INDIAN SCHOOL MUSCAT – SENIOR SECTION – DEPARTMENT OF MATHEMATICS

QUESTION BANK (MCQ) – MATHEMATICS – CLASS 12– (2019 – 20)

S.NO	MCQ (1 Mark Each)
1	The value of $sin^{-1}\left(cos\left(\frac{43\pi}{5}\right)\right)$ (a) $\frac{3\pi}{5}$ (b) $\frac{-7\pi}{5}$ (c) $\frac{\pi}{10}$ (d)$\frac{-\pi}{10}$
2	If A = $\begin{bmatrix} 2 & -1 & 3 \\ -4 & 5 & 1 \end{bmatrix}$ and B = $\begin{bmatrix} 2 & 3 \\ 4 & -2 \\ 1 & 5 \end{bmatrix}$,then (a) only AB is defined (b) only BA is defined (c)AB &BA both are defined (d) AB &BA both are not defined
3	The matrix A = $\begin{bmatrix} 0 & 0 & 5 \\ 0 & 5 & 0 \\ 5 & 0 & 0 \end{bmatrix}$ is a (a) scalar matrix (b) diagonal matrix (c)unit matrix (d) square matrix
4	If θ is the angle between two vectors $\hat{a}$ and $\hat{b}$and $\hat{a}\,.\,\hat{b} \geq 0$ only when (a) $0< \theta < \frac{\pi}{2}$ (b) $0\leq \theta \leq \frac{\pi}{2}$ (c) $0< \theta < \pi$ (d)$0\leq \theta \leq \pi$
5	P is a point on the line segment joining the points (3,2-1) and (6,2,-2).If x- coordinate of P is 5 ,then its y-coordinate is a) 2 (b) 1 (c) -1 (d)-2
6	If α , β and γ are the angles that a line makes with the positive direction of x , y ,z axis ,respectively, then the direction cosines of the line are (a) sin$\alpha, sin\beta, sin\gamma$ (b) cosα , $cos\beta$, $cos\,\gamma$ (c) tanα , $tan\beta$, $tan\gamma$ (d)$cos^2\alpha$, $cos^2\beta$, $cos^{\,2}\gamma$
7	The distance of a point P(a,b,c) from x- axis is (a) $\sqrt{a^2+b^2}$ (b)$\sqrt{a^2+c^2}$ (c) $\sqrt{b^2+c^2}$ (d)b^2+c^2
8	Let A and B be two events .If P(A) = 0.2 ,P(B) = 0.4 ,P(A∪B) =0.6 ,then P(A/B) is equal to (a) 0.8 (b) 0.5 (c) 0 (d)0.3
9	If A and B are any two events such that P(A) + P(B) –P(A and B) = P(A) ,then (a) P(B/A) =1 (b) P(A/B)=1 (c) P(B/A) =0 (d) P(A/B)=0
10	$\int e^x\,(cos\,x - sin\,x)$dx is equal to (a) $e^xcosx + C$ (b)) $e^xsinx + C$ (c) $-e^xcosx + C$ (d) $-e^xsinx + C$
11	The projection vector $\vec{a} = 2\hat{\imath} - \hat{\jmath} + \hat{k}$ along $\vec{b} = \hat{\imath} + 2\hat{\jmath} + 2\,\hat{k}$ is (a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\sqrt{6}$ (d) 2
12	$\int \frac{dx}{sin^2x\,cos^2x}$ is equal to (a) tan x + cot x +C (b) $(\tan x + \cot x)^2$+C (c) tan x - cot x +C(d)$(\tan x - \cot x)^2$+C
13	The coordinates of the foot of the perpendicular drawn from the point (2,5,7) on the axis is (a) (2,0,0) (b) (0,5,0) (c)(0,0,7) (d)(0,5,7)

14	The equations of x –axis in space are (a) x=0 ,y = 0 (b) x= 0 , z = 0 (c) x = 0 (d) y = 0 ,z = 0
15	A line makes equal angles with coordinate axis .Direction cosines of this line are (a)$\pm(1,1,1)$ (b) $\pm(\frac{1}{\sqrt{3}},\frac{1}{\sqrt{3}},\frac{1}{\sqrt{3}})$(c) $\pm(\frac{1}{\sqrt{3}},\frac{-1}{\sqrt{3}},\frac{-1}{\sqrt{3}})$ (d)$\pm(\frac{1}{3},\frac{1}{3},\frac{1}{3})$
16	If P (A/B) $>$ P (A),then which of the following is correct? (a) P(B/A) $<$ P(B) (b)P(A ∩B)<P(A).P(B) (c) P(B/A) $>$ P(B) (d) P(B/A) $=$ P(B)
17	The value of $\left(\cos^{-1}\frac{3}{5}+\tan^{-1}\frac{1}{4}\right)$ is (a) $\frac{19}{8}$ (b)$\frac{8}{19}$ (c) $\frac{19}{12}$ (d)$\frac{3}{4}$
18	Total number of possible matrices of order 3 x 3 with each entry 2 or 0 is (a) 9 (b) 27 (c) 512 (d) 81
19	In a box containing 100 bulbs ,10 are defective .The probability that out of a sample of 5 bulbs, none is defective is (a) $\frac{1}{10}$ (b) $\left(\frac{1}{2}\right)^5$ (c) $\frac{9}{10}$ (d)$\left(\frac{9}{10}\right)^5$
20	If $\begin{bmatrix}2x+y & 4x\\ 5x-7 & 4x\end{bmatrix}=\begin{bmatrix}7 & 7y-13\\ y & x+6\end{bmatrix}$,then the values of x& y are (a) x = 3 , y = 1 (b) x = 2 , y = 3 (c) x = 2 , y = 4 (d) x= 3 , y = 3
21	The value of cot$(\sin^{-1}x)$ is (a) $\frac{\sqrt{1+x^2}}{x}$ (b) $\frac{x}{\sqrt{1+x^2}}$ (c) $\frac{1}{x}$ (d)$\frac{\sqrt{1-x^2}}{x}$
22	If A = $[aij]$is a 2 x 3 matrix ,such that $a_{ij}=\frac{(-i+2j)^2}{5}$,then a_{23} is (a)$\frac{1}{5}(b)\frac{2}{5}$ (c) $\frac{9}{5}$(d)$\frac{16}{5}$
23	If $\int\frac{x^3}{\sqrt{1+x^2}}dx$ = a $\left(1+x^2\right)^{\frac{3}{2}}$ + b $\sqrt{1+x^2}$ + C ,then (a) a = $\frac{1}{3}$, b = 1 (b) a= $\frac{-1}{3}$, b = 1 (c) a= $\frac{-1}{3}$, b = -1 (d) a= $\frac{1}{3}$, b = -1
24	If θ is the angle between any two vectors $\hat{a}$ and $\hat{b}$,then$\left\|\hat{a}.\hat{b}\right\|=\left\|\hat{a}\times\hat{b}\right\|$,when θ is equal to (a) $\frac{\pi}{3}$ (b)$\frac{\pi}{4}$ (c)$\frac{\pi}{2}$ (d)$\frac{\pi}{6}$
25	The angle between the straight line $\frac{x-2}{3}=\frac{y-3}{4}=\frac{z-4}{5}$ and the plane 2x – 2y + z = 5 is (a) $\frac{10}{6\sqrt{5}}$ (b)$\frac{4}{5\sqrt{2}}$(c) $\frac{2\sqrt{3}}{5}$ (d)$\frac{\sqrt{2}}{10}$
26	Distance of the point (α,β,γ) from y – axis is (a) β (b) $\|\beta\|$ (c)$\|\beta\|+\|\gamma\|$ (d)$\sqrt{\alpha^2+\gamma^2}$
27	The reflection of the point (α,β,γ) in the xy – plane is (a) $(\alpha,\beta,0)$ (b) $(0,0,\gamma)$ (c) $(-\alpha,-\beta,\gamma)$ (d) $(\alpha,\beta,-\gamma)$
28	Let A and B be two events such that P(A) =0.6 ,P(B) = 0.2 and P(A|B) = 0.5 ,then P(A'|B') equals

	(a)$\frac{1}{10}$ (b) $\frac{1}{30}$ (c) $\frac{3}{8}$ (d)$\frac{6}{7}$
29	Let X be a discrete random variable .The probability distribution of X is given below. Then E(X) is equal to X: 30 | 10 | -10 P(X): $\frac{1}{5}$ | $\frac{3}{10}$ | $\frac{1}{2}$ (a) 6(b) 4 (c) 3 (d)-5
30	The value of $cos^{-1}\left(cos\left(\frac{3\pi}{2}\right)\right)$is (a) $\frac{3\pi}{2}$ (b)$\frac{5\pi}{2}$ (c)$\frac{\pi}{2}$ (d)$\frac{7\pi}{2}$
31	If A and B are two matrices of order 3 x m and 3 x n respectively and m = n ,then the order of matrix (5A – 2B) is (a) m x 3 (b) 3 x 3 (c) m x n (d) 3 x n
32	If A = $\begin{bmatrix}0 & 1\\1 & 0\end{bmatrix}$,then A^2 is equal to (a)$\begin{bmatrix}0 & 1\\1 & 0\end{bmatrix}$ (b)$\begin{bmatrix}1 & 0\\1 & 0\end{bmatrix}$ (c) $\begin{bmatrix}0 & 1\\0 & 1\end{bmatrix}$ (d)$\begin{bmatrix}1 & 0\\0 & 1\end{bmatrix}$
33	If $\overrightarrow{\lvert a\rvert}$ = 10 , $\overrightarrow{\lvert b\rvert}$ = 2 and $\vec{a}.\vec{b}$ = 12 ,then value of $\lvert\vec{a}\times\vec{b}\rvert$ is (a) 5 (b) 10 (c) 14 (d)16
34	If $\int\frac{3e^{x}-5e^{-x}}{4e^{x}+5e^{-x}}$dx = ax + b log $\lvert 4e^{x}+5e^{-x}\rvert$ + C ,then (a) a= $\frac{-1}{8}$, b = $\frac{7}{8}$ (b) a= $\frac{1}{8}$, b = $\frac{7}{8}$ (c) a= $\frac{-1}{8}$, b = $\frac{-7}{8}$ (d) a= $\frac{1}{8}$, b = $\frac{-7}{8}$
35	The intercepts made by the plane 2x – 3y + 4z = 12 on the coordinate axes are (a) 6,-4,3 (b) 2,-3,4 (c) 1,1,1 (d)$\frac{1}{6}$, $\frac{-1}{4}$, $\frac{1}{3}$
36	If a line makes angles α , β , γ with the positive direction of coordinate axes, then the value of $\sin^2\alpha+\sin^2\beta+\sin^2\gamma$ is (a) 2 (b) 1(c)-1(d)-2
37	If a line has direction ratios 2,-1,-2 ,then its direction cosines are (a) $\frac{2}{3}$, $\frac{1}{3}$, $\frac{2}{3}$ (b)$\frac{2}{3}$, $\frac{1}{3}$, $\frac{-2}{3}$ (c) $\frac{2}{3}$, $\frac{-1}{3}$, $\frac{-2}{3}$ (d)$\frac{-2}{3}$, $\frac{-1}{3}$, $\frac{-2}{3}$

38	If A and B are two events such that P(A)≠0 and P(B/A) = 1,then (a) A ⊂ B (b) B ⊂ A (c) B = Ø (d) A = Ø
39	The principal value of $sin^{-1}\left(\frac{-\sqrt{3}}{2}\right)$ is (a) $\frac{-2\pi}{3}$ (b)$\frac{-\pi}{3}$ (c)$\frac{-4\pi}{3}$ (d)$\frac{5\pi}{3}$
40	If A = $\begin{bmatrix} 5 & x \\ y & 0 \end{bmatrix}$ and A = A' ,then (a) x=0 ,y= 5 (b) x = y (c) x + y = 5 (d) x – y = 5
41	If f(x) = $\begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}$,then f(x).f(y) is equal to (a) f(x) (b)f(xy) (c)f(x + y) (d)f (x – y)
42	$\int \frac{x^3}{x+1}$dx is equal to (a) x + $\frac{x^2}{2} + \frac{x^3}{3} - log\|1-x\|$+ C (b)) x + $\frac{x^2}{2} - \frac{x^3}{3} - log\|1-x\|$+ C (c)) x - $\frac{x^2}{2} - \frac{x^3}{3} - log\|1+x\|$+ C (d)) x - $\frac{x^2}{2} + \frac{x^3}{3} - log\|1+x\|$+ C
43	The domain of the function defined by f(x) =$sin^{-1}x + cos\, x$ is (a) $[-1, 1]$(b) $[-1, \pi + 1]$(c)$(-\infty, +\infty)$(d) Ø
44	If the direction cosines of a line are k, k, k then (a) k >0 (b)0< $k < 1$ (c) k = 1 (d) k = $\frac{1}{\sqrt{3}}$ or - $\frac{1}{\sqrt{3}}$
45	The distance of the plane $\vec{r}$. ($\frac{2}{7}\hat{\imath} + \frac{3}{7}\hat{\jmath} + \frac{6}{7}\hat{k}$)= 1 from the origin is (a) 1 (b) 7(c) $\frac{1}{7}$ (d) None of these
46	The equation of a straight line parallel to x – axis is given by (a) $\frac{x-a}{1} = \frac{y-b}{1} = \frac{z-c}{1}$ (b) $\frac{x-a}{0} = \frac{y-b}{1} = \frac{z-c}{1}$ (c) $\frac{x-a}{0} = \frac{y-b}{0} = \frac{z-c}{1}$ (d)$\frac{x-a}{1} = \frac{y-b}{0} = \frac{z-c}{0}$
47	Suppose that two cards are drawn at random from a deck of cards. Let X be the number of aces obtained .Then the value of E(X) is (a) $\frac{37}{221}$ (b) $\frac{5}{13}$ (c) $\frac{1}{13}$ (d)$\frac{2}{13}$
48	Probability that A speaks truth is $\frac{4}{5}$ .A coin is tossed and A reports that a head appears. The probability that actually there was head is (a) $\frac{4}{5}$(b) $\frac{1}{2}$(c) $\frac{1}{5}$ (d)$\frac{2}{5}$
49	If a matrix A is both symmetric and skew symmetric ,then matrix A is (a)a scalar matrix(b) a diagonal matrix (c) a zero matrix of order n ×n(d)a rectangular matrix
50	If A = $\begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$,then A^6 is equal to (a)zero matrix (b)A (c) I (d)None of these

51	$\int_{a+c}^{b+c} f(x)dx$ is equal to (a) $\int_a^b f(x)dx$ (b) $\int_a^b f(x-c)dx$ (c) $\int_a^b f(x+c)dx$ (d) $\int_{a-c}^{b-c} f(x)dx$
52	The vector in the direction of the vector $\hat{\imath} - 2\hat{\jmath} + 2\hat{k}$ that has magnitude 9 is (a) $\hat{\imath} - 2\hat{\jmath} + 2\hat{k}$ (b) $3(\hat{\imath} - 2\hat{\jmath} + 2\hat{k})$ (c) $9(\hat{\imath} - 2\hat{\jmath} + 2\hat{k})$ (d) $\frac{\hat{\imath}-2\hat{\jmath}+2\hat{k}}{3}$
53	The angle between straight lines whose direction cosines are $(\frac{1}{2}, \frac{-1}{2}, \frac{1}{\sqrt{2}})$ and $(\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{-1}{\sqrt{3}})$ is (a) $cos^{-1}\left(\frac{2}{\sqrt{3}}\right)$ (b) $cos^{-1}\left(\frac{1}{\sqrt{6}}\right)$ (c) $cos^{-1}\left(\frac{-1}{\sqrt{6}}\right)$ (d) None of these
54	The plane 2x – 3y + 6z – 11 = 0 makes an angle $sin^{-1}(\alpha)$ with x- axis. The value of α is equal to (a) $\frac{\sqrt{3}}{2}$ (b) $\frac{\sqrt{2}}{3}$ (c) $\frac{2}{7}$ (d) $\frac{3}{7}$
55	Which of the following is the best condition for the plane ax + by + cz + d = 0 to intersect x and y- axis at equal angle? (a) $\|a\| = \|b\|$ (b) a = -b (c) a = b (d) $a^2 + b^2 = 1$
56	If P(A) = $\frac{1}{2}$, P(B) = 0 ,then P(A|B) is (a) 0 (b) $\frac{1}{2}$ (c) 1 (d)not defined
57	Two events A and B will be independent ,if (a) A and B are mutually exclusive (b) P(A'B')=$[1 - P(A)][1 - P(B)]$ (c) P(A) = P(B) (d) P(A) + P(B) = 1
58	The value of sin(2 $sin^{-1}(0.6)$) is (a)0.48 (b) 0.96 (c) 1.2 (d) sin 1.2
59	The matrix $\begin{bmatrix} 0 & -5 & 8 \\ 5 & 0 & 12 \\ -8 & -12 & 0 \end{bmatrix}$ is a (a)Diagonal matrix (b) symmetric matrix (c) skew symmetric matrix (d) scalar matrix
60	If A is a square matrix such that $A^2 = I$,then $(A - I)^3 + (A + I)^3 - 7A$ is equal to (a) A (b) I + A (c) I – A (d) 3 + A
61	$\int \frac{dx}{xlogxlog(logx)}$ is equal to (a)$\log\|log(logx)\|$ + C (b)$\|logx\|$ + C (c) $\log\left\|log\left(\frac{1}{x}\right)\right\|$ + C (d) $\log\|logx\|$ + C
62	The value of λ for which the two vectors $3\hat{\imath} - 6\hat{\jmath} + \hat{k}$ and $2\hat{\imath} - 4\hat{\jmath} + \lambda\hat{k}$ are parallel is (a) $\frac{3}{2}$ (b) $\frac{2}{3}$ (c) $\frac{5}{2}$ (d) $\frac{2}{5}$
63	If a line makes angles $\frac{\pi}{3}$ and $\frac{\pi}{4}$ with x- axis and z- axis respectively ,then the angle made by the line with y- axis is (a) $\frac{\pi}{3}$ (b) $\frac{\pi}{2}$ (c) $\frac{\pi}{4}$ (d) $\frac{5\pi}{12}$
64	The lines $\frac{x-2}{1} = \frac{y+4}{2} = \frac{z-3}{3}$ and $\frac{x}{2} = \frac{y-1}{4} = \frac{z+3}{6}$ are (a) skew (b) parallel (c) intersecting (d) coincident

65	The straight lines $\frac{x-3}{3} = \frac{y-2}{1} = \frac{z-1}{0}$ is (a) parallel to x-axis (b) parallel to y-axis (c) parallel to z-axis (d)perpendicular to z- axis
66	Two cards are drawn from a well shuffled deck of 52 playing cards with replacement. The probability, that both cards are queens , is (a) $\frac{1}{13} \times \frac{1}{13}$ (b) $\frac{1}{13} + \frac{1}{13}$ (c) $\frac{1}{13} \times \frac{1}{17}$ (d) $\frac{1}{13} \times \frac{4}{51}$
67	The probability of guessing correctly at least 8 out of 10 answers on true – false type examination is (a) $\frac{7}{64}$ (b) $\frac{7}{128}$ (c) $\frac{45}{1024}$ (d) $\frac{7}{41}$
68	If $sin^{-1}x + sin^{-1}y = \frac{\pi}{2}$,then value of $cos^{-1}x + cos^{-1}y$ is (a) $\frac{\pi}{2}$ (b) π (c) 0 (d) $\frac{2\pi}{3}$
69	If A and B are matrices of same order, then (AB'-BA') is a (a) skew symmetric matrix (b) null matrix (c) symmetric matrix (d)unit matrix
70	$\int \frac{cos\,2x}{cos\,x}\,dx$ is equal to (a) 2sin x + log$\lvert sec\,x - tan\,x\rvert$+ C (b) 2sin x - log$\lvert sec\,x - tan\,x\rvert$+ C (c) 2sin x + log$\lvert sec\,x + tan\,x\rvert$+ C (d) 2sin x - log$\lvert sec\,x + tan\,x\rvert$+ C
71	If the points (-1 ,-1 ,2),(2,m,5) and (3,11,6) are collinear, then value of m is (a) 8 (b) 4 (c) 2 (d) none of these
72	The ratio in which yz- plane divides the line joining the points A(3,1,-5) and B(1,4,-6) is (a) -3:1 (b) 3:1 (c) -1:3 (d) 1:3
73	A straight line is inclined to the axes of x and z at angles of 45° and 60° respectively ,then the inclination of the line to y-axis is (a) 30° (b) 45° (c) 60° (d)90°
74	The points (4,7,8),(2,3,4),(-1,-2,1) and (1,2,5) are (a) the vertices of a parallelogram (b)collinear (c) the vertices of a trapezium (d)concyclic
75	The probability that a person is not a swimmer is 0.3.The probability that out of 5 persons 4 are swimmers is (a) $5C_4(0.7)^4(0.3)$ (b) $5C_1(0.3)^4(0.7)$ (c) $5C_4(0.3)^4(0.7)$ (d)$(0.7)^4(0.3)$
76	The probability distribution of a discrete random variable X is given below. The value of k is X | 2 | 3 | 4 | 5 P(X) | $\frac{5}{k}$ | $\frac{7}{k}$ | $\frac{9}{k}$ | $\frac{11}{k}$ (a) 8 (b) 32 (c) 16 (d)48
77	If $tan^{-1}x + tan^{-1}y = \frac{4\pi}{5}$,then value of $cot^{-1}x + cot^{-1}y$ is (a) $\frac{\pi}{5}$ (b) $\frac{2\pi}{5}$ (c) $\frac{3\pi}{5}$ (d)π
78	If A is any square matrix of order 3 × 3 such that $\lvert A\rvert$ = 3, then value of $\lvert adjA\rvert$ is? (a) 3 (b) 9 (c) 27 (d)$\frac{1}{3}$
79	Suppose P and Q are two different matrices of order 3 × n and n × p,then the order of the matrix P × Q is? (a) 3 × p (b) p × 3 (c) n × n (d) 3 × 3

80	The value of $\int \frac{x^3}{1+x^8}$ dx is equal to (a) $\frac{1}{4}\tan^{-1} x^4$+ C (b) $\frac{1}{2}\tan^{-1} x^4$+ C (c)$\frac{1}{4}\cot^{-1} x^2$+ C (d)None of these
81	The vectors from the origin to the points A and B are $\vec{a} = 2\hat{\imath} - 3\hat{\jmath} + 2\hat{k}$ and $\vec{b} = 2\hat{\imath} + 3\hat{\jmath} + \hat{k}$ respectively ,then the area of triangle OAB is (a) 340 (b) $\sqrt{25}$ (c) $\sqrt{229}$ (d)$\frac{1}{2}\sqrt{229}$
82	The angle between the lines $\frac{x+1}{2} = \frac{y-2}{5} = \frac{z}{4}$ and $\frac{x-3}{1} = \frac{y-7}{2} = \frac{z-5}{-3}$ is (a) $\frac{\pi}{3}$ (b) $\frac{\pi}{2}$ (c) $\frac{\pi}{4}$ (d)$\frac{\pi}{6}$
83	The value of $tan^2(\sec^{-1} 2)+ cot^2(\text{cosec}^{-1} 3)$ is (a) 5 (b) 11 (c) 13 (d)15
84	If $3\sin^{-1} x + \cos^{-1} x = \pi$,then x is equal to (a) 0 (b) $\frac{1}{\sqrt{2}}$ (c) -1 (d)$\frac{1}{2}$
85	If $\sin^{-1} x + \sin^{-1} y + \sin^{-1} z = \frac{3\pi}{2}$,then the value of x + y^2 + z^3 is (a) 1 (b) 3 (c) 5 (d)2
86	If a matrix has 6 elements, then number of possible orders of the matrix can be (a) 2 (b) 4 (c) 3 (d)6
87	Total number of possible matrices of order 2 × 3 with each entry 1 or 0 is (a) 6 (b) 36 (c) 32 (d)64
88	If A = diag (3 , -1),then matrix A is (a) $\begin{bmatrix}0 & 3\\ 0 & -1\end{bmatrix}$ (b) $\begin{bmatrix}-1 & 0\\ 3 & 0\end{bmatrix}$ (c) $\begin{bmatrix}3 & 0\\ 0 & -1\end{bmatrix}$ (d)$\begin{bmatrix}3 & -1\\ 0 & 0\end{bmatrix}$
89	Let f(x) = $\begin{vmatrix} cosx & 2sinx & sinx \\ x & x & x \\ 1 & 2x & x \end{vmatrix}$,then $\lim_{x\to 0} \frac{f(x)}{x^2}$ is equal to (a) 0 (b) -1 (c) 3 (d)2
90	The derivative of sin x with respect to log x is (a) cos x (b) xcos x (c) $\frac{\cos x}{\log x}$ (d)$\frac{1}{x}$ cos x
91	The equation of the normal to the curve y = sin x at (0,0) is (a) x= 0 (b) y=0 (c) x + y =0 (d)x – y =0
92	The line y = x + 1 is a tangent to the curve y^2 = 4x at the point (a) (-1 , 2) (b) (1 , 2) (c) (1 ,-2) (d)(2 , 1)
93	The curves y = ae^{-x} and y = be^{x} are orthogonal if (a) a = b (b) a = -b (c) ab = -1 (d) ab = 1
94	The angle between the curves y^2 = x and x^2 = y at (1,1) is (a) 60° (b) 90° (c) $\tan^{-1}\left(\frac{4}{3}\right)$ (d)$\cot^{-1}\left(\frac{4}{3}\right)$
95	The absolute maximum value of y = x^3 – 3x + 2 in $0 \le x \le 2$ is (a) 4 (b) 6 (c) 2 (d) 0
96	If $\int 2^x\, dx$ = f(x) + C, then f(x) is (a) 2^x (b) $2^x \log_e 2$ (c) $\frac{2^x}{\log_e 2}$ (d)$\frac{2^{x+1}}{x+1}$

97	$\int cot^2$x dx equals to (a) cot x – x + C (b) cot x + x + C (c) - cot x – x + C(d) - cot x + x + C
98	$\int_0^{\frac{\pi}{2}} \frac{dx}{1+sin\ x}$ equals to (a) 0 (b) 1 (c)$\frac{1}{2}$ (d)$\frac{3}{2}$
99	The area of the region bounded by the curve y = $\sqrt{49 - x^2}$ and the x-axis is (a) $\frac{49\pi}{2}$sq. units (b) 98πsq. units (c) 49πsq. units (d)240π sq. units
100	Feasible region is the set of points which satisfy (a)the objective functions (b) some of the given constraints (c) all of the given constraints (d) none of these
101	If P(A∩B) = 70% and P(B) = 85% , then P(A|B) is equal to (a) $\frac{14}{17}$ (b) $\frac{17}{20}$ (c) $\frac{7}{8}$ (d) $\frac{1}{8}$