JEE Mains 2026 Session 1

Sri Chaitanya ACADEMY JEE An INFINITY LEARN Initiative

DETAILED LIVE

PAPER SOLUTIONS

28th Jan - Shift 1

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

Let $f(x)$ be a polynomial function such that $f(x^2+1) = x^4 + 5x^2 + 3$, then $\int_0^3 f(x) =$

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Memory Based Questions

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? If unit vectors $\bar{a}, \bar{b}, \bar{c}$ then $|a-b|^2+|b-c|^2+|c-a|^2=9$,$|2a+kb+kc|=3$, then find the positive values of k.

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Memory Based Questions

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If α, β, where $\alpha < \beta$ are the roots of the equation $\lambda x^2 - (\lambda + 3)x + 3 = 0$ and $\frac{1}{\alpha} - \frac{1}{\beta} = \frac{1}{3}$, then the sum of all possible values of λ is

A) 8
B) 4
C) 2
D) 6

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Memory Based Questions

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If $g(x) = 3x^2 + 2x - 3, f(0) = -3, 4g(f(x)) = 3x^2 - 32x + 72$. Then $f(g(2))$ is equal to

A) $-\frac{25}{6}$

B) $\frac{25}{6}$

C) $-\frac{7}{2}$

D) $\frac{7}{2}$

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

Consider the 10 observations 2, 3, 5, 10, 11, 13, 15, 21, a and b such that mean of observation is 9 and variance is 34.2. Then the mean deviation about median is?

A) 3
B) 5
C) 6
D) 7

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

In Carius method of estimation of 'Br', 1.53 g of an organic compound gave 1 g of AgBr. The percentage of Br in organic compound is _____

(Atomic mass of Ag & Br is 108 & 80u respectively)

1) 35.23

2) 43.53

3) 27.81

4) 22.71

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Memory Based Questions

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? In period 4 of the periodic table which elements have the highest and lowest atomic radii respectively

1) K and Br
2) Na and Cl
3) K and Se
4) Rb and Br

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Memory Based Questions

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Consider the following nickel complexes:

$A = [Ni(CN)4]^{2-}$

$B = [Ni(CO)4]$

$C = [NiCl4]^{2-}$

Which of the following options correctly describes the magnetic behaviour (paramagnetic/diamagnetic) of these complexes?

1) A, B are diamagnetic; C is paramagnetic
2) A, B are paramagnetic; C is diamagnetic
3) A, C are diamagnetic; B is paramagnetic
4) A, C are paramagnetic; B is diamagnetic

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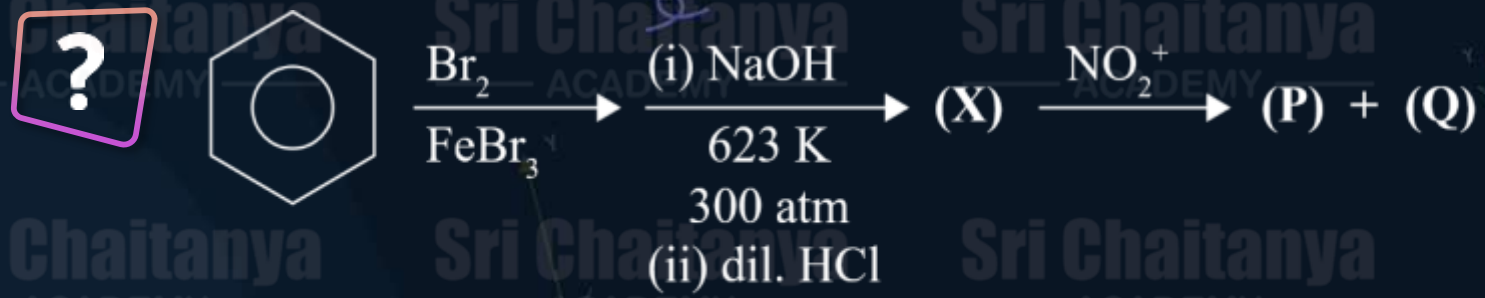
Memory Based Questions



'P' and 'Q' can be separated by

1) Simple distillation
2) Fractional distillation
3) Steam distillation
4) Sublimation

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Memory Based Questions

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Consider Following ions

I. $CH_3 - CH_2^-$

II. $CH_2 = CH^-$

III. $HC \equiv C^-$

Stability of ions is in the order

1) III > II > I

2) II > III > I

3) I > II > III

4) I > III > II

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Memory Based Questions

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Lens of focal length f = 18cm has refractive index 3/2. It is immersed in water of refractive index 4/3. Change in focal length is α x f, value of α is____

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Memory Based Questions

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A body of mass 5kg is placed on a rough inclined plane of angle 30 degrees and coefficient of friction √3/2. Find the force required to push the body down at constant velocity.

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Memory Based Questions

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There are three long parallel wires in a plane as shown. Find force on 15 cm of length of middle wire.

a. 5μ N

b. 7μ N

c. 6μ N

d. μN

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Memory Based Questions

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Solid sphere with radius 10 cm rotating about axis which is at 15 cm from COM of sphere - Radius of gyration is $\sqrt{n}$ cm. The value of n = ?

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Memory Based Questions

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Equation of an EMW in a medium is given by $E = 2\sin(2 \times 10^{15}t - 10^{7}x)$. Find refractive index of the medium.

a. 3/2

b. 2

c. 5/3

d. 4/3

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Memory Based Questions

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? For a circular coil of radius R, magnetic field at the center of circular coil is $B_0 = 16\mu$ T. What will be the magnetic field on axis at a distance $x = \sqrt{3}R$ from center?

a. $\frac{1}{4}\mu$ T

b. $\frac{1}{2}\mu$ T

c. $4\mu T$

d. 2μ T

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

? Let $\tan(\pi/4 + 1/2\cos^{-1}2/3) + \tan^{-1}(1/2\sin^{-1}2/3) = k$. Then number of solutions of the equation $\sin^{-1}(kx - 1) = \sin^{-1}x - \cos^{-1}x$ is

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

The value of $\sum_{k=1}^{\infty}(-1)^{k+1}\left(\frac{k(k+1)}{k!}\right)$ is

A) $e/2$
B) $2/e$
C) $\sqrt{e}$
D) $1/e$

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Memory Based Questions

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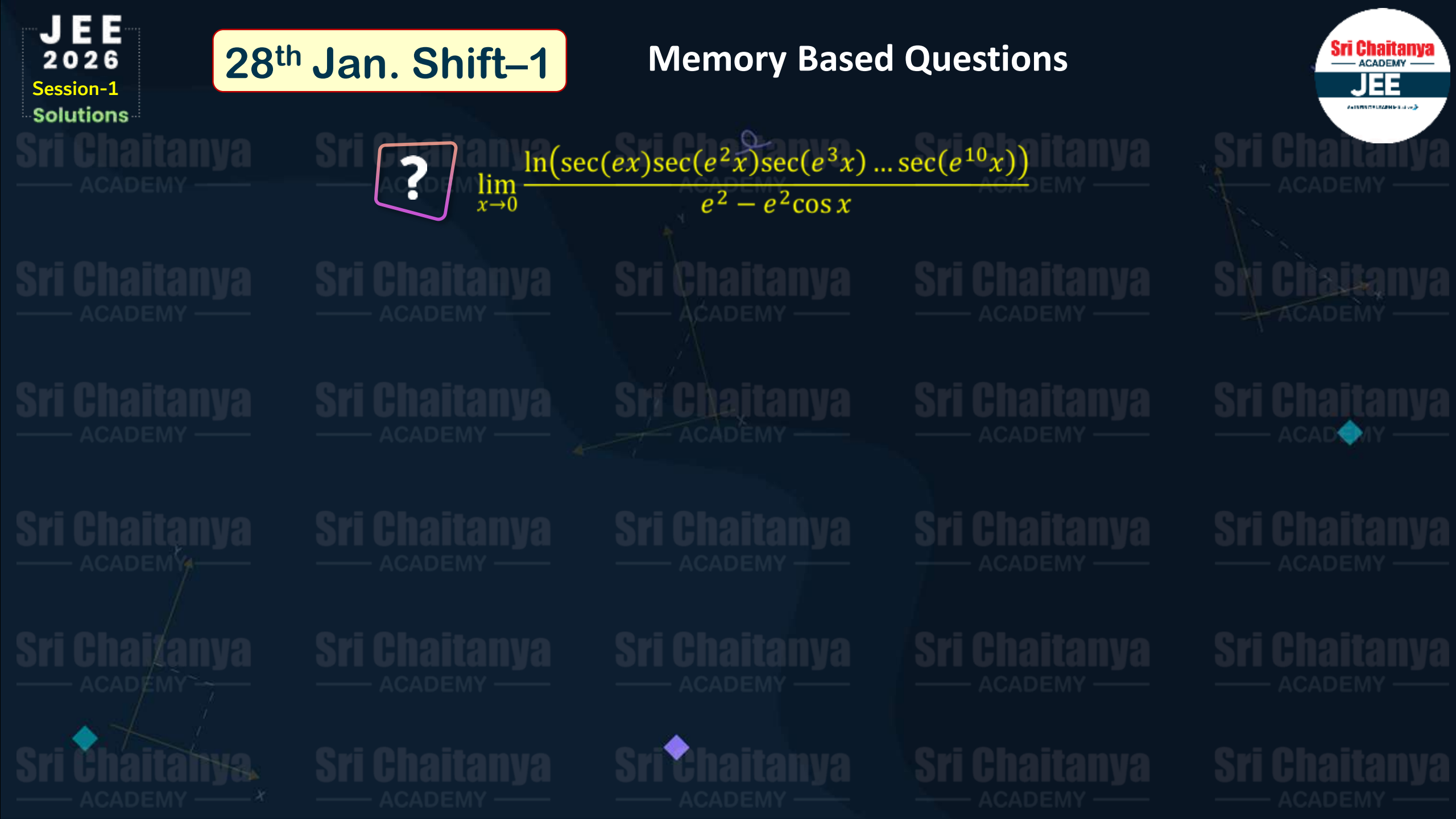
?

$$\lim_{x\to 0}\frac{\ln\left(\sec(ex)\sec(e^2x)\sec(e^3x)\ldots\sec(e^{10}x)\right)}{e^2-e^2\cos x}$$



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Memory Based Questions

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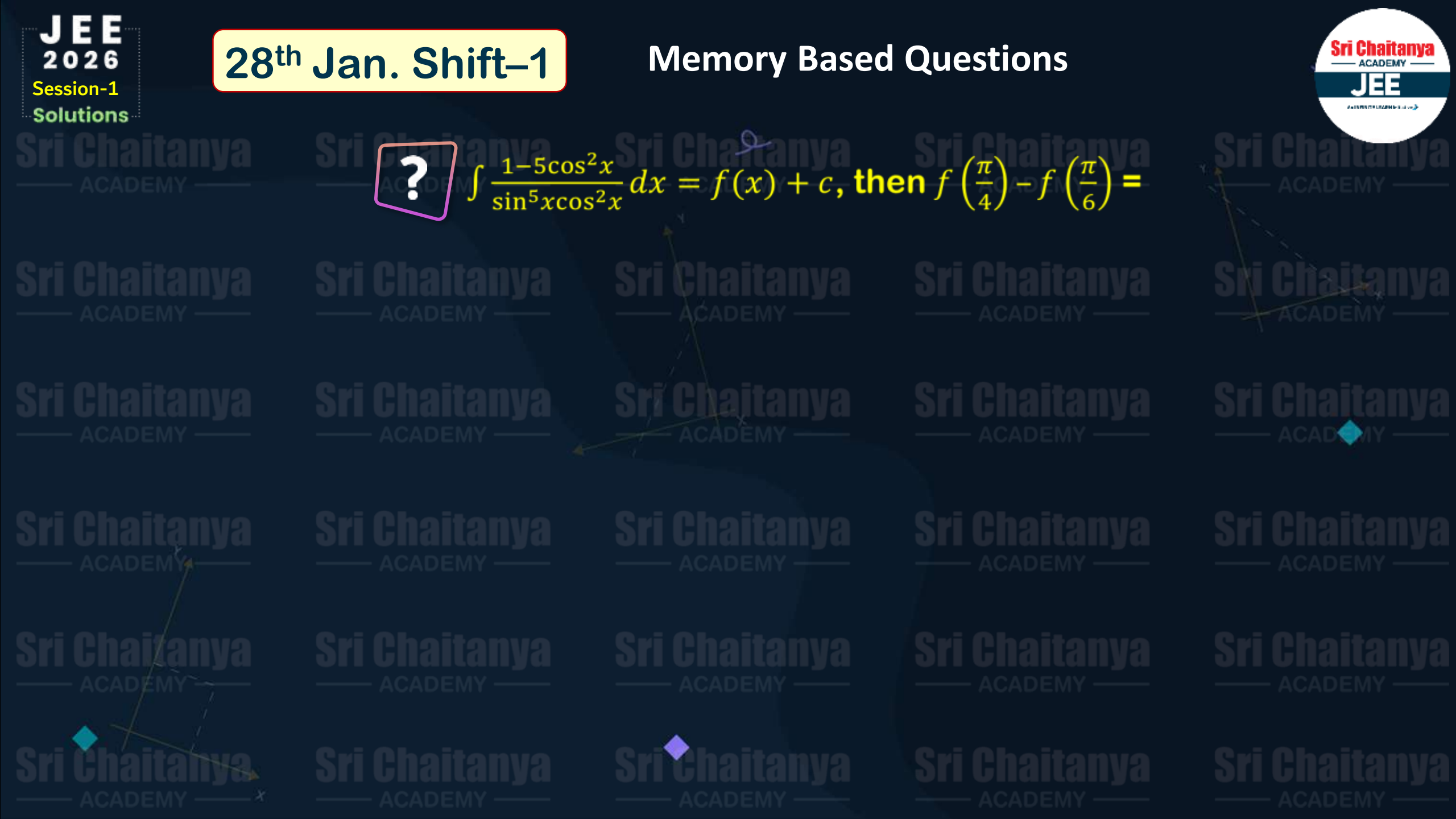
? $\int \frac{1-5\cos^2 x}{\sin^5 x \cos^2 x}\,dx = f(x) + c$, then $f\left(\frac{\pi}{4}\right) - f\left(\frac{\pi}{6}\right) =$



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Memory Based Questions

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Let $S = \{1,2,3,4,5,6,7,8,9\}$. Let x be the number of 9-digit number formed using the digits of the set S such that, only one digit is repeated and it is repeated exactly twice. Let 'y' be the number of 9-digit number formed using the digits of the set S such that, only two digits are repeated and each of these is repeated exactly twice. Then,

A) $56x = 9y$
B) $9x = 2y$
C) $21x = 4y$
D) $45x = 7y$

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Memory Based Questions

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Let $S = \{x^3 + ax^2 + bx + c; a, b, c \in N \ \& \ a, b, c \leq 20\}$ be a set of polynomials. Then the number of polynomials in S, which are divisible by $x^2 + 2$, is

A) 20
B) 10
C) 6
D) 120

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

? Let $\tan(\pi/4 + 1/2\cos^{-1}2/3) + \tan^{-1}(1/2\sin^{-1}2/3) = k$. Then number of solutions of the equation $\sin^{-1}(kx - 1) = \sin^{-1}x - \cos^{-1}x$ is

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Memory Based Questions

Sri Chaitanya ACADEMY JEE

? The value of $\sum_{k=1}^{\infty}(-1)^{k+1}\left(\frac{k(k+1)}{k!}\right)$ is

A) $e/2$
B) $2/e$
C) $\sqrt{e}$
D) $1/e$

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Memory Based Questions

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? The area of region $R = \{(x, y): xy \leq 8, 1 \leq y < x^2, x < 0\}$ is

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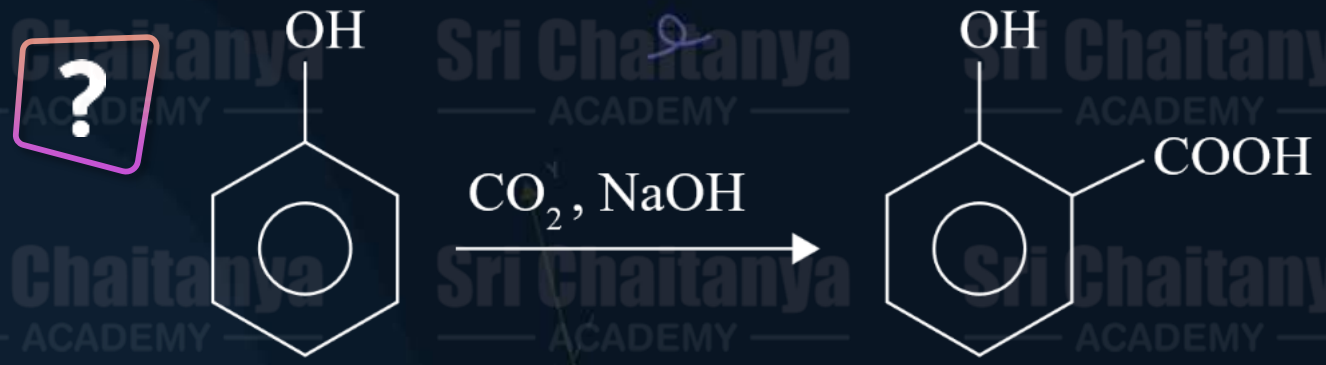
Memory Based Questions



Which of the following statements is incorrect?

Options:

1) P is more acidic than Q
2) Q is more acidic than P
3) Q is soluble in $NaHCO_3$
4) P and Q both are soluble in NaOH

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Memory Based Questions

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An organic compound is given. It undergoes 1st order decomposition. It decomposes to $1/8$ and $1/10$ in time $t(1/8)$ and $t(1/10)$ respectively. Find out $\frac{t_{1/8}}{t_{1/10}} \times 10 =$ _____.

(Take $\log 8 = 0.90, \log 7 = 0.84, \log 9 = 0.95$)

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Given below are two statements.

Statement I : Given the molecules XeF_4, SiF_4, SeF_4 and BF_4^-, all the compounds have two different E – F bond lengths, where E is the central atom.

Statement II : Among the species O_2^+, O_2, O_2^- and F_2, the species O_2^- has the highest bond order.

In the light of the above statements, which is the correct option.

a) Both statement-I and statement-II are correct

b) Both statement-I and statement-II are incorrect

c) Statement-I is correct and statement-II is incorrect

d) Statement-I is incorrect and statement-II is correct

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Memory Based Questions

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? For equivalence point X ml of 0.02 M HCl is treated with 5 mL of 0.02 M of a weak base. The pK_b of weak base is 5.69 and the pH of the resulting solution is Y at half of the equivalence point. The value of $(x + y)$ is:

1) 15

2) 8.81

3) 13.31

4) 3.81

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Memory Based Questions

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Choose the correct statements in respect of hydrides of Group-15.

A. Reducing power increasing down the group.

B. Basic nature increases down the group.

C. Stability decreases down the group.

D. Boiling point decreases regularly down the group.

1) A, B and C only

2) A, B and D only

3) A and C only

4) B, C and D only

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Memory Based Questions

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? The wave number of three spectral lines of H -atom are given. Identify the correct set of spectral lines belonging to Balmer series

1) $\frac{5R}{36}, \frac{3R}{16}, \frac{21R}{100}$

2) $\frac{3R}{4}, \frac{3R}{16}, \frac{7R}{144}$

3) $\frac{7R}{144}, \frac{3R}{16}, \frac{16R}{255}$

4) $\frac{5R}{36}, \frac{3R}{16}, \frac{21R}{24}$