JEE Main (Phase-II) 2020

Memory Based Questions & Solutions

SUBJECT

MATHEMATICS

Date: 04 September, 2020 (Shift-1)

Time: 9 AM to 12 PM

1. In a group 63% people read news paper A while 76% people read news paper B. If x% people read both A and B then x may be

(1) 37% (2) 68% (3) 29% (4) 55%

Ans. (4)

Sol. $n(A)=63\%$

$n(B)=76\%$

$n(A\cap B)=x\%$

Let $n(A\cup B)=100$

$n(A)=63, n(B)=76, n(A\cap B)=x$

$n(A\cup B)=n(A)+n(B)-n(A\cap B)\le 100$

$63+76-x\le 100$

$x\ge 39$

but $n(A\cap B)\le n(A)$ $\therefore$ $39\le x\le 63$

2. If $\int \frac{\sqrt{x}}{(1+x)^2}dx$, then find the value of f(3) –f(1)

(1) $\frac{\pi}{12}+\frac{1}{2}+\frac{\sqrt{3}}{4}$ (2) $\frac{\pi}{12}+\frac{1}{2}-\frac{\sqrt{3}}{4}$ (3) $\frac{\pi}{12}+\frac{1}{3}-\frac{\sqrt{3}}{4}$ (4) $\frac{\pi}{12}+\frac{1}{4}-\frac{\sqrt{3}}{4}$

Ans. (2)

Sol. $f(x)=\int \frac{\sqrt{x}}{(1+x)^2}dx$

Let $x=\tan^2\theta$

$dx=2\tan\theta\sec^2\theta d\theta$

$f(x)=\int \frac{\tan\theta}{(1+\tan^2\theta)^2}.2\tan\theta\sec^2\theta d\theta$

$f(x)=\int \frac{\tan\theta}{\sec^4\theta}.2\tan\theta\sec^2\theta d\theta$

$f(x)=\int 2\tan^2\theta.\cos^2\theta d\theta$

$f(x)=\int 2\sin^2\theta d\theta$

$f(x)=\int (1-\cos 2\theta)d\theta$

$f(x)=\theta-\frac{\sin 2\theta}{2}+C=\theta-\frac{\tan\theta}{1+\tan^2\theta}+C$

$f(x)=\tan^{-1}\sqrt{x}-\frac{\sqrt{x}}{1+x}+C$

now $f(3)-f(1)=\tan^{-1}\sqrt{3}-\frac{\sqrt{3}}{1+3}-\tan^{-1}\sqrt{1}+\frac{1}{1+1}$

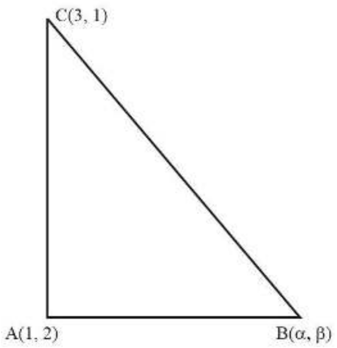
$=\frac{\pi}{3}-\frac{\pi}{4}+\frac{1}{2}-\frac{\sqrt{3}}{4}=\frac{\pi}{4}+\frac{1}{2}-\frac{\sqrt{3}}{4}$

3. Let ΔABC is a right angled triangle right angled at A such that A(1, 2), C(3, 1) and area of $\Delta ABC =$ $= 5\sqrt{5}$ then abscissa of B can be

(1) $1+5\sqrt{2}$ (2) $1+2\sqrt{5}$ (3) $1-5\sqrt{2}$ (4) $3+2\sqrt{5}$

Ans. (2)

Sol.



$$m_{AB} = \frac{B-2}{\alpha-1}$$

$$m_{AC} = \frac{2-1}{1-3} = -\frac{1}{2}$$

$$AB \perp AC \quad \therefore \quad \frac{\beta-2}{\alpha-1}\left(-\frac{1}{2}\right) = -1$$

$$\beta = 2\alpha - 2 + 2 \quad \Rightarrow \quad \beta = 2\alpha$$

Now area of $\Delta ABC = 5\sqrt{5} = \frac{1}{2} AB.AC$

$$\Rightarrow \quad \frac{1}{2}\sqrt{(3-1)^2+(1-2)^2}.\sqrt{(\alpha-1)^2+(\beta-2)^2} = 5\sqrt{5}$$

$$\Rightarrow \quad \sqrt{(\alpha-1)^2+(2\alpha-2)^2} = 10$$

$$\Rightarrow \quad \sqrt{(\alpha-1)^2}\sqrt{5} = 5 \quad \Rightarrow \quad |\alpha-1| = 2\sqrt{5} \quad \Rightarrow \quad \alpha = 1 \pm 2\sqrt{5}$$

4. Let $f(x) = |x-2|$ and $g(x) = f(f(x)), x \in [0,4]$, then $\int_0^3 (g(x)-f(x))dx =$

(a) 1 (b) 2 (3) 3 (4) 4

Ans. (1)

Sol. $f(x) = |x-2| = \begin{cases} 2-x & x<2 \\ x-2 & x \geq 2 \end{cases}$

$$g(x) = f(f(x)) = \begin{cases} 2-f(x) & f(x)<2 \\ f(x)-2 & f(x) \geq 2 \end{cases}$$

$$= \begin{cases} 2-(2-x) & 2-x<2, \quad x<2 \\ (2-x)-2) & 2-x \geq 2, \quad x<2 \\ 2-(x-2) & x-2<2, \quad x \geq 2 \\ (x-2)-2 & x-2 \geq 2, \quad x \geq 2 \end{cases}$$

$$= \begin{cases} x & 0 < x < 2 \\ -x & x \le 0 \\ 4-x & 2 < x < 4 \\ x-4 & x \ge 4 \end{cases}$$

$$\int_0^3 (g)(x) - f(x))dx = \int_0^2 x dx + \int_2^3 (4-x)dx - \int_0^3 |x-2|\,dx = 1$$

5. $\sum_{r=0}^{20} {}^{50-r}C_6 =$

(1) ${}^{54}C_7 - {}^{30}C_6$ (2) ${}^{51}C_6 - {}^{30}C_6$ (3) ${}^{51}C_7 - {}^{30}C_6$ (4) ${}^{51}C_7 - {}^{30}C_7$

Ans. (3)

Sol. $\sum_{r=0}^{20} {}^{50-r}C_6 =$

${}^{50}C_6 + {}^{49}C_6 + {}^{48}C_6 + {}^{47}C_6 + ... + {}^{30}C_6$

$= {}^{50}C_6 + {}^{49}C_6 + {}^{48}C_6 + {}^{47}C_6 + ... + {}^{30}C_6 + {}^{30}C_7 - {}^{30}C_7$

$= {}^{51}C_7 - {}^{30}C_7$

6. Let $x\frac{dy}{dx} - y = x^2$ $(x\cos x + \sin x)$ is a differential equation. If $(\pi) = \pi$ then $f''\left(\frac{\pi}{2}\right) + f\left(\frac{\pi}{2}\right) =$

(1) $\frac{\pi}{2} + 2$ (2) $\frac{\pi}{2} - 2$ (3) $\frac{\pi}{2} + 1$ (4) $\frac{\pi}{2} - 1$

Ans. (1)

Sol. Given $x\frac{dy}{dx} - y = x^2(x\cos x + \sin)$

$\Rightarrow \frac{dy}{dx} - \frac{1}{x}y = x(x\cos x + \sin x)$ $\therefore$ I.F. $= e^{\int -\frac{1}{x}dx} = e^{-\ell nx} = \frac{1}{x}$

$\therefore$ solution is $y.\frac{1}{x} = \int \frac{1}{x}.x(x\cos x + \sin x)dx + C$

$\frac{y}{x} = \int (x\cos x + \sin x)dx + C$ $\Rightarrow C = 1$

$y = x^2 \sin x + x$

$\frac{dy}{dx} = x^2\cos x + 2x\sin x + 1$

$\frac{d^2y}{dx^2} = -x^2\sin x + 2x\cos x + 2x\cos x + 2\sin x$ $= -x^2\sin x + 4x\cos x + 2\sin x$

$\therefore$ $f''\left(\frac{\pi}{2}\right) + f\left(\frac{\pi}{2}\right) = \left(-\frac{\pi^2}{4} + 4.0 + 2\right) + \left(\frac{\pi^2}{4}.1 + \frac{\pi}{2}\right)$

$\therefore$ $\frac{\pi^2}{4} + 2 + \frac{\pi^2}{4} + \frac{\pi}{2}$ $= \frac{\pi}{2} + 2$

7. Let $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ be an ellipse such that LR = 10 and its eccentricity is equal to maximum value of quadratic expression $f(t)=\frac{5}{12}+t-t^2$ then $(a^2+b^2)=$

Ans. 126

Sol. $LR=\frac{2b^2}{a}=10 \Rightarrow b^2=5a$

$f(t)=\frac{5}{12}-(t^2-t+\frac{1}{4}-\frac{1}{4})=\frac{5}{12}+\frac{1}{4}-\left(t-\frac{1}{2}\right)^2$

$=\frac{2}{3}-\left(t-\frac{1}{2}\right)^2$

maxi $f(t)=\frac{2}{3}=e$

$b^2=a^2(1-e^2)$

$5a=a^2\left(1-\frac{4}{9}\right) \Rightarrow 5=\frac{5}{9}a \Rightarrow a^2=81, b^2=45$

$a^2+b^2=126$

8. If α, β are roots of $x^2-3x+p=0$ and γ, δ are roots of $x^2-6x+q=0$ and α, β γ, δ are in increasing geometric progression then value of $\frac{2q+p}{2q-p}$ is equal to

(1) $\frac{7}{9}$ (2) $-\frac{7}{9}$ (3) $\frac{9}{7}$ (4) $-\frac{9}{7}$

Ans. (3)

Sol. $\alpha=a, \beta=ar, \gamma=ar^2, \delta=ar^3$

$\alpha=\beta=3 \Rightarrow a+ar=3$ ....(1)

$\gamma+\delta=6 \Rightarrow ar^2+ar^3=6$ ....(2)

By (1) and (2) $\Rightarrow \frac{ar^2(1+r)}{a(1+r)}=\frac{6}{3} \Rightarrow r^2=2$

$\Rightarrow r=\sqrt{2}$

$\therefore \frac{2q+p}{2q-p}=\frac{9}{7}$

9. The mean and variance of 5, 7, 12, 10, 15, 14, a, b are 10 and 13.5 respectively then value of |a –b|=

(1) 5 (2) 6 (3) 7 (4) 8

Ans. (3)

Sol. $\frac{5+7+12+10+15+14+a+b}{8}=10$

$\Rightarrow 63+a+b=80 \Rightarrow a+b=17$ ....(1)

$$\sigma^2 = \frac{\sum x_i^2}{n} - \left(\frac{\sum x_i}{n}\right)^2$$

$$\Rightarrow 13.5 = \frac{25+49+144+100+225+196+1^2+b^2}{8} - 100$$

$908 = a^2 + b^2 + 739$

$a^2 + b^2 = 169$

$(a + b)^2 - 2ab = 169$

$289 - 169 = 2ab \Rightarrow ab = 60$

$\therefore |a - b|^2 = (a + b)^2 - 4ab = 289 - 240 = 49$

$\therefore |a - b| = 7$

10. If $1 + (1 - 2^2 . 1) + (1 - 4^2 . 3) + (1 - 6^2 . 5) + ...+ (1 - 20^2 . 19) = \alpha - 220\beta$ then (α, β)=

(1) (11, 97) (2) (11, 103) (3) (10, 97) (4) (10, 103)

Ans. (2)

Sol. $$S = 1 + \sum_{r=1}^{10} 1 - (2r)^2(2r-1) = 1 + 10 - \sum_{r=1}^{10}(8r^3 - 4r^2) = 11 - \left[8\left(\frac{10\times 11}{2}\right)^2 - 4.\left(\frac{10\times 11\times 21}{6}\right)\right]$$

$= 11 - [2(110)^2 - 140 \times 11]$

$= 11 - 22(1100 - 70)$

$= 11 - 220 (110 - 7)$

$\therefore \alpha - 220\beta$

$= 11 - 220 (103)$

$\therefore \alpha = 11, \beta = 103$

$(\alpha, \beta) = 11, 103)$

11. For equation $[x]^2 + 2[x + 2] - 7 = 0, x \in R$ number of solution of equation is/are

(1) four integer solution (2) infinite solution (3) No solution (4) two solution

Ans. (2)

Sol. $[x]^2 + 2[x+2] - 7 = 0$

$[x]^2 + 2([x]+2) - 7 = 0$

Let $[x] = t$

$t^2 + 2t - 3 = 0$

$t = 1, -3$

$[x] = -3, 1$

$x \in [-3, -2)] \cup [1, 2]$

Hence inf inite solution

12. Integration: $\int \frac{x^2 dx}{(x\sin x + \cos x)^2}$ is equal to

(1) $\frac{\sin x + x\cos x}{x\sin x + \cos x} + C$ (2) $\frac{\sin x + x\cos x}{x\sin x - \cos x} + C$ (3) $\frac{x\cos - \sin x}{\cos x - x\sin x} + C$ (4) $\frac{\sin x - x\cos x}{x\sin x + \cos x} + C$

Ans. (4)

Sol. $$\int \frac{x^2 \quad dx}{(x\sin x + \cos x)^2} = \int \frac{x}{cox}.\frac{xcox}{(x\sin x + \cos x)^2} \quad dx$$

$$=\frac{x}{\cos x}\int\frac{x\cos x}{(x\sin x+\cos x)^2}dx-\int\left[\frac{d}{dx}(x\sec x)\int\frac{x\cos x}{(x\sin x+\cos x)^2}dx\right]dx$$

$$=\frac{x}{\cos x}\left(-\frac{1}{x\sin x+\cos x}\right)+\int\sec^2 x\quad dx$$

$$\left(\therefore\int\frac{x\cos x}{(x\sin x+\cos x)^2}dx=\frac{-1}{x\sin x+\cos x}\quad\text{and}\right.$$

$$\frac{d}{dx}(x\sec x)=\sec x+\sec x\tan x=\sec x\left(1+\frac{x\sin x}{\cos x}\right)=\sec^2 x(x\sin x+\cos x\Big)$$

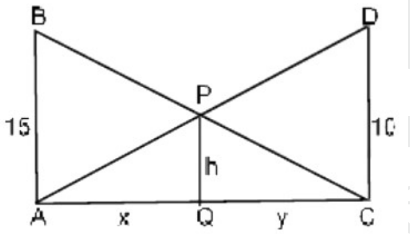
$$=\frac{-x}{\cos x(x\sin x+\cos x)}+\frac{\sin x}{\cos x}+c$$

$$=\frac{-x+x\sin^2 x+\sin x\cos x}{\cos x(x\sin x+\cos x)}=\frac{\sin x-x\cos x}{x\sin x+\cos x}+c$$

13. Two poles AB and CD of height 15 m and 10 m respectively. A and C are on level ground. Point of intersection of AD and BC is P then height of P is

Ans. 6

Sol.



$$\Delta AQP \sim \Delta ACD \quad\Rightarrow\quad \frac{x}{h}=\frac{x+y}{10}\quad ......(1)$$

$$\therefore\quad \Delta CQP \sim \Delta CAB \quad\Rightarrow\quad \frac{y}{h}=\frac{x+y}{15}\quad .....(2)$$

$$(1)+(2)\rightarrow\frac{x+y}{h}=(x+y)\left(\frac{1}{10}+\frac{1}{15}\right)\Rightarrow\quad h=6$$

14. Consider two statements

S_1: $\sim p\rightarrow(\sim q\leftrightarrow\sim p)$ is a tautology

S_2: $(\sim q\wedge p)\rightarrow q$ is a fallacy then

(1) Statement I is true, statement II is false
(2) Statement I is false, statement II is true
(3) Both true
(4) Both false

Ans. (4)

Sol. $I:\sim p\rightarrow(\sim q\leftrightarrow\sim p)$

p	q	~p	~q	$\sim q\leftrightarrow\sim p$	(I) $\sim p\rightarrow(\sim q\leftrightarrow\sim p)$	$p\wedge\sim q$	(II) $(\sim q\wedge p)\rightarrow q$
T	T	F	F	T	T	F	T
T	F	F	T	F	T	T	F
F	T	T	F	F	F	F	T
F	F	T	T	T	T	F	T

both are false

15. If $u = \frac{2z+i}{z-ki}$ where z = x + iy and k > 0 curve Re (u) + Im(u) =1 cuts y-axis at two point P and Q such that PQ = 5 then value of k is

(1) 1 (2) 2 (3) 3 (4) 4

Ans. (2)

Sol. $u = \frac{2(x+iy)+i}{(x+iy)-ki} = \frac{2x+(2y+1)i}{x+(y-k)i} \times \frac{x-(y-k)i}{x-(y-k)i}$

Real part of u = Re (u) = $\frac{2x^2+(2y+1)(y-k)}{x^2+(y-k)^2}$

Imaginary part of u = Im(u) = $\frac{x(2y+1)-2x(y-k)}{x^2+(y-k)^2}$

Now Re(u) + Im(u) = 1

$= \frac{2x^2+(2y+1)(y-k)+x(2y+1-2x(y-k)}{x^2+(y-k)^2} = 1$

for y-axis put x=0 $\Rightarrow \frac{(2y+1)(y-k)}{(y-k)^2} = 1$

$\Rightarrow (2y + 1) (y - k) = (y - k)^2$

$\Rightarrow (y - k) (y + (1 + k) = 0$

y = k, – (1+ k)

Now point P(0, k), Q (0, – (1 + k))

PQ = |2k + 1| = 5

2k + 1 = $\pm$ 5

2k = 4 , – 6

k = 2 – 3

hence k = 2 (k > 0)

16. Probability of hitting a target is $\frac{1}{10}$ then find the minimum number of trials so that probability of at least one success is greater than $\frac{1}{4}$ is

Ans. (3)

Sol. $p = \frac{1}{10}, q = \frac{9}{10}$

$\therefore$ p (at least one hit) = $1 - \left(\frac{9}{10}\right)^n \geq \frac{1}{4}$

$\Rightarrow \left(\frac{9}{10}\right)^n \geq \frac{3}{4}$

$(.9)^n \leq .75$

$n = 3 \Rightarrow 0.729 \leq .75$ which is true

17. Let $A=\begin{bmatrix}\cos & i\sin\theta \\ i\sin\theta\cos\theta\end{bmatrix}, 0<\theta<\frac{\pi}{24}$ and $A^5=\begin{bmatrix}a & b\\ c & d\end{bmatrix}$ then which statement is false

(1) $a^2-b^2=\frac{1}{2}$ (2) $a^2+b^2\in(0,1)$ (3) $a^2-d^2=0$ (4) $a^2-c^2=1$

Ans. (1)

Sol. $A^2=\begin{bmatrix}\cos\theta & i\sin\theta\\ i\sin\theta & \cos\theta\end{bmatrix}\begin{bmatrix}\cos\theta & i\sin\theta\\ i\sin\theta & \cos\theta\end{bmatrix}=\begin{bmatrix}\cos^2\theta-\sin^2\theta & 2i\sin\theta\cos\theta\\ 2i\sin\theta\ \cos\theta & \cos^2\theta-\sin^2\theta\end{bmatrix}=\begin{bmatrix}\cos 2\theta & i\sin 2\theta\\ i\sin 2\theta & \cos 2\theta\end{bmatrix}$

$A^3=\begin{bmatrix}\cos 2\theta & i\sin 2\theta\\ i\sin 2\theta & \cos 2\theta\end{bmatrix}\begin{bmatrix}\cos\theta & i\sin\theta\\ i\sin\theta & \cos\theta\end{bmatrix}$

$=\begin{bmatrix}\cos 3\theta & i\sin 3\theta\\ i\sin 3\theta & \cos 3\theta\end{bmatrix}$

$\therefore\quad A^5\begin{bmatrix}\cos 5\theta & i\sin 5\theta\\ i\sin 5\theta & \cos 5\theta\end{bmatrix}=\begin{bmatrix}a & b\\ c & d\end{bmatrix}$

$a=\cos 5\theta, b=i\sin 5\theta, c=i\sin 5\theta, d=\cos 5\theta$ a = d, b = c

(1) $a^2+b^2=\cos^2 5\theta-\sin^2 5\theta=1$

(2) $a^2+b^2=\cos^2 5\theta-\sin^2 5\theta=\cos 10\theta\in(0,1)$ as $0<\theta<\frac{\pi}{24}$

(3) $a^2-d^2=0$

(4) $a^2-c^2=a^2-b^2=1$

18. If $\left(a-\sqrt{2}b\cos x\right)\left(a+\sqrt{2}b\cos y\right)=a^2-b^2$ then value of $\frac{dy}{dx}$ at $\left(\frac{\pi}{4},\frac{\pi}{4}\right)$ is-

(1) $\frac{a-b}{a+b}$ (2) $\frac{a+b}{a-b}$ (3) $\frac{2a+b}{a-b}$ (4) $\frac{2a+b}{a-b}$

Ans. (2)

Sol. $\left(a-\sqrt{2}b\cos x\right)\left(-\sqrt{2}b\sin y\right)\frac{dy}{dx}+\sqrt{2}b\sin x\left(a+\sqrt{2}b\cos y\right)=0$

$\frac{dy}{dx}=\frac{\sqrt{2}b\sin x(a+\sqrt{2}b\cos y)}{\sqrt{2}b\sin y(a-\sqrt{2}b\cos x)}=\frac{\sin x\left(a+\sqrt{2}b\cos y\right)}{\sin y(a-\sqrt{2}b\cos x)}$

$\frac{dy}{dx}\left(\frac{\pi}{4},\frac{\pi}{4}\right)=\frac{a+b}{a-b}$

19. $f(x+y)=f(x)+f(y)+xy^2+x^2y$ and $\lim_{x\to 0}\frac{f(x)}{x}=1$, then find value of $f'(3)$

Ans. 10

Sol. $f(x+y)=f(x)+f(y)+xy^2+x^2y$

$f'(x+y)=f'(x)+0+y^2+2xy$

put $y=-x$

$f'(0)=f'(x)+x^2-2x^2$ $1=f'(x)-x^2$ $f'(x)=1+x^2$

$f'(3)=10$

20. If f is twice differentiable function for $x \in R$ such that $f(2)=5,\ f'(2)=8$ and $f'(x) \geq 1, f''(x) \geq 4$ then

(1) $f(5)+f'(5) \leq 26$ (2) $f(5)+f'(5) \geq 28$ (3) $f(5)+f'(5) \leq 28$ (4) none of these

Ans. (2)

Sol. Given $f'(x) \geq 1 \Rightarrow \int_2^5 f'(x)dx \geq \int_2^5 1.dx$

$\Rightarrow \left(f(x)\right)_2^5 \geq (x)_2^5$ $\Rightarrow \left(f(x)\right)_2^5 \geq (x)_2^5$ $\Rightarrow f(5) \geq 8$ ....(1)

Now $\Rightarrow f''(x) \geq 4 \Rightarrow \int_2^5 f''(x)dx \geq \int_2^5 4dx$

$= (f'(x))_2^5 \geq (4x)_2^5$

$\Rightarrow (f'(5)-f'(2) \geq 12$

$\Rightarrow (f'(5) \geq 20$ ....(2)

$(1)+(2) \Rightarrow f(5)+(f'(5) \geq 28$

21. If $(2x^2+3x+4)^{10} = \sum_{r=0}^{20} a_r x^r$, then $\frac{a_7}{a_{13}} =$

Ans. 8

Sol. General term $\frac{10}{r_1!r_2!r_3!}(2x^2)^{r_1}.(3x)^{r_2}(4)^{r_3}$

$$a_7 = \frac{10!2^3.3.4^6}{3!1!6!} + \frac{10!2^3.3^3.4^5}{2!3!5!} + \frac{10!2.3^5.4^4}{1!5!4!} + \frac{10!.3^7.4^3}{7!3!}$$

$$a_{13} = \frac{10!2^6.3.4^3}{6!1!3!} + \frac{10!2^5.3^3.4^2}{5!3!2!} + \frac{10!2^4.3^5.4^1}{4!5!1!} + \frac{10!.2^3.3^7 4^0}{3!7!}$$

$$\frac{a_7}{a_{13}} = 2^3 = 8$$

22. If from a point (3,3) on the hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ a normal is drawn which cuts x axis at (9,0) then value of (a^2, e^2) is

(1) $\left(\frac{9}{2}, 3\right)$ (2) $\left(\frac{9}{2}, 1\right)$ (3) (9,3) (4) (3, 9)

Ans. (1)

Sol. Hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$

P(3, 3) lies on hyperbola then $\frac{1}{a^2} - \frac{1}{b^2} = \frac{1}{9}$ ....(1)

Normal at (3, 3) is

$\frac{a^2x}{3} + \frac{b^2x}{3} = a^2 + b^2$ pass through (9, 0) $3a^2 = a^2 + b^2 = 2a^2 = b^2$

then $\frac{1}{a^2} - \frac{1}{2a^2} = \frac{1}{9}$ $2a^2 = 9 \Rightarrow a^2 = \frac{9}{2}$ and $b^2 = 9$ $e^2 = 1 + \frac{b^2}{a^2} = 1 + 2 = 3$

gravity
Orienting Intelligence

JEE MAIN 2020 PHASE 1

JEE Main - 2020 | Best Result in U.P.

Aditya Pandey
Percentile
99.936
City Topper
Application No. 200310320565
DOB - 23-12-2002

65 Students Above 99 Percentile
145 Students Above 98 Percentile
208 Students Above 97 Percentile

Abdullah (99.92)	Umayr (99.92)	Shivang Pandey (99.91)	Vinod Meena (99.89)	Jnaneswar Rao (99.89)	Pranav Rastogi (99.88)	Shiva Kumar (99.87)	Akshay Verma (99.86)
Neeraj Gartia (99.86)	Ayush Kumar (99.85)	Krishna Bhardwaj (99.85)	Ganesh (99.78)	Prashant Singh (99.74)	Adarsh Goyal (99.71)	Naman Dhingra (99.69)	Faraz Siddiqui (99.68)
Abhishek Kumar (99.66)	Avinesh Pratap (99.66)	Ajit Kumar (99.59)	Gitartha Bharadwaj (99.58)	Sameed (99.58)	Sameer (99.56)	Abhishek Kumar (99.54)	Ayush Jaiswal (99.52)
Sanjay Pratap (99.52)	Suryanshu Kumar (99.52)	Mihir Agarwal (99.50)	Mohil (99.49)	Brijesh Kumar (99.48)	Harshit Mishra (99.47)	Harsh Ghandwani (99.46)	Abdul Nasir (99.43)
Vinay Kumar (99.42)	Rustam Naryaan (99.42)	Tejeswar Reddy (99.39)	Pruthvi Raj (99.39)	Debdut Saini (99.38)	G Sai Kiran (99.37)	Sahil Kumar (99.32)	Pankaj (99.31)
Satyam Agarwal (99.31)	Divyanshu Yadav (99.28)	Piyush Tiwari (99.26)	Alisha Verma (99.23)	Avinash Kumar (99.19)	Amisha Verma (99.15)	Chetan Singh (99.13)	Ritik umar (99.13)
Shubham Kumar (99.10)	Randheer (99.08)	Aryansh Tripathi (99.06)	Saurabh Maurya (99.03)	Mohammad Affan (99.03)	Pradumna Awasthi (99.02)	Harsh (99.02)	Abhay (99.01)

SCHOOL INTEGRATED PROGRAM (SIP)

Tradition of Gravity Continues,
Once Again Historical Result,
100% Students Cracked
JEE Main
(Based on Last Yr Cut off)

2020
80 Out of 80
Cracked JEE Main

We had three Batches
of 55, 15 and 10.

Many Top Ranks are
from these Batches

2019
79 Out of 80 in JEE Main | 50 Out of 79 in JEE Adv.

2018
83 Out of 85 in JEE Main | 62 Out of 83 in JEE Adv.

2017
80 Out of 85 in JEE Main | 63 Out of 80 in JEE Adv.

2016
39 Out of 40 in JEE Main | 31 Out of 39 in JEE Adv.

Selections Engineering 2019

gravity
Orienting Intelligence

Tarun

194 AIR (General)

Aniket Agarwal

337 AIR (General)

Shubh Sahu

494 AIR (General)

Shlok Nemani

497 AIR (General)

50 out of 79 Cracked JEE Advanced from SIP (School Integrated Program)

4 Ranks under 500 (General Category) | 2 Ranks under 10 (Reserved Category)

126 Selections in JEE Advanced | 61 Students above 99 Percentile in JEE Main 2019

Sanjana

AIR - 3*

Akash

AIR - 4*

Priyanka

AIR - 68*

Bibek Lakra

AIR - 150*

Neha Raj

AIR - 177*

Arindam

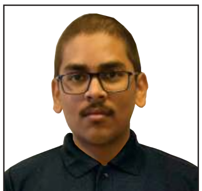
AIR - 809 (General EWS)

Priyam

AIR - 1378 (General)

Mihir Chawla

AIR - 2237 (General)



Madhur Kumar

AIR - 2382 (General)

Manish Kumar

AIR - 2388 (General)

Saumya Raj

AIR - 2656 (General)

Raghav

AIR - 2659 (General)

Ritveek

AIR - 2709 (General)

Vanshaj

AIR - 2787 (General)

Subir Gupta

AIR - 2881 (General)

Aryan Rastogi

AIR - 3167 (General)

Devansh

AIR - 3600 (General)

Abhisht Bose

AIR - 3784 (General)