LAKSHYA (JEE)

Relations and Functions

DPP-07

1. Domain and range of $f(x)=\frac{|x-3|}{x-3}$ are respectively

(A) $R,[-1,1]$ (B) $R-\{3\},\{1,-1\}$

(C) R^+, R (D) None of these

2. Domain of the function

$f(x)=\left[\log_{10}\left(\frac{5x-x^2}{4}\right)\right]^{1/2}$ is

(A) $-\infty<x<\infty$ (B) $1\le x\le 4$

(C) $4\le x\le 16$ (D) $-1\le x\le 1$

3. Domain of the function $f(x)=\sqrt{2-2x-x^2}$ is

(A) $-\sqrt{3}\le x\le\sqrt{3}$

(B) $-1-\sqrt{3}\le x\le -1+\sqrt{3}$

(C) $-2\le x\le 2$

(D) $-2+\sqrt{3}\le x\le -2-\sqrt{3}$

4. The range of the function $f(x)={}^{7-x}P_{x-3}$ is

(A) {1, 2, 3, 4, 5} (B) (1, 2, 3, 4, 5, 6)

(C) {1, 2, 3, 4} (D) {1, 2, 3}

5. The domain of the function $\sqrt{\log(x^2-6x+6)}$ is

(A) $(-\infty,\infty)$

(B) $(-\infty,3-\sqrt{3})\cup(3+\sqrt{3},\infty)$

(C) $(-\infty,1]\cup[5,\infty)$

(D) $[0,\infty)$

6. The domain of the function $f(x)=\exp(\sqrt{5x-3-2x^2})$

(A) $\left[1,-\frac{3}{2}\right]$ (B) $\left[\frac{3}{2},\infty\right]$

(C) $[-\infty,1]$ (D) $\left[1,\frac{3}{2}\right]$

7. Range of the function $f(x)=\frac{x^2+x+2}{x^2+x+1}; x\in R$ is

(A) $(1,\infty)$ (B) $(1,11/7]$

(C) $(1,7/3]$ (D) $(1,7/5]$

8. If $f(x)=a\cos(bx+c)+d$, then range of $f(x)$ is

(A) $[d+a, d+2a]$

(B) $[a-d, a+d]$

(C) $[d+a, a-d]$

(D) $[d-a, d+a]$

9. The range of $f(x)=\cos x-\sin x$ is

(A) $(-1,1)$ (B) $[-1,1)$

(C) $\left[-\frac{\pi}{2},\frac{\pi}{2}\right]$ (D) $[-\sqrt{2},\sqrt{2}]$

10. Range of the function $f(x)=9-7\sin x$ is

(A) (2, 16) (B) [2, 16]

(C) [–1, 1] (D) (2, 16]

ANSWERS

1. (B)
2. (B)
3. (B)
4. (D)
5. (C)
6. (D)
7. (C)
8. (D)
9. (D)
10. (B)

Note - If you have any query/issue

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