

This Question Paper contains 4 printed Pages.

# MODEL PAPER -1

## MATHEMATICS, Paper – II

(English version)

(Parts A and B)

Time : 2 hrs. 45 min.]

[Maximum Marks: 40

**Instructions:**

1. In the time duration of 2 hours 45 minutes, 15 minutes of time is allotted to read and understand the Question paper.
2. Answer **all** the questions under **Part-A** on a separate answer book.
3. Write the answers to the questions under **Part- B** on the Question paper itself and attach it to the answer book of **Part- A**

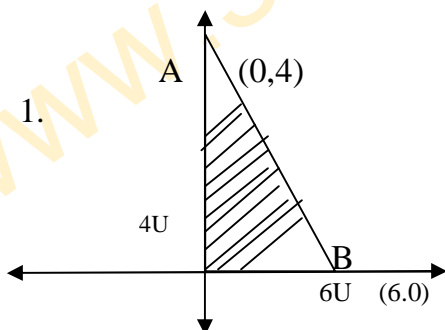
### Part - A

Time : 2 hours

Marks : 35

NOTE : (i) Answer all the questions from the given three sections.  
**I, II, and III of Part - A**

(ii) In section III, every question has internal choice.



From the figure find the area of the  $\triangle AOB$  ?

2. In a geometric progression (G.P) ,  $t_n = (-1)^n 2019$ . find the common ratio?
3. Find the discriminant of the quadratic equation  $2x^2 - 4x + 3 = 0$ ?
4. What value of 'P' the following pair of equation has a unique solution  $2x + Py = -5$  and  $3x + 3y = -6$ ?

P.T.O

5.  $P(x)=x^2-4x+3$  find the value of  $P(0)$ ,  $P(1)$ ,  $P(2)$ ?
6.  $A=\left\{1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}\right\}$  then write in set builder form?
7. Find the value of  $\log_c \sqrt{c}$  ?

## SECTION-II

8. If  $x^2 + y^2=25xy$  then prove that  $2\log(x+y)=3\log 3+\log x+\log y$ .
9. Find the ratio in which the y-axis divides the line segment joining the points (5,-6) and (-1,-4)?
10. Whether the following pair of linear equation are parallel ? Justify you Answer.  

$$X+2y-30=0 \quad 2x+4y-66=0$$
11. Find the 20<sup>th</sup> term from the end of the A.P:3,8,13.....253.
12. Find two numbers whose sum is 27 and product is 182?
13. Find the quadratic polynomial, whose sum and product of the zero -3 and 2 ?

## SECTION –III

14. Prove that  $6+\sqrt{2}$  is an irrational number.

(OR)

Show that point (-4,-7) , (-1,2), (8,5), (5,-4) taken in order are the vertices of a rhombus and also find its area ?

15. If  $A=\{x:x \text{ is an even numbers}\}$   $B=\{x:x \text{ is an odd numbers}\}$   
 $C=\{x:x \text{ is a prime numbers}\}$   $D=\{x:x \text{ is a multiple of } 3\}$

The find 1.AuB 2.AnB 3.C-D 4.AnC

(OR)

How many three digits numbers are divisible by '7'

16. Draw the graph for the following pair of linear equation in two variables and find their solution from the grap

$$3x + 4y = 2 \quad , \quad 6x + 8y = 4$$

(or)

Draw the graph of  $p(x) = x^2 - 4x + 5$  and find zero's ?

17. Solve  $\frac{5}{x-1} + \frac{1}{y-2} = 2$  ,  $\frac{6}{x-1} - \frac{1}{y-2} = 1$

(or)

The altitude of right triangle is 7 cm less than its base if the hypotenuse is 13 cm. find the other two sides.

## PART – B

18. The L.C.M of 'a' and '18' is 36 and H.C.F is 2 then find 'a' value ( )  
 A) 2      B) 3      C) 4      D) 1

19. Find the value of  $2^{2+\log_2 3}$  ( )  
 A) 6      B) 8      C) 10      D) 12

20. If  $A = \{ x/2x+4 = 4 \text{ and } x \in \mathbb{N} \}$  then A is a \_\_\_\_\_ set ( )  
 A) Null set    B) Single ton set    C) Finite set    D) A and C

21. Which is the parallel lines.

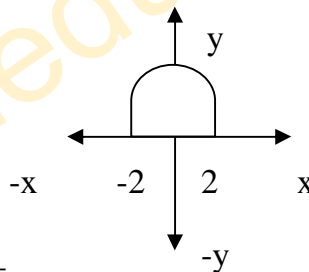
A)  $x-2y+7=0 ; 3x+2y-1=0$

B)  $2x+3y-7=0; 6x+9y-31=0$

C)  $8x-3y+1=0; 3x- 8y+1=0$

D) All the above.

22.  $y=p(x)$  figure are given below the number of zero value ( )  
 A) 4    B) 2    C) 3    D) None



23.  $3x-8y = -18$  then  $y =$  \_\_\_\_\_ ( )  
 A)  $\frac{3x-1}{4}$     B)  $\frac{18+8y}{21}$     C)  $\frac{8-3x}{3}$     D)  $\frac{18+3x}{8}$

24. (7,5) Point is € \_\_\_\_\_ Quadrant ( )  
 A) Q4      B) Q2      C) Q1    D) Q3

25. Mean of 'a' and 'b' is \_\_\_\_\_ ( )  
 A)  $\frac{a-b}{2}$       B)  $\frac{a}{2}$     C)  $\frac{a-b}{12}$       D)  $\frac{a+b}{2}$

26 in the quadratic equation  $x^2+x-2=0$ ,  $a+b+c =$  \_\_\_\_\_ ( )  
 A) 7    B) 0    C) 8    D) 1

27. in the below figure G is the centroid then  $AG:GD=$  \_\_\_\_\_ ( )  
 A) 1:4    B) 2:3    C) 1:1    D) 2:1

