Resonance®
Educating for better tomorrow

JEE (Main)

PAPER-1 (B.E./B. TECH.)

2022

COMPUTER BASED TEST (CBT)

Memory Based Questions & Solutions

Date: 28 July, 2022 (SHIFT-2) | TIME : (3.00 p.m. to 06.00 p.m)

Duration: 3 Hours | Max. Marks: 300

SUBJECT: MATHEMATICS

Resonance Eduventures Ltd.
Reg. Office & Corp. Office : CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005
Ph. No.: +91-744-2777777, 2777700 | **FAX No. :** +91-022-39167222
To Know more : sms **RESO** at **56677** | **Website :** www.resonance.ac.in | **E-mail :** contact@resonance.ac.in | **CIN :** U80302RJ2007PLC024029
Toll Free : 1800 258 5555 7340010333 facebook.com/ResonanceEdu twitter.com/ResonanceEdu www.youtube.com/resowatch blog.resonance.ac.in

PART : MATHEMATICS

1. If $f(x) = ax^2 + bx + c$ is a quadratic expression with $f(1) = 3$, $f(-2) = \lambda$, $f(3) = 4$ and $f(0) + f(1) + f(2) + f(3) = 14$, then the value of λ is

(1) – 4 (2) 4 (3) 2/3 (4) 3/2

Ans. **(2)**

Sol. $f(1) = 3 \Rightarrow a + b + c = 3$ ......(1)

$f(3) = 4 \Rightarrow 9a + 3b + c = 4$ ......(2)

$f(0) = c$

Since f(0) + f(1) + f(–2) + f(3) = 14
c + 3 + 4a – 2b + c + 4 = 14
$\Rightarrow$ 4a – 2b + 2c = 7 ......(3)
By solving (1), (2) and (3) $a = \frac{1}{6}, b = -\frac{1}{6}$ & $c = 3$

$\Rightarrow f(x) = \frac{1}{6}x^2 - \frac{1}{6}x + 3$

$\lambda = f(-2) = 4$

2. The value of $60\int_0^{\pi/2} \frac{\sin 6x}{\sin x}dx$ is

(1) 101 (2) 104 (3) 105 (4) 109

Ans. (2)

Sol. $I = \int_0^{\pi/2} \frac{\sin 6x}{\sin x}dx$

$= \int_0^{\pi/2} \left(\frac{3\sin 2x - 4\sin^3 2x}{\sin x}\right)dx$

$= \int_0^{\pi/2} \{6\cos x - 4(2\cos x)^3.\sin^2 x\}dx$

$= \int_0^{\pi/2} (6\cos x - 32\sin^2 x\cos^3 x)dx$

$= 6\sin x\Big|_0^{\pi/2} - 32\int_0^{\pi/2} \sin^2 x(1-\sin^2 x)\cos x dx$

$= 6 - 32\left[\frac{\sin^3 x}{3} - \frac{\sin^5 x}{5}\right]_0^{\pi/2}$

$= = 6 - 32\left(\frac{1}{3} - \frac{1}{5}\right) = \frac{26}{15}$

So $60\int_0^{\pi/2} \frac{\sin 6x}{\sin x}dx = 60x\frac{26}{15} = 104$

3. If $1 + (2 + {}^{49}C_1 + {}^{49}C_2 + \ldots\ldots + {}^{49}C_{49})({}^{50}C_2 + {}^{50}C_4 + {}^{50}C_6 + \ldots.. + {}^{50}C_{50}) = m.2^n$ then value of m + n is

Ans. (99)

Sol. $1 + (2 + 2^{49} - 1)(2^{49} - 1) = m.2^n$
$\Rightarrow 1 + (2^{49} + 1)(2^{49} - 1) = m.2^n$
$\Rightarrow 1 + 2^{98} - 1 = m.2^n$
$\Rightarrow$ m = 1, n = 98 so m + n = 99

4. The differential equation of all the circles passing through the points (0, 2) and (0,–2) ; is

(1) $2xyy' + (x^2+y^2+4) = 0$ (2) $2xyy' + (x^2-y^2+4) = 0$
(3) $2xyy' + (-x^2+y^2+4) = 0$ (4) $2xyy' + (x^2+y^2-4) = 0$

Ans. (2)

Sol. $(x^2+y^2-4) + \lambda x = 0$ ......(i)
where λ is parameter.
Now differentiate equation (i) with respect to x , we get
$\lambda = -2(x + yy')$ ......(ii)
from (i) and (ii)
$(x^2 + y^2 - 4) - 2(x+yy')x = 0$
$\Rightarrow y^2 - x^2 - 4 - 2xy y' = 0$
$\Rightarrow 2xy\frac{dy}{dx} + (x^2 - y^2 + 4) = 0$

5. The sum of maximum and minimum values of $f(x) = \tan^{-1}(\sin x - \cos x)$, is (where $x \in [0, \pi]$)

(1) 0 (2) $\tan^{-1}\left(\frac{\sqrt{3}}{2} - 1\right) - \frac{\pi}{4}$ (3) $\cos^{-1}\left(\frac{1}{\sqrt{3}}\right) - \frac{\pi}{4}$ (4) $\frac{-\pi}{12}$

Ans. (3)

Sol. f(x) = $\tan^{-1}(\sin x - \cos x)$

$$f' = \frac{1}{1+(\sin x-\cos x)^2}[\cos x+\sin x]$$

$$= \frac{\cos x+\sin x}{2-\sin 2x)},\ x\in[0,\pi]$$

+ ________|________ –

$\frac{3\pi}{4}$

Hence x = $\frac{3\pi}{4}$ is point of maxima

$$f\left(\frac{3\pi}{4}\right) = \tan^{-1}\left(\frac{1}{\sqrt{2}}+\frac{1}{\sqrt{2}}\right) = \tan^{-1}\left(\sqrt{2}\right)$$

$f(0) = \tan^{-1}(0-1) = -\frac{\pi}{4}$

$f(\pi) = \tan^{-1}(0+1) = \frac{\pi}{4}$

So maximum value of f(x) is $\tan^{-1}\sqrt{2} = \cos^{-1}\frac{1}{\sqrt{3}}$

and minimum value of f(x) is $-\frac{\pi}{4}$

sum = $\left(\cos^{-1}\frac{1}{\sqrt{3}}-\frac{\pi}{4}\right)$

6. If tangents drawn from (2, 0) to the parabola $x = -2y^2$ are also tangents to the circle $(x-5)^2 + y^2 = r^2$ then the value of $17r^2$ is

Ans. **(9)**

Sol. Equation of tangent of parabola $y^2 = -\frac{1}{2}x$ in slope form is $y = mx - \frac{1}{8m}$ ....(i)

It is passes through (2, 0), so $2m = \frac{1}{8m} \Rightarrow m = \pm\frac{1}{4}$

$\Rightarrow y = \frac{x}{4}-\frac{1}{2}$ and $y = \frac{-x}{4}+\frac{1}{2}$ are also tangents to the circle $(x-5)^2 + y^2 = r^2$

$$\Rightarrow r = \left|\frac{\frac{5}{4}-\frac{1}{2}}{\sqrt{\frac{1}{16}+1}}\right| \Rightarrow 17r^2 = 9$$

7. If α & β are the roots of the quadratic equation $x^2-\sqrt{3}x+\sqrt{6}=0$ and $1+\frac{1}{\alpha^2}, 1+\frac{1}{\beta^2}$ are the roots of the quadratic equation $x^2 + ax + b = 0$, then roots of the quadratic equation $x^2-(a + b - 2)x + (a + b + 2) = 0$ are -

(1) Both non-real
(2) Both real and positive
(3) Both real and negative
(4) Both real, one is positive and another is negative

Ans. **(3)**

Sol. $x^2-\sqrt{3}x+\sqrt{6}=0$ with roots α, β

Equation having roots $1+\frac{1}{\alpha^2}, 1+\frac{1}{\beta^2}$

$$\frac{1}{x-1}-\frac{\sqrt{3}}{\sqrt{x-1}}+\sqrt{6}=0$$

$$\left(\frac{1}{x-1}+\sqrt{6}\right)=\sqrt{\frac{3}{x-1}}$$

$$\frac{1}{(x-1)^2}+6+\frac{2\sqrt{6}}{x-1}=\frac{3}{x-1}$$

$1 + 6(x-1)^2 + 2\sqrt{6}(x-1) = 3(x-1)$

$\Rightarrow 6x^2 + \left(2\sqrt{6}-15\right)x + \left(10-2\sqrt{6}\right) = 0$

$$\Rightarrow x^2+\left(\frac{2\sqrt{6}-15}{6}\right)x+\left(\frac{10-2\sqrt{6}}{6}\right)=0$$

So, $a=\frac{2\sqrt{6}-15}{6}$, $b=\frac{10-2\sqrt{6}}{6}$

$\Rightarrow a+b=-\frac{5}{6}$

Now quadratic equation $x^2 - (a + b - 2)x + (a + b + 2) = 0$ is also $6x^2 + 17x + 7 = 0$

Since, $D = (17)^2 - 4(6)(7) > 0$, sum of roots $= -\frac{17}{6}$ and product of roots $= \frac{7}{6}$

Hence both roots are real negative

8. If $\frac{6}{3^{12}}+\frac{10}{3^{11}}+\frac{20}{3^{10}}+\frac{40}{3^{9}}......+\frac{10240}{3^{1}}=2^{m}.n$ then the value of m.n is

Ans. **(12)**

Sol. $n.2^m = \frac{6}{3^{12}}+10\left(\frac{1}{3^{11}}+\frac{2}{3^{10}}+\frac{2^2}{3^9}+....+\frac{2^{10}}{3^1}\right)$

$= \frac{6}{3^{12}}+\frac{10}{3^{11}}\left(\frac{6^{11}-1}{6-1}\right)$

$= \frac{6}{3^{12}}+\frac{2}{3^{11}}\left(6^{11}-1\right)$

$\Rightarrow n.2^m = \frac{6^{12}}{3^{12}}=2^{12}$

$\Rightarrow n = 1, m = 12$

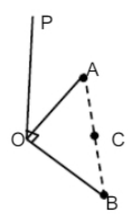
$\Rightarrow mn = 12$

9. If OAB is a triangular park and OP is a vertical tower such that AB = 16, $\angle PAO = 15^\circ = \angle PBO$, $\angle PCO = 45^\circ$ where C is mid-point of AB, then height of tower is

(1) $16\left(\frac{2}{\sqrt{3}}-1\right)$ (2) $32\left(\frac{2}{\sqrt{3}}-1\right)$ (3) $32\left(\frac{2}{\sqrt{3}}+1\right)$ (4) $16\left(\frac{2}{\sqrt{3}}+1\right)$

Ans. **(2)**

Sol.



OP = OA tan 15° = OB tan15° .....(i)

and OP= OC tan45° $\Rightarrow$ OP = OC ......(ii)

also OA = OB ......(iii)

so $OC^2 + 8^2 = OA^2$

$OP^2 + 64 = \left(\frac{OP}{\tan 15^\circ}\right)^2$

$OP^2 + 64 = OP^2\left(\frac{\sqrt{3}+1}{\sqrt{3}-1}\right)^2$

$64 = OP^2\left[\frac{(\sqrt{3}+1)^2-(\sqrt{3}-1)^2}{(\sqrt{3}-1)^2}\right] = OP^2\left(\frac{4\sqrt{3}}{(\sqrt{3}-1)^2}\right)$

$OP^2 = \frac{64(\sqrt{3}-1)^2}{4\sqrt{3}} = 32\left(\frac{2}{\sqrt{3}}-1\right)$

10. If curves y = f(x) satisfying differential equation $\frac{dy}{dx}+\left(\frac{1}{x^2-1}\right)y=\left(\frac{x-1}{x+1}\right)^{\frac{1}{2}}$ such that f(2) = $\sqrt{3}$ then the value of $\sqrt{7}$ f(8) is

(1) 7–3ℓn3 (2) 21–6ℓn2 (3) 21–6ℓn3 (4) 7+3ℓn2

Ans. (3)

Sol. $\frac{dy}{dx}+\left|\frac{1}{x^2-1}\right|y=\left(\frac{x-1}{x+1}\right)^{\frac{1}{2}}$ is linear differential equation

I. F. = $e^{\int\frac{1}{x^2-1}dx}=\sqrt{\frac{x-1}{x+1}}$

So, solution of given differential equation is

$y\sqrt{\frac{x-1}{x+1}}=\int\left(\frac{x-1}{x+1}\right)^{\frac{1}{2}}\left(\frac{x-1}{x+1}\right)^{\frac{1}{2}}dx + C$

$= y\sqrt{\frac{x-1}{x+1}}=x-2\ell n(x+1)+C$

It is passing through $\left(2,\sqrt{3}\right) \Rightarrow$ c = 2 ℓn3 – 1

$\Rightarrow y\sqrt{\frac{x-1}{x+1}}=x-2\ell n(x+1)+2\ell n3-1$

put x = 8 $\Rightarrow \frac{y\sqrt{7}}{3}=8-2\ell n9+2\ell n3-1$

$\Rightarrow y\sqrt{7}=\sqrt{7}\ f(8)=21-6\ell n3$

11. If b and g are number of boys and girls in a class respectively such that number of ways to select 3 boys and 2 girl is 168, then the value of (b + 2g) is equal to

Ans. (14)

Sol. $^bC_3 . {}^gC_2 = 168$

$\frac{b(b-1)(b-2)}{6}.\frac{g(g-1)}{2}=168$

b(b–1) (b–2) . g(g–1) = 2.6.14.12 = $2^5.3^2.7^1$

$\because$ b $\in$ n and b $\geq$ 3, g $\in$ N, g $\geq$ 2

$\Rightarrow$ b(b–1) (b–2) . g(g–1) = 8.7.6.3.2

$\Rightarrow$ b=8, g = 3 so b + 2g = 14

12. If A and B are two 3 × 3 order matrices such that A is symmetric and B is skew-symmetric, then which of the following is incorrect.

(1) $A^4 - B^4$ is symmetric matrix (2) AB – BA is symmetric matrix
(3) $A^5 - B^5$ is skew-symmetric (4) AB + BA is skew-symmetric

Ans. (3)

Sol. Given $A^T = A$, $B^T = -B$

(1) P = $A^4 - B^4$
$P^T = (A^4 - B^4)^T$
$= (A^T)^4 - (B^T)^4$
$= A^4 - B^4 = P$, So $A^4 - B^4$ is symmetric matrix
(1) is correct
(2) Let Q = AB – BA
$Q^T = (AB - BA)^T = B^TA^T - A^TB^T$

= –BA + AB = Q $\Rightarrow$ AB – BA is symmetric matrix
(2) is correct
(3) Let P = $A^5 - B^5$
$P^T = (A^T)^5 - (B^T)^5$
$= A^5 - (-B)^5$
$= A^5 + B^5 \Rightarrow$
$A^5 - B^5$ is not skew-symmetric
(3) is incorrect
(4) Let Q = AB + BA
$Q^T = (AB + BA)^T = B^TA^T + A^TB^T$
= – BA + AB = AB – BA = Q

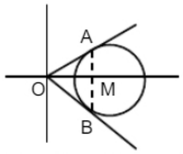
(4) is correct

13. If OA and OB are tangents to the circle $(x-2)^2 + y^2 = 1$ from origin (O) then the area of ΔOAB is

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

Ans. **(2)**

Sol.



Equation of chord AB is 2x=3

$\Rightarrow$ OA = OB = $\sqrt{3}$

$\Rightarrow$ AM = $\frac{\sqrt{3}}{2}$

Area of ΔOAB = $\frac{1}{2}(2AM)(OM) = \frac{\sqrt{3}}{2}.\frac{3}{2} = \frac{3\sqrt{3}}{4}$

14. Consider the following statements

P: Ramesh is singing

Q: Ramesh is out of his village

R : It is Sunday

S : It is Saturday

Now which of the following option is logically equivalent to the compound statement "Ramesh is singing only if he is in his village and it is either Sunday or Saturday

(1) $((\sim q) \wedge (r \vee s)) \rightarrow P$ (2) $P \rightarrow (\sim q \wedge (s \vee r))$

(3) $P \rightarrow (q \wedge (r \vee s)$ (4) $P \rightarrow (q \wedge (r \vee s))$

Ans. **(2)**

Sol. $\therefore$ p $\rightarrow$ q convey the same meaning as P only if q

15. If $x(t) = 2\sqrt{2}\cos t\sqrt{\sin 2t}$ and $y(t)\ 2\sqrt{2}\sin t\sqrt{\sin 2t})$, where $t \in \left(0, \frac{\pi}{2}\right)$ then the value of $\left\{\frac{1+\left(\frac{dy}{dx}\right)^2}{\frac{d^2y}{dx^2}}\right\}$ at x = $\frac{\pi}{4}$

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

Ans. **(4)**

Sol. $\frac{y}{x}$ = tant and $x^2 + y^2 = 8 \sin 2t$

$x^2 + y^2 = \frac{16 \tan t}{1+\tan^2 t}$

$(x^2+y^2) = \frac{16xy}{x^2+y^2}$

$\Rightarrow (x^2+y^2)^2 = 16xy$

$\Rightarrow 2(x^2+y^2)\,(2x+2y\frac{dy}{dx}) = 16\,(x\frac{dy}{dx}+y)$ ....(i)

$\Rightarrow$ when $t = \frac{\pi}{4} \Rightarrow x = 2 = y$ and $\frac{dy}{dx} = -1$ ....(ii)

Differentiate of equation (i) w.r. to x

$$2(2x+2y\frac{dy}{dx})^2 + 2(x^2+y^2)\left(2+2\left(\left(\frac{dy}{dx}\right)^2 + y\frac{d^2y}{dx^2}\right)\right) = 16\left(x\frac{d^2y}{dx^2} + 2\frac{dy}{dx}\right)$$

at x = $\frac{\pi}{4}$ $\Rightarrow 0 + 16\ (2+2+4\ \frac{d^2y}{dx^2}) = 16\left(2\frac{d^2y}{dx^2}-2\right) \Rightarrow \frac{d^2y}{dx^2} = -3$

$\left\{\frac{\left[1+\left(\frac{dy}{dx}\right)^2\right]}{\frac{d^2y}{dx^2}}\right\}$ at x = $\frac{\pi}{4} = -\frac{2}{3}$

16. The coefficient of middle terms of the expansions $\left(\frac{1}{\sqrt{6}}+\beta x\right)^4, (1-3\beta x)^2$, and $\left(1-\frac{\beta x}{2}\right)^6$ are in AP with common difference d > 0 then the value of $50-\frac{2d}{\beta^2}$ is

Ans. 46

Sol. ${}^4C_2\left(\frac{1}{\sqrt{6}}\right)^2(\beta)^2, -6\beta, -{}^6C_3\frac{\beta^3}{8}$ in AP

$\beta^2, -6\beta, -\frac{5}{2}\beta^3$ are in AP

$-12\beta = \beta^2 - \frac{5}{2}\beta^3$

$-24\beta = 2\beta^2 - 5\beta^3$

$5\beta^3 - 2\beta^2 - 24\beta = 0$

$5\beta^2 - 2\beta^2 - 24 = 0\ \ (\beta \neq 0)$

$\Rightarrow 5\beta^2 - 12\beta + 10\beta - 24 = 0$

$(5\beta-12)(\beta+2) = 0$

$\beta = \frac{12}{5}$ or $\beta = -2$

when $\beta = \frac{12}{5} \Rightarrow d = -\beta - \beta^2 = -\frac{72}{5} - \frac{144}{25} = \frac{-504}{25}$ not possible because d > 0

when $\beta = -2 \Rightarrow d = -6\beta - \beta^2 = 12 - 4 = 8$

so $50 - \frac{2d}{\beta^2} = 50 - \frac{16}{4} = 46$

17. If $S = \left\{x : x \in [-6,3] - \{-2,2\}, \frac{|x+3|-1}{|x|-2} \geq 0\right\}$ and $T = \{x : x \in z ; x^2 - 7|x| + 9 \leq 0\}$, then number of elements in $S \cap T$ is

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

Ans. (3)

Sol. $T = \{x : x \in z ; x^2 - 7|x| + 9 \leq 0\}$

$|x^2| - 7|x| + 9 \leq 0$

$\Rightarrow |x| \in \left[\frac{7-\sqrt{13}}{2}, \frac{7+\sqrt{13}}{2}\right]$

$\Rightarrow |x| = 2, 3, 4, 5$

$\Rightarrow S = \left\{x : x \in [-6,3] - \{-2,2\}, \frac{|x+3|-1}{|x|-2} \geq 0\right\}$

To find $n(S \cap T)$

$|x| \neq 2 \Rightarrow |x| = 3, 4, 5, x \in [-6,3] - \{-2,2\}$ and $|x+3| \geq 1 \Rightarrow x = 3, -4, -5 \Rightarrow n(S \cap T) = 3$

18. There are 4 girls and 6 boy in a class. Three students are selected randomly from the class. If a random variety 'x' represents the number of selected girls, then the value of $100(\sigma^2)$ is : where (σ^2 is the variance of distribution)

Ans. (56)

Sol. By probability distribution

x	0	1	2	3
P(x)	$\frac{{}^6C_3}{{}^{10}C_3}$	$\frac{{}^4C_1.{}^6C_2}{{}^{10}C_3}$	$\frac{{}^4C_2.{}^6C_1}{{}^{10}C_3}$	$\frac{{}^4C_3}{{}^{10}C_3}$

Variance $= \Sigma p_i . x_i^2 - (\mu)^2$

$= \left(0+\frac{60}{120}.1+\frac{36}{120}.4+\frac{4}{120}.9\right) - \left(0+\frac{60.1}{120}+\frac{36.2}{120}+\frac{4.3}{120}\right)^2 = \frac{240}{120} - \left(\frac{144}{120}\right)^2$

$(6)^2$

$\sigma^2 = 2 - \left(\frac{6}{5}\right)^2$

$= \frac{50-36}{25}$

$\Rightarrow 100\sigma^2 = 100\left(\frac{14}{25}\right) = 56$

19 If $f(x) = \lim\limits_{n\to\infty}\left(\frac{\cos 2\pi x + x^{2n}\sin(x-1)}{1+x^{2n+1}-2^n}\right)$, $n \in N$ then f(x) is continuous for x belong to :

(1) R–{–1} (2) R–{1} (3) R–{–1,1} (4) R–{0}

Ans. **(1)**

Sol. Case-1 when $|x| > 1 \Rightarrow f(x) = \lim\limits_{n\to\infty}\frac{x^{2n}}{x^{2n+1}}\left(\frac{\frac{1}{x^{2n}}.\cos 2\pi x + \sin(x-1)}{\frac{1}{x^{2n+1}}+1-\frac{1}{x}}\right) = \frac{\sin(x-1)}{x-1}$

Case-2 When $-1 < x < 1 \Rightarrow f(x) = \lim\limits_{n\to\infty}\left(\frac{\cos 2\pi x + x^{2n}\sin(x-1)}{1+x^{2n+1}-x^{2n}}\right)$

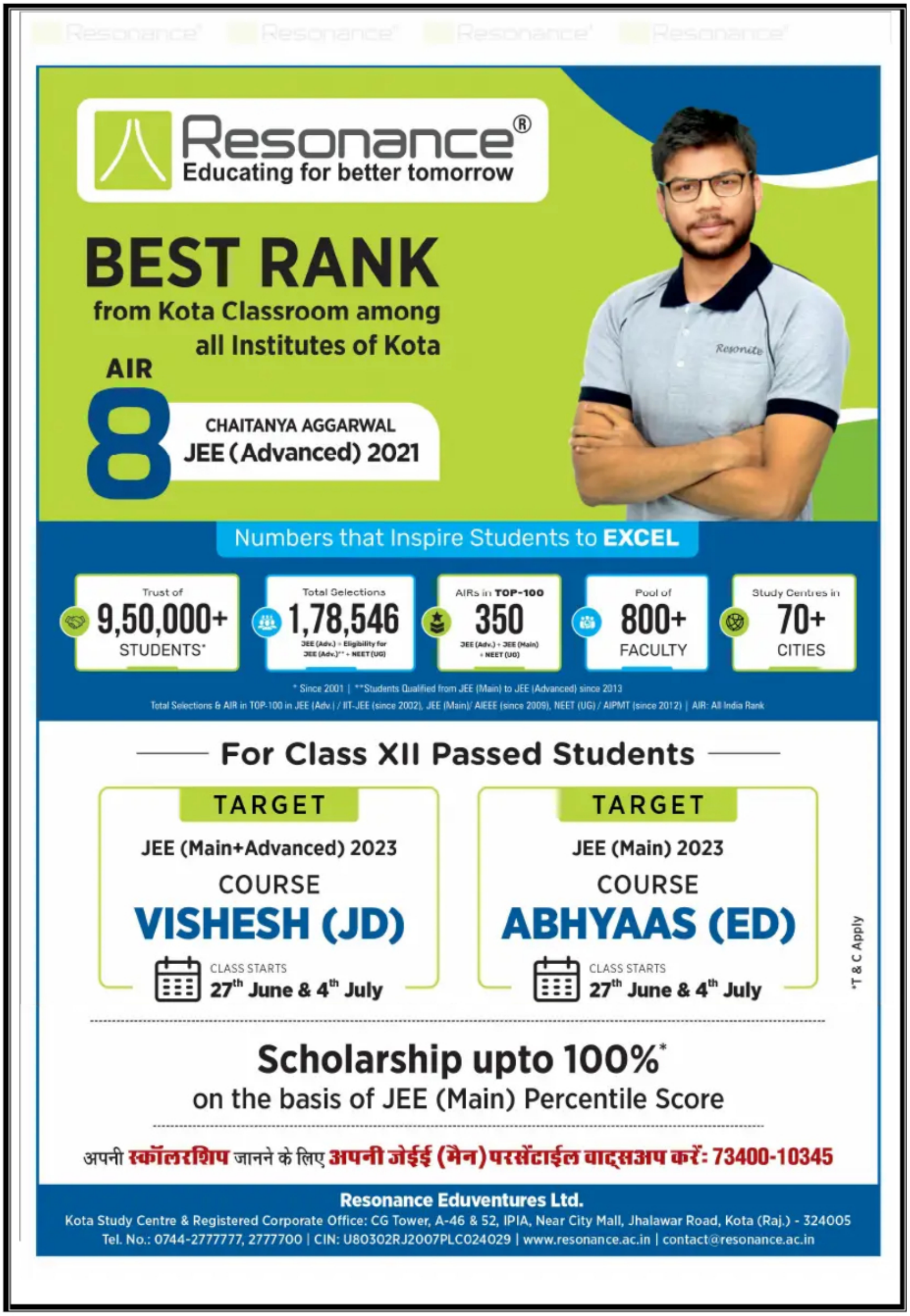
$f(x) = \cos 2\pi x$

Case-3 When $x = 1 \Rightarrow f(1) = 1$

Case-4 when $x = -1 \Rightarrow f(-1) = \sin 2 - 1$

So, $f(x) = \begin{cases} \frac{\sin(x-1)}{x-1}, & x < -1 \text{ or } x > 1 \\ \cos 2\pi x, & -1 < x < 1 \\ 1, & x = 1 \\ \sin 2 - 1, & x = -1 \end{cases}$

function f(x) is continuous except $x = -1$


Resonance®
Educating for better tomorrow
BEST RANK
from Kota Classroom among
all Institutes of Kota
AIR
8
CHAITANYA AGGARWAL
JEE (Advanced) 2021
Numbers that Inspire Students to EXCEL
Trust of 9,50,000+ STUDENTS*
Total Selections 1,78,546 JEE (Adv.) + Eligibility for JEE (Adv.)** + NEET (UG)
AIRs in TOP-100 350 JEE (Adv.) + JEE (Main) + NEET (UG)
Pool of 800+ FACULTY
Study Centres in 70+ CITIES
* Since 2001 | **Students Qualified from JEE (Main) to JEE (Advanced) since 2013
Total Selections & AIR in TOP-100 in JEE (Adv.) / IIT-JEE (since 2002), JEE (Main)/ AIEEE (since 2009), NEET (UG) / AIPMT (since 2012) | AIR: All India Rank
For Class XII Passed Students
TARGET
JEE (Main+Advanced) 2023
COURSE
VISHESH (JD)
CLASS STARTS
27th June & 4th July
TARGET
JEE (Main) 2023
COURSE
ABHYAAS (ED)
CLASS STARTS
27th June & 4th July
*T & C Apply
Scholarship upto 100%*
on the basis of JEE (Main) Percentile Score
अपनी स्कॉलरशिप जानने के लिए अपनी जेईई (मैन) परसेंटाईल वाट्सअप करें: 73400-10345
Resonance Eduventures Ltd.
Kota Study Centre & Registered Corporate Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005
Tel. No.: 0744-2777777, 2777700 | CIN: U80302RJ2007PLC024029 | www.resonance.ac.in | contact@resonance.ac.in