

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. $(2.3)^x = (0.23)^y = 1000$ then find the value of $\frac{1}{x} - \frac{1}{y}$
2. $A = \{3, 6, 9, 12, 15, 18, 21\}$; $B = \{4, 8, 12, 16, 20\}$, $C = \{2, 4, 6, 8, 10, 12, 14, 16\}$, $D = \{5, 10, 15, 20\}$ then find (i) $A - B$ (ii) $A - C$ (iii) $A - D$ (iv) $B - A$ (v) $C - A$ (vi) $D - A$?
3. The fourth term of the G.P is $\frac{2}{3}$ and the seventh term is $\frac{16}{8}$, then find the sequence?
4. $x - 3y$ and $4x - 6y = 9$ solve by using graphs?

II. Answer all the questions. Each question carries 2 marks

6 x 2 = 12

5. Which term of the A.P ,3,8,13,18..... is 78?
6. Find the area of a triangle with vertices A(5,2), B(4,7) and C(7,-4) ?
7. Use Euclid's division algorithm to find HCF of 870 and 225 ?
8. $A = \{1, 2, 3, 4, 5\}$, $B = \{4, 5, 6, 7\}$ then find $A - B$ and $B - A$?
9. $p(x) = m^2 - 3m + 1$ then find $p(1)$ and $p(-1)$?
10. The larger of the two complementary angles is 180 degrees greater than the smaller angle. Find those angles?

III. Answer all the questions. Each question carries 1 mark

7 x 1 = 7

11. Expand $\log_{125} \frac{343}{125}$?
12. What is Disjoint set? Give an Example?
13. What is degree of polynomial of $p(x) = 5x^7 - 6x^5 + 7x - 6$?
14. Solve the equation $2(x+3) = 18$?
15. Find the values of "k" if $2x^2 - kx + 3 = 0$ has real roots?
16. What is sum of the first 100 natural numbers?
17. What is the distance between A(4,2), B(8,6)?

IV. Answer all the questions. Each question carries 1/2 mark

10 x 1/2 = 5

18. $\frac{100}{81}$ is a decimal

A. Terminating	B. non-terminating, periodic
C. non-terminating, Non periodic	D. None of the above
19. "A" is a set of factors of "12". Which of below doesn't belong to A?

A. 1	B. 4	C. 5.	D.12
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20. The number of Zeros of a quadratic polynomial have?

A. 1	B. 2.	C. 4	D. 5.
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21. Number of Solutions of equation $x - 4y - 5 = 0$

A. Two	B. Infinite	C. None	D. One
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22. The Roots of $x^2 + 4x + 5 = 0$?

- A. Equal roots B. Distinct roots C. No real roots D. None
23. 10th term in A.P 5,1,-3,-7is
A. 31 B. 41 C.-31 D. -41
24. What is the slope of a line segment joining A(4,-6), B(7, 2)
A. 2/3 B. 4/8 C. 3/8 D. □□□□□□
25. $\log_{10} 1 = \dots$
A. 1 B. 2 C. 0 D. 3
26. Empty Set or Null set is indicated by.....
A. { } B. \prod C. 0 D. None
27. If the Degree of a polynomial is 2 then it is a.....
A. Quadratic polynomial B. Cubic polynomial
C. Linear polynomial D. None

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Pravinnya
Nurturing Talent