

# LAKSHYA (JEE)

## Relations and Functions

**DPP-08**

1.  $f: N \rightarrow N: f(x) = 2x$  is  
 (A) One-one and onto  
 (B) One-one and into  
 (C) many-one and onto  
 (D) many-one and into
2.  $f: N \rightarrow N: f(x) = x^2 + x + 1$  is  
 (A) One-one and onto  
 (B) One-one and into  
 (C) many-one and onto  
 (D) many-one and into
3.  $f: R \rightarrow R: f(x) = x^2$  is  
 (A) One-one and onto  
 (B) One-one and into  
 (C) many-one and onto  
 (D) many-one and into
4.  $f: R \rightarrow R: f(x) = x^3$  is  
 (A) One-one and onto  
 (B) One-one and into  
 (C) many-one and onto  
 (D) many-one and into
5.  $f: R^+ \rightarrow R^+: f(x) = e^x$  is  
 (A) many-one and into  
 (B) many-one and onto  
 (C) One-one and into  
 (D) One-one and onto
6.  $f: \left[ \frac{-\pi}{2}, \frac{\pi}{2} \right] \rightarrow [-1, 1]: f(x) = \sin x$  is  
 (A) One-one and into  
 (B) One-one and onto  
 (C) many-one and into  
 (D) many-one and onto
7.  $f: R \rightarrow R: f(x) = \cos x$  is  
 (A) One-one and into  
 (B) One-one and onto  
 (C) many-one and into  
 (D) many-one and onto
8.  $f: C \rightarrow R: f(z) = |z|$  is  
 (A) One-one and into  
 (B) One-one and onto  
 (C) many-one and into  
 (D) many-one and onto
9. Let  $A = R - \{3\}$  and  $B = R - \{1\}$ . Then,  
 $f: A \rightarrow B: f(x) = \frac{x-2}{x-3}$  is  
 (A) One-one and into  
 (B) One-one and onto  
 (C) many-one and into  
 (D) many-one and onto
10. Let  $f: N \rightarrow N$ :  

$$f(n) = \begin{cases} \frac{1}{2}(n+1), & \text{when } n \text{ is odd} \\ \frac{n}{2}, & \text{when } n \text{ is even;} \end{cases}$$
 Then,  $f$  is  
 (A) One-one and into  
 (B) One-one and onto  
 (C) many-one and into  
 (D) many-one and onto

## ANSWERS

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



**\*Note\*** - If you have any query/issue

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