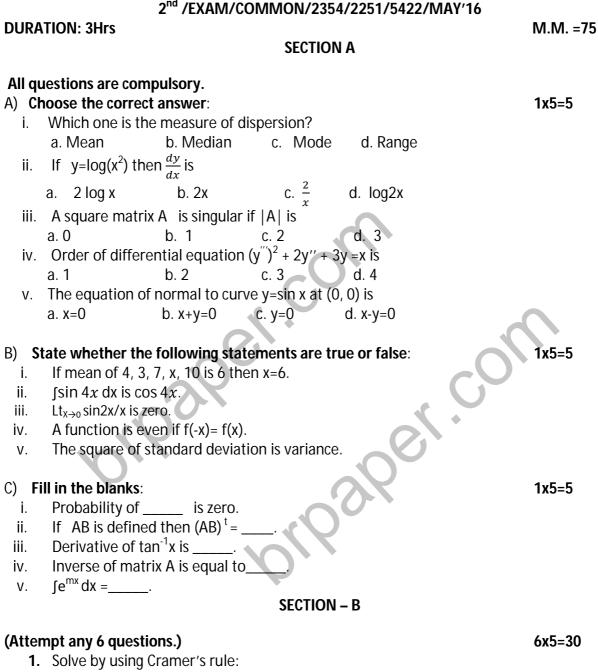
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## APPLIED MATHEMATICS-II 2<sup>nd</sup> /EXAM/COMMON/2354/2251/5422/MAY'16



3x-2y= 5

x- 3y= -3

2. Calculate median from following data:

Class Interval	0-7	7-14	14-21	21-28	28-35	35-42
Frequencies	8	7	14	16	9	6

**3.** Solve  $\sec^2 x \tan y \, dx + \sec^2 y \tan x \, dy = 0$ 

**4.** Find the equation of the normal to the curve 
$$y=6x^2-5x+3$$
 at (1, 4).

5. Integrate 
$$\int \frac{2x}{x^2+2x-3} dx$$

6. If x=5t-t<sup>3</sup>, y=t<sup>2</sup>+4t. Find  $\frac{dy}{dx}$  at t=1.

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- 7. Evaluate  $\lim_{x\to 0} \frac{\sqrt{2+3x}-\sqrt{2-5x}}{4x}$ . 8. Prove that  $\begin{vmatrix} x+a & b & c \\ a & x+b & c \\ a & b & x+c \end{vmatrix} = x^2(x+a+b+c)$ .
- **9.** A card is drawn from a well shuffled pack of playing cards. What is the probability that it is either a spade or an ace?

SECTION -C

## (Attempt any 3 questions.)

- Solve by matrix method: X+2y-3z=6 3x+2y-2z=3 2x-y+z=2
- **2.** If  $y = (\sin^{-1}x)^2$ . Prove that  $(1-x^2)\frac{d^2y}{dx^2} x\frac{dy}{dx}$
- **3.** Evaluate  $\int_{1}^{2} \frac{x^{3}}{\sqrt{x-1}} dx$ .
- 4. Calculate Mean and Standard Deviation.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	5	10	20	40	30	20	10	4

5. Find the maximum and minimum values of function  $f(x) = x^4 + 2x^3 - 3x^2 - 4x + 4$ .

## 10x3=30