Q 1. What is the derivative of $1 + 2\cos x$ w.r.t. 'x'??
(a) $1 + 2\cos x$ (b) $-2\tan x$ (c) $1 - 2\sin x$ (d) $-2\sin x$

Q 2. Differentiate w.r.t. 'x' if $y = 3\sin x - 2$

(a) $\frac{dy}{dx} = 3$ (b) $\frac{dy}{dx} = 3\cos x$ (c) $\frac{dy}{dx} = 3\cos x - 2$ (d) $\frac{dy}{dx} = 3\sin x$

Q 3. Differentiate w.r.t. 'x' if $y = \cos x - 2x$

(a) $\frac{dy}{dx} = \cos x - 2$ (b) $\frac{dy}{dx} = \sin x - 2$ (c) $\frac{dy}{dx} = -\sin x - 2$ (d) None of these

Q 4. What is the derivative of constant?
(a) 1   (b) zero
(c) ∞   (d) cannot be determined

Q 5. Find the derivative of the function: $F(x) = 6x^3 - 9x + 4$, w.r.t. 'x':
(a) $F'(x) = 18x^2 + 9$ (b) $F'(x) = 6x^2 - 9x$
(c) $F'(x) = 18x^2 - 9$ (d) None of these

Q 6. Find the value of $\frac{dy}{dx}$ at x= 2, $y = \ln x^2$:

(a) 2   (b) 1   (c) $\frac{2}{x}$ (d) None of these

Q 7. Given $S = t^2 + 5t + 3$, find $\frac{dS}{dt}$

(a) $2t + 5 + \frac{3}{t}$ (b) $2t + 5$ (c) $2t$ (d) $t + 5$

Q 8. If $y = 3x^5 - 3x - \frac{1}{x}$, Find $\frac{dy}{dx}$?
(a) $15x^4 - 3 + \frac{2}{x^2}$ (b) $15x^4 + 3 + \frac{1}{x^2}$ (c) $15x^4 - 3 + \frac{1}{x^2}$ (d) $15x^4 - 3 - \frac{1}{x^2}$

Q 9. If $y = 6x^7 - 4x^5 + 5x^4 + 5x^2 - 40$, find $\frac{dy}{dx}$?
(a) $42x^6 - 20x^4 + 20x^3 + 5x - 40$
(b) $42x^6 - 20x^4 + 25x^3 + 5x$
(c) $42x^6 - 20x^4 + 20x^3 + 10x - 40$
(d) $42x^6 - 20x^4 + 20x^3 + 10x$

Q10. $y = \left(x + \dfrac{1}{x}\right)^2$, Find $\dfrac{dy}{dx}$?

(a) $\left(x + \dfrac{1}{x}\right)$
(b) $2x + \dfrac{1}{x^2}$
(c) $2x - \dfrac{1}{x^2}$
(d) $2x - \dfrac{2}{x^3}$

Q 11. Find the derivative of the function: $F(x) = 10\sqrt[5]{x^3} - \sqrt{x^7} + 6\sqrt[3]{x^8} - 3$, w.r.t. 'x':

(a) $F'(x) = 6x^{-\frac{2}{5}} - \dfrac{7}{2}x^{\frac{5}{2}} + 16x^{\frac{5}{3}}$
(b) $F'(x) = 10x^{-\frac{2}{5}} - \dfrac{1}{2}x^{\frac{5}{2}} + 6x^{\frac{5}{3}}$

(c) $F'(x) = 6x^{-\frac{5}{2}} - \dfrac{7}{2}x^{\frac{7}{2}} + 16x^{\frac{8}{3}}$
(d) None of these

Q 12. Differentiate w.r.t. 'x' if $y = 15\sin x - 2e^x - \dfrac{1}{2}x^2 + 5$

(a) $\dfrac{dy}{dx} = 15\cos x - 2xe^x - 2x$
(b) $\dfrac{dy}{dx} = 15\cos x - 2e^x - x$

(c) $\dfrac{dy}{dx} = 15\cos x - 2$
(d) $\dfrac{dy}{dx} = 15\sin x - 2e^x - 2x$

Q 13. Differentiate w.r.t. 'x' if $y = 2\ln x - 2x^2 - 3\cos x + 1$

(a) $\dfrac{dy}{dx} = 2e^x - 4x - 3\sin x$
(b) $\dfrac{dy}{dx} = \dfrac{2}{x} - 4x - 3\sin x$

(c) $\dfrac{dy}{dx} = 2e^x - 4x + 3\sin x$
(d) $\dfrac{dy}{dx} = \dfrac{2}{x} - 4x + 3\sin x$

Q 14. Differentiate w.r.t. 'x' if $y = x^{\frac{5}{2}} + \ln x + 2\sin x$

(a) $\dfrac{dy}{dx} = \dfrac{5}{2}x^{\frac{3}{2}} + \dfrac{1}{x} + 2\cos x$
(b) $\dfrac{dy}{dx} = \dfrac{5}{2}x^{\frac{3}{2}} - \dfrac{1}{x} - 2\cos x$

(c) $\dfrac{dy}{dx} = x^{\frac{3}{2}} + \dfrac{1}{x} + 2\cos x$
(d) $\dfrac{dy}{dx} = x^{\frac{3}{2}} + \dfrac{1}{x} - 2\cos x$

Q 15. Differentiate w.r.t. 'x' if $y = \sin x - \cos x + \ln\left(\dfrac{1}{x}\right)$

(a) $\dfrac{dy}{dx} = \cos x - \sin x + \dfrac{1}{x}$
(b) $\dfrac{dy}{dx} = \cos x + \sin x + \dfrac{1}{x}$

(c) $\dfrac{dy}{dx} = \cos x + \sin x - \dfrac{1}{x}$
(d) None of these

Answer Key

Q.1 d	Q.2 b	Q.3 c	Q.4 b	Q.5 c
Q.6 b	Q.7 b	Q.8 c	Q.9 d	Q.10 d
Q.11 a	Q.12 b	Q.13 d	Q.14 a	Q.15 c