PAPER SOLUTION

From Meerut

JEE MAIN 2026

JAN	SHIFT
28	2nd

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JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. The Sum Of Coefficients of x^{499} and x^{500} in the binomial expansion of $(1+x)^{1000} + x(1+x)^{999} + x^2(1+x)^{998} + \ldots + x^{1000}$ is

A. $^{1002}C_{501}$

B. $^{1002}C_{500}$

C. $^{1001}C_{500}$

D. $^{1001}C_{501}$

(Ans : B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. If $\sum_{r=1}^{25} \frac{r}{r^4+r^2+1} = \frac{p}{q}$, where p and q are coprime positive integers, then p +q is equal to

A 84

B 976

C 984

D 890

(Ans : B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. $\frac{6}{3^{26}}+\frac{10}{3^{25}}+\frac{10.2}{3^{24}}+\frac{10.2^2}{3^{23}}+\cdots+\frac{10.2^{24}}{3}$ is equal to

(A) 2^{26}

(B) 2^{25}

(C) 3^{26}

(D) 3^{25}

(Ans : A)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. By the principal of inverse trigonometric function, the value of tan $\left(2\,sin^{-1}\left(\frac{2}{\sqrt{13}}\right) - 2cos^{-1}\left(\frac{3}{\sqrt{10}}\right)\right)$ is

A 33/56

B 31/55

C 32/59

D 3855

(Ans : A)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. The value of $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \frac{12(3+[x])}{3+[\sin x]+[\cos x]}\,dx$ is equal to

A $3+10\pi$

B $11\pi+4$

C $10\pi+2$

D $11\pi+2$

(Ans : D)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Let a triangle ABC such that $A = (0, 0)$ and vertices B and C lie on the parabola $y^2 = 8x$ such that $\left(\frac{7}{3}, \frac{4}{3}\right)$ is the centroid of the ΔABC then $(BC)^2$ is equal to

A 90

B 120

C 150

D 110

(Ans : B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Let $A = \begin{bmatrix} 3 & -4 \\ 1 & -1 \end{bmatrix}$ and B be a 2×2 matrix such that $A^{100} = 100B + I$, then of all elements of B^{100} is

(Ans : 0)

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#Q. Let $A = \{ Z \in C : |Z - 2| \leq 4\}$ and $B = \{Z \in C : |Z - 2| + |Z - 2| \leq 4\}$ then $\max \{Z_1 - Z_2\} : Z_1 \in A$ and $Z_2 \in B\}$ is equal to

(A) 6

(B) 8

(C) 4

(D) 5

(Ans : B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. The range of $f(x) = sgn(sinx) + sgn(cosx) + sgn(tan)x + sgn(cotx), x \neq \frac{n\pi}{2}$,

$n \in I$, where $sgn(t) = \begin{cases} 1, & t > 0 \\ -1 & t < 0 \\ 0, & t = 0 \end{cases}$

A {4, -4, 2, -2}

B {-2, 0, 4}

C {4, -4, 0, -2}

D {2, -2, 0, 4, -4}

(Ans : B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Statement I: $25^{13} + 20^{13} + 8^{13} + 3^{13}$ is divisible by 7.

Statement II: The integral value of $\left(7 + 4\sqrt{3}\right)^{25}$ is an odd number

A. Neither statements are correct

B. Only statement I is correct

C. Only statement II is correct

D. Both the statements are correct

(Ans : D)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. If the arithmetic mean of $\frac{1}{a}$ and $\frac{1}{b}$ is $\frac{5}{16}$ and a, 4, α, b are in increasing A.P. then both the roots of the equation $\alpha x^2 - ax + 2(\alpha - 2b)$=0 lie between

A (-3, 0)

B (-2, 3)

C (0,3)

D (-3,1)

(Ans : B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Let $y = y(x)$ be the solution of the differential equation $x\frac{dy}{dx} - y = x^2\cot x, x \in (0, \pi)$. If $y\left(\frac{\pi}{2}\right) = \frac{\pi}{2}$ then $6y\left(\frac{\pi}{6}\right) - 8y\left(\frac{\pi}{4}\right)$ is

A 2π

B -3π

C $-\pi$

D π

(Ans : C)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Statement I: The function F defined from $R \to RF(x) = \frac{x}{1+|x|}$ is one-one

Statement II: The function F defined from $R \to RF(x) = \frac{x^2+4x-30}{x^2-8x+18}$ is many one

A. Statement I is correct but statement II is not correct

B. Statement I and statement II both are correct

C. Statement I is incorrect but statement II is correct

D. Both statement are incorrect

(Ans : B)

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#Q. Let $f(x) = \lim_{\theta \to 0} \frac{\cos \pi x - (x^{2/\theta}) \sin(x-1)}{1 + (x^{2/\theta}) \sin(x-1)}, x \in R$. Then which of the following is correct.

A f is continuous at x = 1 and $f(1) = -1$

B f is discontinuous at $x = -1$ and $f(1) = -1$

C f is continuous at x = 1 and $f(1) = 1$

D f is discontinuous at x = 1 and $f(1) = 1$

(Ans : A)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Ellipse $\frac{x^2}{144}+\frac{y^2}{169}=1$ and hyperbola $\frac{x^2}{16}-\frac{y^2}{\lambda^2}=-1$ have same focus and e and L denotes the eccentricity and length f latus rectum of hyperbola then $24(e+L)$ is

(Ans : 296)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. An ellipse has centre at $(1,-2)$ and one of the focus at $(3,-2)$ and one vertex at $(5,-2)$, then the length of its latus rectum is

(Ans : 6)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Let Q be the image of the point $P(3, 2, 1)$ in the line $\frac{x-1}{1} = \frac{y}{2} = \frac{z-1}{1}$, then the distance of Q from the line $\frac{x-9}{3} = \frac{y-9}{2} = \frac{z-5}{-2}$ is

A 3

B 4

C 5

D 7

(Ans : D)