



**IPE MODEL :: MATHS-B (40 Marks)**

**SYLLABUS: Transformation of Axes : Complete, Straight Lines : Upto Ex : 3.1 VSAQ : 10**

**SECTION - A**

- I. VSAQ: Answer ALL of the following questions. 5 x 2 = 10 M**
- Find the point to which the origin is to be shifted so that the point  $(3,0)$  may change to  $(2,-3)$ .
  - Find the point to which the origin has to be shifted to eliminate 'x' and 'y' items in the equation  $4x^2 + 9y^2 - 8x + 36y + 4 = 0$ .
  - Find the value of 'x', if the slope of the line joining the points  $(2,5), (x,3)$  is 2.
  - Find the condition for the points  $(a,0), (h,k), (0,b)$  to be collinear ( where  $ab \neq 0$  )
  - Find the angle to which the axes be rotated to remove the 'xy' item from the equation  $x^2 + 4xy + y^2 - 2x + 2y - 6 = 0$

**SECTION - B**

- II. SAQ: Answer any FOUR of the following questions. 4 x 4 = 16 M**
- Find the transformed equation of  $2x^2 + y^2 - 4x + 4y = 0$  where the origin is shifted to the point  $(-1,2)$ .
  - if the transformed equation of a curve is  $X^2 + Y^2 = 4$  where the axes are translated to the point  $(3,-4)$  then find the original equation of the curve
  - If the coordinates of a point P are transformed to  $(4,-3)$  when the axes are rotated through an angle  $135^\circ$  then find P.
  - If the transformed equation of a curve is  $17X^2 - 16XY + 17Y^2 = 225$  when the axes are rotated through an angle  $45^\circ$  then find the original equation of the curve
  - Find the transformed equation of  $3x^2 + 10xy + 3y^2 = 9$  when the axes are rotated through an angle  $\pi/4$

**SECTION - C**

- III. LAQ: Answer any TWO of the following questions. 2 x 7 = 14 M**
- Find the transformed equation of  $x^2 + 2\sqrt{3}xy - y^2 = 2a^2$  when the axes are rotated through an angle  $\pi/6$ .
  - Show that the angle of rotation of the axes to eliminate 'xy' term in the equation  $ax^2 + 2hxy + by^2 = 0$  is  $\frac{1}{2} \text{Tan}^{-1} \left( \frac{2h}{a-b} \right)$  when  $a \neq b$  and  $\frac{\pi}{4}$  when  $a=b$ .
  - If the transformed equation of a curve is  $X^2 + 3XY - 2Y^2 + 17X - 7Y - 11 = 0$  when the axes are translated to the point  $(2,3)$  then find the original equation of the curve

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**SRIGAYATRI EDUCATIONAL INSTITUTIONS**

INDIA

JR MEC

Time: 1.30 Hours

**IPE MODEL**

Date: 09-08-2020

Max. Marks: 50 M

**IPE MODEL :: COMMERCE (50 Marks)**

***SYLLABUS: Inter-relationship between trade, commerce and industry, book-keeping and Accounting, Double Entry book-keeping system, Meaning and Introduction***

**SECTION - A****I. VSAQ: Answer any FIVE of the following questions.****5 x 2 = 10 M**

1. Capital
2. Purchases
3. Trade debtors
4. Liabilities
5. Drawings
6. Sales
7. Trade Creditors
8. Voucher

**SECTION - B****II. SAQ: Answer any FOUR of the following questions.****4 x 5 = 20 M**

9. State any five advantages of Accounting.
10. Explain the limitations of Accounting.
11. Briefly explain accounting Conventions
12. Explain the steps involved in Accounting process
13. State the objectives of Accounting
14. Explain i) Tangible fixed assets ii) Intangible fixed assets

**SECTION - C****III. LAQ: Answer any TWO of the following questions.****2 x 10 = 20 M**

15. Distinguish between book-keeping and Accounting
16. Explain the inter-relationship between Trade, Commerce and Industry
17. Briefly explain any five concepts of accounting.

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