



You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	The suitable substitution for $\sqrt{x^2 - a^2}$ to be integrated:	$x = a \sin \theta$	$x = a \sec \theta$	$x = a \tan \theta$	$x = a \cos \theta$
2	$\int (ax + b)^n dx = :$	$\frac{(ax + b)^{n+1}}{a(n+1)} + c$	$\frac{(ax + b)^{n+1}}{b(n+1)} + c$	$\frac{(ax + b)^{n+1}}{a(n-1)} + c$	$\frac{a(ax + b)^{n+1}}{n+1} + c$
3	$\int \sqrt{1 - \cos 2x} dx = :$	$-\sqrt{2} \cos x + c$	$\sqrt{2} \sin x + c$	$\sqrt{2} \cos x + c$	$-\sqrt{2} \sin x + c$
4	$\int e^x \left(\frac{1}{x} + \ln x \right) dx = :$	$\frac{1}{x} e^x + c$	$e^x (\ln x) + c$	$\frac{e^x}{\ln x} + c$	$\frac{\ln x}{e^x} + c$
5	$\frac{d}{dx}(y^n) = :$	ny^{n-1}	ny^{n+1}	$ny^{n-1} \frac{dy}{dx}$	$ny^{n-1} \frac{dx}{dy}$
6	$\frac{d}{dx}(3^x) = :$	$3^x \ln 3$	3^x	$x 3^{x-1}$	3^{x+1}
7	If $f(x) = \frac{1}{x-1}$, then $f'(2) = :$	-1	1	0	2
8	$f(x) = -3x^2$ has maximum value at:	$x = -2$	$x = -1$	$x = 0$	$x = 1$
9	The function $f(x) = (x+2)^2$ is:	Even	Odd	Both A and B	Neither even nor odd
10	$\lim_{x \rightarrow 0} (1+3x)^{\frac{2}{x}} = :$	e^2	e^8	e^6	e^4
11	$(\underline{i} \times \underline{k}) \times \underline{j} = :$	$\underline{-1}$	$-\underline{j}$	0	\underline{i}
12	$ \cos \alpha \underline{i} + \sin \alpha \underline{j} + 0 \underline{k} = :$	0	1	2	-1
13	If $\underline{a} + \underline{b} + \underline{c} = 0$ then:	$\underline{a} \times \underline{b} \times \underline{c} = 0$	$\underline{a} \times \underline{b} = \underline{b} \times \underline{c} = \underline{c} \times \underline{a}$	$\underline{a} \cdot \underline{b} = \underline{b} \cdot \underline{c} = \underline{c} \cdot \underline{a}$	$\underline{a} = \underline{b} = \underline{c}$
14	Focus of the parabola $x^2 = -16y$ is:	(0, 4)	(0, -4)	(4, 0)	(-4, 0)
15	A circle is called a point circle if:	$r = 1$	$r = 0$	$r = 2$	$r = 3$
16	Eccentricity of ellipse is:	$e = 0$	$e > 1$	$0 < e < 1$	$e = 1$
17	The point (-1, 2) satisfies the inequality:	$x - y > 4$	$x - y \geq 4$	$x + y < 4$	$x + y > 5$
18	Equation of horizontal line through (7, -9) is:	$y = -9$	$y = 7$	$x = -9$	$x = 7$
19	If m_1 and m_2 are the slopes of two lines then lines are perpendicular if:	$m_1 m_2 = 0$	$m_1 m_2 + 1 = 0$	$m_1 m_2 + 2 = 0$	$m_1 = m_2$
20	Distance of point (1, -2) from y-axis is:	2	1	3	4