



9. If  $f(x) = x^2 + 2x + 3$  then what is the value of  $f(3)$
- a. 11    b. 81  
c. 10    d. 18
10. Write down the value of  $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n$
- a. 1    b.  $e$   
c. 0    d. None

**(PART-B : Descriptive)**

Time : 1 hrs. 10 min.

Marks : 25

[Answer question no.1 & any Two (2) from the rest ]

1. Evaluate the followings  $\lim_{h \rightarrow 0} \frac{\sqrt{x+h} - \sqrt{x}}{h}$  5
  
2. a. Solve the following system of linear equations by using Cramer's Rule 7+3=10  
 $5x - 7y + z = 11$   
 $6x - 8y - z = 15$   
 $3x + 2y - 6z = 7$   
  
b. Find the value of  $\log 25 + \log 36 - 2\log 30 = ?$
  
3. a. If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 5 & 7 \end{bmatrix}$  and  $B = \begin{bmatrix} -3 & 1 & 2 \\ 5 & -3 & -1 \end{bmatrix}$ , find the value of  $A + B$ . 3+7=10  
  
b. Express  $\begin{bmatrix} -3 & 4 & 1 \\ 2 & 3 & 0 \\ 1 & 4 & 5 \end{bmatrix}$  as a sum of a symmetric and skew symmetric matrix.
  
4. a. Find the area of triangle ABC whose vertices are  $A(0,0)$ ,  $B(1,0)$ ,  $C(1,1)$  5+5=10  
  
b. Resolve  $\frac{2x+11}{x^2-7x+10}$  into partial fraction
  
5. a. Find  $\frac{dy}{dx}$  if  $y = \frac{1-\cos x}{1+\cos x}$  5+5=10  
  
b. Find the Integrals value of  $\int \frac{x^2+5x+2}{x+2} dx$