



Video Solution on Website:-

<https://physicsaholics.com/home/courseDetails/36>

Video Solution on YouTube:-

<https://youtu.be/fHeqMPCzWMI>

Written Solution on Website:-

<https://physicsaholics.com/note/notesDetails/70>

- Q 1. x varies with time as: $x = (3t^2 - 2)$, then minimum value of x is:
(a) 2 (b) -2 (c) zero (d) $-\infty$
- Q 2. Maximum value of $y = 3 \sin x + 4 \cos x$ is:
(a) 5 (b) $\frac{5}{\sqrt{2}}$ (c) 1 (d) ∞
- Q 3. Function $y = x^3 - 2x + 1$ will have its maxima at ' x ' equal to:
(a) $\frac{2}{3}$ (b) $\sqrt{\frac{2}{3}}$ (c) $-\sqrt{\frac{2}{3}}$ (d) $\sqrt{\frac{3}{2}}$
- Q 4. Function $y = F(x)$ has its maxima value at $x = x_1$, then:
(a) $F'(x_1) > 0$ (b) $F'(x_1) < 0$
(c) $F''(x_1) > 0$ (d) $F''(x_1) < 0$
- Q 5. Number of minima for $y = \frac{x^3}{3} - 4x + 1$ are:
(a) 1 (b) 2
(c) 3 (d) zero
- Q 6. Let $f(x) = x^3 - 12x + 7$. Which of the following statement is correct?
(a) The graph of $y = f(x)$ has minimum, at $x = -2$
(b) The graph of $y = f(x)$ has maximum, at $x = 0$
(c) The graph of $y = f(x)$ has minimum, at $x = 2$
(d) None of these
- Q 7. Let $f(x) = \sin x + \sqrt{3} \cos x$. Which of the following statement is correct?
(a) The graph of $y = f(x)$ has minimum value $y = -1$
(b) The graph of $y = f(x)$ has maximum value $y = 1$
(c) The graph of $y = f(x)$ has minimum value $y = -2$
(d) None of these
- Q 8. What will be the maximum value of $y = 3 \sin x$ for interval $x \in [0, 2\pi]$?
(a) 3 (b) 1
(c) -3 (d) -1



- Q 9. What is true about the derivative of a function at a maximum or minimum point of the function?
- (a) The derivative is equal to zero.
(b) The derivative is always positive.
(c) The derivative is always negative.
(d) None of these are correct.
- Q 10. Suppose we found the point (3,19) to be a minimum point of the function f. What must be true about the second derivative of f evaluated at $x = 3$?
- (a) It must be less than zero
(b) It must be greater than zero
(c) It must be equal to zero
(d) None of these are correct
- Q11. $y = 2x^3 - 15x^2 + 36x + 10$ maxima of y is at
- (a) $x = 3$ (b) $x = 2$ (c) $x = 1$ (d) $x = 4$
- Q12. A string of length 40 m is used to make a rectangle. Find maximum possible area of rectangle ?
- (a) $100 m^2$ (b) $200 m^2$ (c) $400 m^2$ (d) $900 m^2$
- Q13. A function has maxima at $x = a$, then slope at $x = a$ is
- (a) increasing
(b) decreasing
(c) zero
(d) May increase, may decrease
- Q14. If $\frac{d^2y}{dx^2} = +ve$ at point A in graph then A
- (a) Must be maxima
(b) Must be minima
(c) May be minima
(d) None of these
- Q15. We have $128\pi m^3$ clay to make a solid cylinder. Radius of cylinder for minimum surface area is
- (a) 6m (b) 8m (c) 4m (d) 12m

Answer Key

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