

# JEE Main (Phase-II) 2020

## Memory Based Questions & Solutions

**SUBJECT**

**MATHEMATICS**

**Date: 03 September, 2020 (Shift-2)**

**Time: 3 PM to 6 PM**

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1. If  $\int_0^{\frac{1}{2}} \frac{x^2}{(1-x^2)^{3/2}} dx = \frac{k}{6}$ , then  $k =$

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

Ans. (2)

Sol.  $\frac{k}{6} = \int_0^{\frac{1}{2}} \frac{x^2}{(1-x^2)^{3/2}} dx$                        $x = \sin \theta; dx = \cos \theta d\theta$

$$\Rightarrow \frac{k}{6} = \int_0^{\frac{\pi}{6}} \frac{\sin^2 \theta}{(1-\sin^2 \theta)^{3/2}} \cdot \cos \theta d\theta \quad \Rightarrow \frac{k}{6} = \int_0^{\frac{\pi}{6}} \frac{\sin^2 \theta}{\cos^3 \theta} \cdot \cos \theta d\theta$$

$$\Rightarrow \frac{k}{6} = \int_0^{\frac{\pi}{6}} \tan^2 \theta d\theta = \int_0^{\frac{\pi}{6}} (\sec^2 \theta - 1) d\theta$$

$$\Rightarrow \frac{k}{6} = (\tan \theta - \theta) \Big|_0^{\pi/6} = \left( \frac{1}{\sqrt{3}} - \frac{\pi}{6} \right) = \frac{2\sqrt{3} - \pi}{6}$$

$$\Rightarrow k = 2\sqrt{3} - \pi$$

2. Let  $\frac{x^2}{25} + \frac{y^2}{b^2} = 1$  and  $\frac{x^2}{16} - \frac{y^2}{b^2} = 1$  are ellipse and hyperbola respectively such that  $e_1 e_2 = 1$  where  $e_1$  &  $e_2$  are eccentricities. If distance between foci of ellipse is  $\alpha$  and that of hyperbola is  $\beta$  then  $(\alpha, \beta) =$

- (1) (4, 5)                      (2) (8, 10)                      (3) (10, 7)                      (4) (4, 10)

Ans. (2)

Sol.  $e_1 = \sqrt{1 - \frac{b^2}{25}}$ ;                       $e_2 = \sqrt{1 + \frac{b^2}{16}}$ ;

$$e_1 e_2 = 1$$

$$\Rightarrow (e_1 e_2)^2 = 1 \quad \Rightarrow \left(1 - \frac{b^2}{25}\right) \left(1 + \frac{b^2}{16}\right) = 1 \quad \Rightarrow 1 + \frac{b^2}{16} - \frac{b^2}{25} - \frac{b^4}{25 \times 16} = 1$$

$$\Rightarrow \frac{9}{16 \cdot 25} b^2 - \frac{b^4}{15 \cdot 16} = 0 \quad \Rightarrow b^2 = 9$$

$$e_1 = \sqrt{1 - \frac{9}{25}} = \frac{4}{5}$$

$$e_2 = \sqrt{1 + \frac{9}{16}} = \frac{5}{4}$$

$$\alpha = 2(5)(e_1) = 8$$

$$\beta = 2(4)(e_2) = 10$$

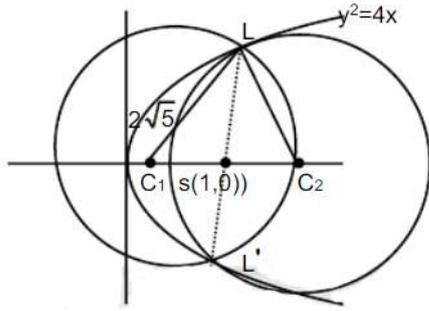
$$(\alpha, \beta) = (8, 10)$$

3. Two equal circles of radius  $2\sqrt{5}$  passes through the extrimities of latus restum of  $y^2 = 4x$  then find the dist. Between centres of circles

- (1) 4                      (2) 8                      (3) 2                      (4) 6

Ans. (2)

Sol.



$$C_1C_2 = 2C_1S = 2\sqrt{20-4} = 8$$

4. If  $\int \sin^{-1}\left(\frac{\sqrt{x}}{\sqrt{1+x}}\right) dx = A(x) \tan^{-1} \sqrt{x} + B(x) + C$  then  $A(x)$  and  $B(x)$  will be

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

Ans. (3)

Sol.

$$I = \int \sin^{-1}\left(\frac{\sqrt{x}}{\sqrt{1+x}}\right) dx$$

$$\int \tan^{-1}\left(\frac{\sqrt{x}}{1}\right) dx = x \tan^{-1} \sqrt{x} - \int \frac{1}{1+x} \cdot \frac{1}{2\sqrt{x}} \cdot x dx + C = x \tan^{-1} \sqrt{x} - \frac{1}{2} \int \frac{t \cdot 2t \cdot dt}{1+t^2} + C \quad (x=t^2)$$

$$= x \tan^{-1} \sqrt{x} - \int \frac{t^2}{1+t^2} dt + C = x \tan^{-1} \sqrt{x} - t + \tan^{-1} t + C = x \tan^{-1} \sqrt{x} - \sqrt{x} + \tan^{-1} \sqrt{x} + C$$

$$(x+1) \tan^{-1} \sqrt{x} - \sqrt{x} + C \quad \Rightarrow \quad (Ax) = x+1 \quad \Rightarrow \quad B(x) = -\sqrt{x}$$

5. The coefficient of term independent of  $x$  in the expansion of  $\left(\frac{3x^2}{2} - \frac{1}{3x}\right)^9$  is  $\lambda$  then  $18\lambda$  is

- (1) 9                                      (2) 7                                      (3) 6                                      (4) 4

Ans. (2)

Sol.

$$T_{r+1} = {}^9C_r \left(\frac{3x^2}{2}\right)^{9-r} \left(-\frac{1}{3x}\right)^r$$

$$= {}^9C_r \left(\frac{3}{2}\right)^{9-r} \left(-\frac{1}{3}\right)^r x^{18-3r}$$

For the term independent of  $x$  put  $r = 6$

$$\Rightarrow T_7 = {}^9C_6 \left(\frac{3}{2}\right)^3 \left(-\frac{1}{3}\right)^6 = {}^9C_3 \left(\frac{1}{6}\right)^3 = \frac{9 \times 8 \times 7}{3 \times 2 \times 1} \left(\frac{1}{6}\right)^3 = \left(\frac{7}{18}\right)$$

6. If  $|z_1 - 1| = \text{Re}(z_1)$ ,  $|z_2 - 1| = \text{Re}(z_2)$  and  $\arg(z_1 - z_2) = \frac{\pi}{3}$ , then,  $\text{Im}(z_1 + z_2) =$

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

Ans. (2)

Sol.

$|z_1 - 1| = \text{Re}(z_1)$  Let  $z_1 = x_1 + iy_1$  and  $z_2 = x_2 + iy_2$

$$(x_1 - 1)^2 + y_1^2 = x_1^2$$

$$y_1^2 - 2x_1 + 1 = 0 \quad \dots\dots(1)$$

$$|z_2 - 1| = \operatorname{Re}(z_2) \quad \Rightarrow \quad (x_2 - 1)^2 + y_2^2 = x_2^2$$

$$y_2^2 - 2x_2 + 1 = 0 \quad \dots\dots (2)$$

$$y_1^2 - y_2^2 - 2(x_1 - x_2) = 0 \quad \Rightarrow \quad (y_1 - y_2)(y_1 + y_2) = 2(x_1 - x_2)$$

$$y_1 + y_2 = 2 \left( \frac{x_1 - x_2}{y_1 - y_2} \right) \quad \dots\dots (3)$$

$$\arg(z_1 - z_2) = \frac{\pi}{3} \quad \Rightarrow \quad \tan^{-1} \left( \frac{y_1 - y_2}{x_1 - x_2} \right) = \frac{\pi}{3}$$

$$\frac{y_1 - y_2}{x_1 - x_2} = \sqrt{3} \quad \dots\dots (4)$$

$$\therefore y_1 + y_2 = \frac{2}{\sqrt{3}} \quad \Rightarrow \quad \operatorname{Im}(z_1 + z_2) = \frac{2}{\sqrt{3}}$$

7. The probability of 5 digit numbers that are made up of exactly two distinct digit is

- (1)  $\frac{135}{10^4}$                       (2)  $\frac{125}{10^4}$                       (3)  $\frac{144}{10^4}$                       (4)  $\frac{127}{10^4}$

Ans. (1)

Sol. Total =  $9(10^4)$

$$\text{fav. way} = {}^9C_2(2^5 - 2) + {}^9C_1(2^4 - 1) = 36(30) + 9(15) = 1080 + 135$$

$$\text{Prob.} = \frac{36 \times 30 + 9 \times 15}{9 \times 10^4} = \frac{4 \times 30 + 15}{10^4} = \frac{135}{10^4}$$

8. Let  $(\lambda^2 + 1)x^2 - 4\lambda x + 2 = 0$  be a quadratic equation then set of values of  $\lambda$  if exactly one root of quadratic equation lies (0, 1) is

- (1) (2, 3)                      (2) (1, 3)                      (3) [1, 2)                      (4) (1, 3)

Ans. (4)

Sol.  $f(0) f(1) \leq 0$

$$\Rightarrow 2(\lambda^2 + 1 - 4\lambda + 2) \leq 0 \quad \Rightarrow \quad 2(\lambda^2 - 4\lambda + 3) \leq 0$$

$$(\lambda - 1)(\lambda - 3) \leq 0$$

$$\Rightarrow \lambda \in [1, 3]$$

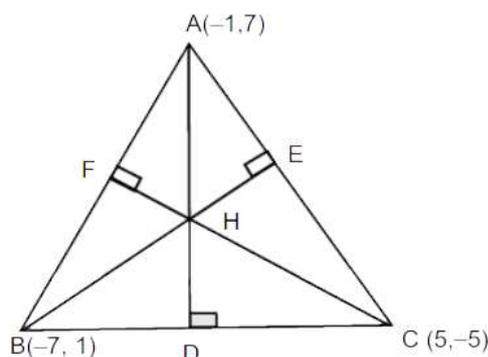
But  $\lambda = 1$ , both roots are 1 so  $\lambda \neq 1$ .

9. The orthocentre of  $\Delta ABC$  where vertices are  $A(-1, 7)$ ,  $B(-7, 1)$ ,  $C(5, -5)$  is

- (1) (-3, 3)                      (2) (3, -3)                      (3) (3, -3)                      (4) (-3, -3)

Ans. (1)

Sol.



$$m_{BC} = \frac{6}{-12} = -\frac{1}{2}$$

∴ Equation of AD is  $y - 7 = 2(x + 1)$   
 $y = 2x + 9$  .....(1)

$$m_{AC} = \frac{12}{-6} = -2$$

∴ Equation of BE is

$$y - 1 = \frac{1}{2}(x + 7)$$

$$y = \frac{x}{2} + \frac{9}{2} \quad \text{..... (2)}$$

by (1) and (2)

$$2x + 9 = \frac{x + 9}{2}$$

$$\Rightarrow 4x + 18 = x + 9$$

$$\Rightarrow 3x = 9 \Rightarrow x = -3$$

$$\therefore y = 3$$

10. m A.M. and 3 GM are inserted between 3 and 243 such that 2<sup>nd</sup> GM = 4<sup>th</sup> AM then m =  
 (1) 39 (2) 40 (3) 41 (4) 42

Ans. 39

Sol. 3, A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, ..... A<sub>m</sub>, 243

$$d = \frac{243 - 3}{m + 1} = \frac{240}{m + 1}$$

3, G<sub>1</sub>, G<sub>2</sub>, G<sub>3</sub>, 243

$$r = \left(\frac{243}{3}\right)^{\frac{1}{3+1}} = (81)^{1/4} = 3$$

$$G_2 = A_4$$

$$\Rightarrow 3(3)^2 = 3 + 4\left(\frac{340}{m+1}\right) \Rightarrow 27 = 3 + \frac{960}{m+1} \Rightarrow m + 1 = 40 \Rightarrow m = 39$$

11. A normal is drawn to parabola  $y^2 = 4x$  at (1,2) and tangent is drawn to  $y = e^x$  at (c, e<sup>c</sup>). If tangent and normal intersect at x – axis then find C.

(1) 04 (2) 05 (3) 06 (4) 07

Ans. 04.00

Sol. For (1, 2) of  $y^2 = 4x \Rightarrow t = 1, a = 1$

$$\text{Normal} \Rightarrow tx + y = 2at + at^3$$

$$\Rightarrow x + y = 3 \text{ intersect x-axis at } (3, 0)$$

$$y = e^x \Rightarrow \frac{dy}{dx} = e^x$$

$$\text{tangent} \Rightarrow y - e^c = e^c(x - c)$$

$$\text{at } (3, 0) \Rightarrow 0 - e^c = e^c(3 - c) \Rightarrow c = 4$$

12. If relation  $R_1 = \{(a, b) : a, b \in \mathbb{R}, a^2 + b^2 \in \mathbb{Q}\}$  and  $R_2 = \{(a, b) : a, b \in \mathbb{R}, a^2 + b^2 \notin \mathbb{Q}\}$

- (1) R<sub>1</sub> is transitive, R<sub>2</sub> is not transitive  
 (2) R<sub>1</sub> is not transitive, R<sub>2</sub> is not transitive  
 (3) R<sub>1</sub> is transitive R<sub>2</sub> is transitive  
 (4) R<sub>1</sub> is not transitive, R<sub>2</sub> is transitive

Ans. (2)

**Sol.** For  $R_1$  let  $a = 1 + \sqrt{2}, b = 1 - \sqrt{2}, c = 8^{1/4}$

$aR_1b \Rightarrow a^2 + b^2 = (1 + \sqrt{2})^2 + (1 - \sqrt{2})^2 = 6 \in \mathbb{Q}$

$aR_1c \Rightarrow b^2 + c^2 = (1 - \sqrt{2})^2 + (8^{1/4})^2 = 3 \in \mathbb{Q}$

$aR_1c \Rightarrow a^2 + c^2 = (1 + \sqrt{2})^2 + (8^{1/4})^2 = 3 + 4\sqrt{2} \notin \mathbb{Q}$

$\therefore R_1$  is not transitive

For  $R_2$  let  $a = 1 + \sqrt{2}, b = \sqrt{2}, c = 1 - \sqrt{2}$

$aR_2b \Rightarrow a^2 + b^2 = (1 + \sqrt{2})^2 + (\sqrt{2})^2 = 5 + 2\sqrt{2} \notin \mathbb{Q}$

$bR_2b \Rightarrow b^2 + c^2 = (\sqrt{2})^2 + (1 - \sqrt{2})^2 = 5 - 2\sqrt{2} \notin \mathbb{Q}$

$aR_2c \Rightarrow a^2 + c^2 = (1 + \sqrt{2})^2 + (1 - \sqrt{2})^2 = 6 \in \mathbb{Q}$

$\therefore R_2$  is not transitive

**13.** If the sum of first  $n$  terms of series  $20 + 19\frac{3}{5} + 19\frac{1}{5} + 18\frac{4}{5} + \dots$  is 488 and  $n$ th term is negative then find  $n$

- (1) -4                      (2) 4                      (3) 1                      (4) 6

**Ans.** (1)

**Sol.**  $488 = \frac{n}{2} \left[ 2 \left( \frac{100}{5} \right) + (n-1) \left( -\frac{2}{5} \right) \right]$

$488 = \frac{n}{2} (101 - n) \Rightarrow n^2 - 101n + 2440 = 0$

$\Rightarrow n = 61$  or  $40$

For  $n = 40 \Rightarrow T_n > 0$

For  $n = 61 \Rightarrow T_n > 0$

$T_n = \frac{100}{5} + (61-1) \left( -\frac{2}{5} \right) = -4$

**14.** Surface area of cube is increasing at rate of  $3.6 \text{ cm}^2/\text{s}$ . Find the rate at which its volume increases when lengths of side  $a$  is  $10 \text{ cm}$ .

- (1) 9                      (2) 10                      (3) 18                      (4) 20

**Ans.** (1)

**Sol.**  $S = 6a^2 \Rightarrow \frac{ds}{dt} = 12a \cdot \frac{da}{dt} = 3.6 \Rightarrow 12(10) \frac{da}{dt} = 3.6$

$\Rightarrow \frac{da}{dt} = 0.03$

$V = a^3 \Rightarrow \frac{dv}{dt} = 3a^2 \cdot \frac{da}{dt} = 3(10)^2 \cdot \left( \frac{3}{100} \right) = 9$

**15.** Which of the following point lies on plane containig lines  $\vec{r} = \hat{i} + \lambda(\hat{i} + \hat{j} + \hat{k})$  and  $\vec{r} = -\hat{j} + \mu(-\hat{i} - 2\hat{j} + \hat{k})$

- (1) (1, 3, 6)                      (2) (1, -3, 6)                      (3) (-2, 1, 2)                      (4) (1, 3, 1)

**Ans** (2)

**Sol.** Normal of plane =  $\begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 1 & 1 & 1 \\ -1 & -2 & 1 \end{vmatrix}$

$\vec{n} = 3\hat{i} - 2\hat{j} - \hat{k}$

D.R.'s = 3, -2, -1

Plane  $\Rightarrow 3(x - 1) - 2(y - 0) - 1(z - 0) = 0$

$\Rightarrow 3x - 2y - z - 3 = 0$

16.  $\lim_{x \rightarrow a} \frac{(a^2 + 2x^2)^{1/3} - (3x^2)^{1/3}}{(3a^2 + x^2)^{1/3} - (4x^2)^{1/3}} =$

- (1)  $\left(\frac{4}{3}\right)^{2/3}$                       (2)  $\frac{1}{3}\left(\frac{3}{4}\right)^{2/3}$                       (3)  $\frac{1}{3}\left(\frac{2}{3}\right)^{2/3}$                       (4)  $\frac{1}{3}\left(\frac{4}{3}\right)^{2/3}$

Ans. (4)

Sol.  $\frac{\frac{1}{3}(a^2 + 2x^2)^{-2/3} \cdot 4x - \frac{1}{3}(3x^2)^{-2/3} \cdot 6x}{\frac{1}{3}(3a^2 + x^2)^{-2/3} \cdot 2x - \frac{1}{3}(4x^2)^{-2/3} \cdot 6x}$

$$\frac{(3a^2)^{-2/3} \cdot 2}{(4a^2)^{-2/3} \cdot 6}$$

$$\frac{1}{3} \cdot \frac{4^{2/3}}{3^{2/3}}$$

17. If  $x^3 dy + xy dx = 2y dx + x^2 dy$  and  $y(2) = e$  then  $y(4) = ?$

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

Ans. (4)

Sol.  $x^3 dy + xy dx = 2y dx + x^2 dy$

$$\Rightarrow ((x^3 - x^2)dy = (2 - x)y dx$$

$$\Rightarrow \frac{dy}{y} = \frac{2 - x}{x^2(x - 1)} dx$$

$$\Rightarrow \int \frac{dy}{y} = \int \frac{2 - x}{x^2(x - 1)} dx \dots\dots\dots (1)$$

Let  $\frac{2 - x}{x^2(x - 1)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x - 1}$

$$\Rightarrow 2 - x = A(x - 1) + B(x - 1) + Cx^2$$

$$\Rightarrow C = 1, B = -2 \text{ and } A = -1$$

$$\Rightarrow \int \frac{dy}{y} = \int \left\{ \frac{-1}{x} - \frac{2}{x^2} + \frac{1}{x - 1} \right\} dx$$

$$\Rightarrow \ln y = -\ln x + \frac{2}{x} + \ln |x - 1| + C$$

$$\therefore y(2) = 0$$

$$\Rightarrow 1 = -\ln 2 + 1 + 0 + C$$

$$\Rightarrow C = \ln 2$$

$$\Rightarrow \ln y = -\ln x + \frac{2}{x} + \ln |x - 1| + \ln 2$$

at  $x = 4$

$$\Rightarrow \ln y(4) = -\ln 4 + \frac{1}{2} + \ln 3 + \ln 2$$

$$\Rightarrow \ln y(4) = \ln \left(\frac{3}{2}\right) + \frac{1}{2} = \ln \left(\frac{3}{2} e^{1/2}\right)$$

$$\Rightarrow y(4) = \frac{3}{2} e^{1/2}$$

18. Find the number of 3 digit numbers if sum of their digits is 10

Ans. 55. 00

Sol. Let xyz be the three digit number

$$x + y + z = 10, x \leq 1, y \geq 0, z \geq 0$$

$$x - 1 = t \quad \Rightarrow \quad x = 1 + t \quad \begin{matrix} x - 1 \geq 0 \\ t \geq 0 \end{matrix}$$

$$t + y + z = 10 - 1$$

$$t + y + z = 9, \quad 0 \leq t, z, z \leq 9$$

coefficient of  $x^9$  is  $(1 + x + x^2 + \dots + x^9)$

$$= \left( \frac{1-x^{10}}{1-x} \right) = (1-x)^{-3} \quad \therefore \quad \text{coefficient of } x^9 \text{ is } 3 + 9 - 1 = {}^{11}C_9 = {}^{11}C_2 = \frac{11 \cdot 10}{2} = 55$$

19. If  $a \cos \theta = b \cos \left( \theta + \frac{2\pi}{3} \right) = c \cos \left( \theta + \frac{4\pi}{3} \right)$  then find angle between vectors  $\hat{a}i + \hat{b}j + \hat{c}k$  and  $\hat{b}i + \hat{c}j + \hat{a}k$  if

$$\theta = \frac{\pi}{9} \text{ and } a^2 + b^2 + c^2 = 1, \text{ is}$$

(1)  $\frac{\pi}{3}$

(2)  $\frac{\pi}{6}$

(3)  $\frac{2\pi}{3}$

(4)  $\frac{5\pi}{6}$

Ans (3)

Sol. 
$$\frac{a}{\cos \theta} = \frac{b}{\cos \left( \theta + \frac{4\pi}{3} \right)} = \frac{a+b+c}{\cos \theta + \cos \left( \theta + \frac{2\pi}{3} \right) + \cos \left( \theta + \frac{4\pi}{3} \right)} = \frac{a+b+c}{0}$$

$$\Rightarrow a + b + c = 0 \Rightarrow a^2 + b^2 + c^2 + 2(ab + bc + ca) = 0$$

$$\Rightarrow ab + bc + ca = -\frac{1}{2}$$

Now let angle between given vectors is  $\phi$

$$\therefore \cos \phi = \frac{(\hat{a}i + \hat{b}j + \hat{c}k)(\hat{b}i + \hat{c}j + \hat{a}k)}{a^2 + b^2 + c^2}$$

$$\cos \phi = \frac{ab + bc + ca}{1} = \frac{-1}{2}$$

$$\phi = \frac{2\pi}{3}$$

20. If  $(p \wedge q) \rightarrow (\sim q \vee r)$  has truth value false then the truth values of p, q, r respectively are

(1) T, T, F

(2) T, F, T

(3) F, F, T

(4) T, T, T

Ans. (1)

Sol.  $(p \wedge q)$  should be TRUE and  $(\sim p \vee r)$  should be FALSE.

**JEE Main - 2020**

**Best Result in U.P.**



**Aditya Pandey**  
Percentile  
**99.936**  
**City Topper**

Application No. 200310320565  
DOB - 23-12-2002

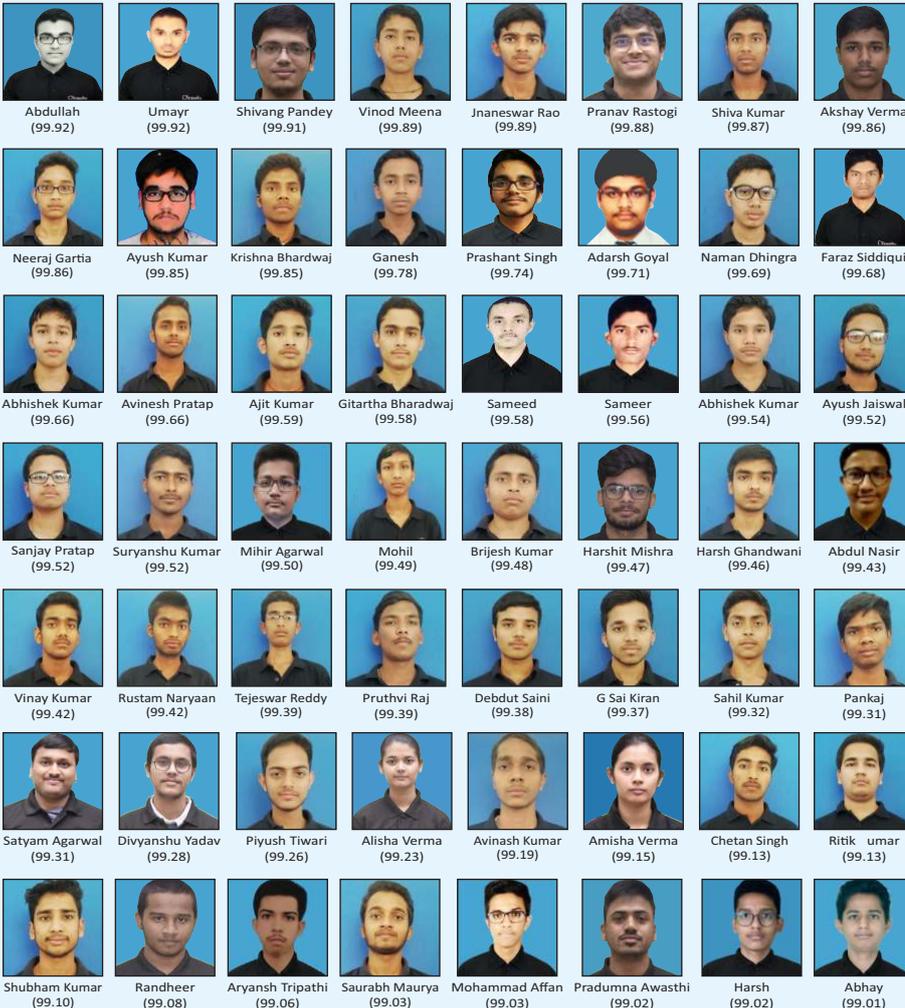
**SCHOOL INTEGRATED  
PROGRAM (SIP)**

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

**65 Students Above 99 Percentile**

**145 Students Above 98 Percentile**

**208 Students Above 97 Percentile**



**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 | 50 Out of 79  
in | in  
JEE Main | JEE Adv.

**2018**

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

**2017**

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

**2016**

39 Out of 40 | 31 Out of 39  
in | in  
JEE Main | 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)



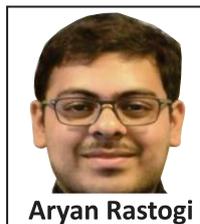
Vanshaj

**AIR - 2787**  
(General)



Subir Gupta

**AIR - 2881**  
(General)



Aryan Rastogi

**AIR - 3167**  
(General)



Devansh

**AIR - 3600**  
(General)



Abhisht Bose

**AIR - 3784**  
(General)