

Instructions to Students: Read all the questions thoroughly and write down the answers.

This question paper contains a total of 4 parts. They are

- I. There will be 4 questions. Each question carries 4 marks. Answer all the questions.
- II. There will be 6 questions. Each question carries 2 marks. Answer all the questions.
- III. There will be 7 questions. Each question carries 1 mark. Answer all the questions.
- IV. There will be 10 multiple choice questions each question carries  $\frac{1}{2}$  mark. Answer all the questions.

I. Answer all the questions. Each question carries 4 marks 4 x 4 = 16

1. Is it possible to design a rectangular park of perimeter 80 m & area 400 m sq? If yes, find the length and breath
2. How many 3 digit number are divisible by 7
3. If the vertices of a quadrilateral are  $(-4,-2)$ ,  $(-3,-5)$ ,  $(3,-2)$  and  $(2,3)$ , then find its area ?
4. Show that the product of the roots of a quadratic equation is 'c/a'.

II. Answer all the questions. Each question carries 2 marks. 6 x 2 = 12

5. The product of two consecutive positive integers is 306. Form a quadratic equation and find the values of those integers.
6. Does the term " -25" belong to the progression 5, 3, 1, .....?
7. Find the midpoint of the line segment joining the points  $(2,7)$   $(12,-7)$
8. Subba Rao started work in 1995 at an annual salary of Rs 5000 and received an increment of Rs 200 each year. In which year did his income reach Rs 7000?
9. If the sum of the first 14 terms of an AP is 1050 and its first term is 10, find the 15th term.
10. Find the roots of the quadratic equation  $x - \frac{1}{3}x = \frac{1}{6}$

III. Answer all the questions. Each question carries 1 mark. 7 x 1 = 7

11. Find the value of "K" for  $2x^2 - Kx + 3 = 0$ , so that it has two equal roots
12. What is the sum of the first 100 natural numbers?
13. Find the distance between A  $(2,0)$  and B  $(0, 4)$
14.  $a = 7$ ,  $a_{13} = 35$  then find the value of "d" and  $s_{13}$ .
15.  $(x-2)(x+1) = (x-1)(x+3)$  state whether the given equation is a quadratic equation or not?
16. What are the requirements for determining a geometric progression?
17. What is the distance from the Y - axis to  $(4, 0)$ ?

IV. Answer all the questions. Each question carries  $\frac{1}{2}$  mark. 10 x  $\frac{1}{2}$  = 5

18. The sum of 18 numbers of this arithmetic progression 3, 7, 11, 15, 19, ..... is
  - a. 766
  - b. 666
  - c. 718
  - d. 659
19. What is the slope of the line parallel to the X - axis?

- a. 0                      b. 1                      c. -1                      d. None
20. What is the solution for a given equation  $2(x + 3) = 18$  ?
- a. 21                      b. 15.                      c. 11                      d. 6
21. For which positive value of "x" the equation  $4x^2 - 9 = 0$  will be justified?
- a.  $\frac{2}{3}$                       b.  $\frac{-2}{3}$                       c.  $\frac{-3}{2}$                       d.  $\frac{3}{2}$
22.  $1 + 2 + 3 + 4 + \dots + 100 = ?$
- a. 4040                      b. 5151                      c. 5050                      d. 4150
23. Discriminant of the equation  $5x^2 - 3x - 2$  ?
- a. 39                      b. 59                      c. 29                      d. 49
24. What is the foot of the point (-3,-3)?
- a. II                      b. III                      c. IV                      d. I
25. The famous Book of ancient Indian mathematician Aryabhata?
- a. Karana kuthoohalam   b. Siddhantha shiromani   c. Aarya tharkam   d. Aaryabatteyam
26. If  $b^2 - 4ac < 0$  then what is the nature of roots of equation  $ax^2 + bx + c = 0$  ?
- a. Unreal (or) Imaginary   b. Real equal numbers   c. Roots are negligible or null   d. None
27. What is the area of a triangle formed by the points (0, 0), (3, 0), (0, 4) ?
- a. 8 sq.units                      b. 6 sq.units                      c. 9 sq.units                      d. 5 sq.units