

Subject: Engineering Mathematics

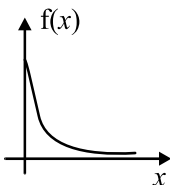
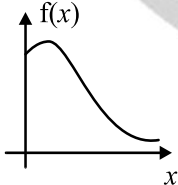
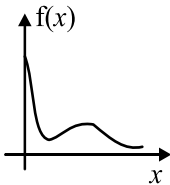
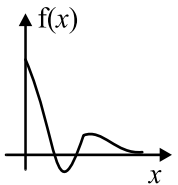
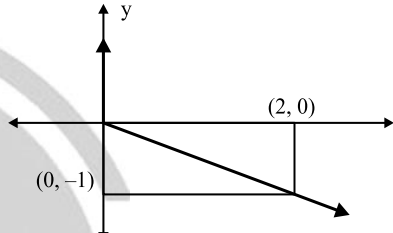
DPP-01

Chapter: Calculus

Topic : Function of Its Graph, Domain & Range of Function

1. What is the form of the function $f(x)$ for the following data?

x	0	1	2	3
$f(x)$	3	6	11	18

- (a) $x^2 + 2x + 3$ (b) $x^2 - 2x + 3$
 (c) $x^2 + 2x - 3$ (d) $x^2 - 2x - 3$
2. Which one of the following functions is strictly bounded?
 (a) $1/x^2$ (b) e^x
 (c) x^2 (d) e^{-x^2}
3. Which one of the following graphs describes the function $f(x) = e^{-x}(x^2 + x + 1)$?
- (a)  (b) 
- (c)  (d) 
4. Choose the most appropriate equation for the function drawn as a thick line, in the plot below.
- 
- (a) $x = y - |y|$ (b) $x = -(y - |y|)$
 (c) $x = y + |y|$ (d) $x = -(y + |y|)$
5. $f(x) = 2x^3 - 15x^2 + 36x + 1$ is increasing in the interval
 (a) $] 2, 3 [$ (b) $] -\infty, 3 [$
 (c) $] -\infty, 2 [\cup] 3, \infty [$ (d) None of these
6. $f(x) = x^9 + 3x^7 + 6$ is increasing for
 (a) All positive real values of x
 (b) All negative real values of x
 (c) All non-zero real values of x
 (d) None of these
7. $f(x) = x^2 e^{-x}$ is increasing in the interval
 (a) $] -\infty, \infty [$ (b) $] -2, 0 [$
 (c) $] 2, \infty [$ (d) $] 0, 2 [$
8. The least value of a for which $f(x) = x^2 + ax + 1$ is increasing on $] 1, 2 [$ is
 (a) 2 (b) -2
 (c) 1 (d) -1

Answer Key

1. (a)
2. (d)
3. (b)
4. (b)

5. (c)
6. (c)
7. (d)
8. (b)



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