle drawn in the park near by their house. A throws the ball to T , T to M and M to A. As their PET teacher had explained them in the school that playing with balls improves kids motor skills, hand-eye coordination and timing, which are important parts of the development parts of the development programme of toddlers.

13. If the distance between A and T, T and M is 6 cm each, then
    a. $\angle AOT = \angle MOT$ b. $\angle AOT = \angle AMT$ c. $\angle MAT = \angle MOT$ d. None of these
14. What is the relation between OT and AM?
    a. OT is equal to AM   b. OT is the perpendicular bisector of AM   c. OT is not perpendicular to AM   d. none of these
15. Name the type of quadrilateral OATM so formed in the figure is if the radius of the circle is 5cm and AT = TM =6 cm.
    a. Parallelogram   b. rhombus   c. kite   d. none of these
16. If radius of the circle is 5 cm and AT = TM = 6 cm, then find the distance between A and M.
    a. 4.8 cm   b. 9.6 cm   c. 7.2 cm   d. 6 cm

CASE STUDY-2

Mathematics teacher of a school took her 9th standard students to show Red Fort. It was apart of their educational trip. She narrated the facts of Red Fort to students. Then the teacher said in this monument one can find combination of solid figures. There are 2 pillars which are cylindrical in shape. Also 2 domes at the corners which are hemispherical. 7 small domes at the centre. Flag hoisting ceremony on Independence Day takes place near the dome.

17. How much cloth material will be required to cover two big domes each of radius 3.5 cm? (pi= 22/7)
    a. 75 sq. m   b. 77 sq. m   c. 154 sq. m   d. 25.8 sq. m
18. Write the formula to find the volume of two cylindrical pillars.
    a. $\pi r^2 h$ b. $2\pi rh$ c. $2\pi r^2 h$ d. $2\pi r(r + h)$
19. Find the lateral surface area of two pillars if height of the pillar is 9m and radius of its base is 2.8 m(pi=22/7)
    a. 112.3 sq. m   b. 108.4 sq. m   c. 316.8 sq. m   d. 123.2 sq. m
20. How much is the volume of hemisphere if radius of the base is 4.5 m? (pi= 3.14)
    a. 381.51 cu. m   b. 95.38 cu. m   c. 85.9 cu. m   d. 190.76 cu. m

DESCRIPTIVE TYPE QUESTIONS:

21. PQRS is such a quadrilateral that P is the centre of the circle passing through Q , R and S. Prove that $\angle RQS + \angle QSR = \frac{1}{2}\angle QPS$
22. Give the equations of 2 lines passing through (3,18). How many more such lines are there?
23. A river 3m deep and 40m wide is flowing at the rate of 2 km per hr. How much water will fall into the sea in a minute?
24. The class marks of a distribution are 12, 18, 24,30. Find the class intervals.
25. The autorickshaw