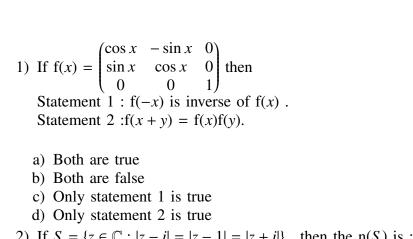
Assignment 1

EE24Btech11036 - Krishna Hanumanth Patil



a) 10

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b) 8

a) 2 b) 3 c) 1 d) 0

3) If
$$a = \lim_{x \to 0} \frac{\left(\sqrt{1 + \sqrt{1 + x^4}}\right) - \sqrt{2}}{x^4}$$
 and $b = \lim_{x \to 0} \frac{\sin^2 x}{\sqrt{2} - \sqrt{1 + \cos x}}$, find ab^3

- a) 36 b) 32 c) 25 d) 30
- 4) Let $\int_0^1 \frac{1}{\sqrt{x+1} + \sqrt{x+3}} dx = a+b\sqrt{2}+c\sqrt{3}$ where a,b,c are rational numbers, then 2a+3b-4c is equal to :

c) 4

d) 7

- 5) The distance of the point (7, -2, 11) from the line $\frac{x-6}{1} = \frac{y-4}{0} = \frac{z-8}{3}$ along the line $\frac{x-5}{2} = \frac{y-4}{-3} = \frac{z-5}{6}$, is
 - a) 14 b) 21 c) 12 d) 18
- 6) The length of chord of thw ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$, whose midpoint is $\left(1, \frac{2}{5}\right)$, is equal to:
- a) $\frac{\sqrt{1691}}{5}$ b) $\frac{\sqrt{2009}}{5}$ c) $\frac{\sqrt{1741}}{5}$ d) $\frac{\sqrt{1541}}{5}$
- 7) Find number of common terms in the two given series; $4, 9, 14, 19, \cdots$ up to 25 terms and $3, 9, 15, 21, \cdots$ up to 37 terms
 - a) 9 b) 8 c) 5 d) 7
- 8) If the shortest distance of the parabola $y^2 = 4x$ from the centre of the circle $x^2 + y^2 4x 16y + 64 = 0$ is d, then d^2 is equal to:

d) 24

9) Let $S = \{1, 2, $ is:	3,, 10} . Suppose M is the s	set of all subsets of S , the	e relation $R = \{(A, B) : A \cap B \neq$	$\phi; A, B \in M$ }
b) symmetricc) symmetricd) reflexive or10) Let x = x(t)	and reflexive only nly and $y = y(t)$ be the solution $a, b \in \mathbb{R}$. Given that $x(0) =$	as of the diffrential equal $(2, y(0) = 1)$ and $(3y(1) = 1)$	ations $\frac{dx}{dt} + ax = 0$ and $\frac{dy}{dt} + by = 2x(1)$, the value of t , for where	= 0 hich
 a) log₃ 4 b) log_{⁴/₃} 2 		c) log ₄ 3 d) log ₂ 2		
$11) If ^{n-1}C_r = \left(k^2\right)$	$-8)^nC_{r+1}$, then the range of	of 'k' is		
a) $\sqrt{2} < k \le 3$ b) $2\sqrt{2} < k < 3$		c) $2 \le k < 3$) d) $2\sqrt{2} < k < 8$		
	t distance between the lines e values of λ is :	$\frac{x-4}{1} = \frac{y+1}{2} = \frac{z}{-3} \text{ and } \frac{x-\lambda}{2}$	$=\frac{y+1}{4} = \frac{z-2}{-5}$, is $\frac{6}{\sqrt{5}}$, then the	sum
a) 10	b) 5	c) 8	d) 7	
	$2\hat{j} + \hat{k}$, $b = 3(\hat{i} - \hat{j} + \hat{k})$. - c) is equal to:	Let c be the vector su	$ach that axc=b and a \cdot c = 3.$	Let
a) 24	b) 36	c) 32	d) 20	
	the sum of all the coeeficients in the expansion	. 12	$(1-3x+10x^2)^n$ and B enotes	the
a) $A = B^3$	b) $A = 3B$	c) $B = A^3$	d) 3A = B	
	line $L: 4x + 5y = 20$. Let origin, then tangent of angle		and L_2 which trisect the line L L_2 is	and
a) $\frac{25}{41}$	b) $\frac{30}{41}$	c) $\frac{2}{5}$	d) $\frac{3}{5}$	

c) 16

a) 36

b) 20