

**Topics : Fundamentals of Mathematics, Complex Number, Points & Straight Lines**

Type of Questions		M.M., Min.
Single choice Objective (no negative marking) Q.1,	(3 marks, 3 min.)	[3, 3]
Multiple choice objective (no negative marking) Q.2,3	(5 marks, 4 min.)	[10, 8]
Fill in the Blanks (no negative marking) Q.4,5	(4 marks, 4 min.)	[8, 8]
Subjective Questions (no negative marking) Q.6	(4 marks, 5 min.)	[4, 5]

1. If  $(0.5)^\alpha > (0.5)^\beta$ , where  $\alpha, \beta \in \mathbb{R}$ , then  
 (A)  $\alpha > \beta$  (B)  $\alpha < \beta$   
 (C) only possibility  $\alpha = \beta = 0$  (D) depends upon sign of  $\alpha$  &  $\beta$
  
2. The simultaneous equations,  $y = x + 2|x|$  &  $y = 4 + x - |x|$  have the solution set given by:  
 (A)  $\left(\frac{4}{3}, \frac{4}{3}\right)$  (B)  $\left(4, \frac{4}{3}\right)$  (C)  $\left(-\frac{4}{3}, \frac{4}{3}\right)$  (D)  $\left(\frac{4}{3}, 4\right)$
  
3. If  $z = 1 + i$  then  $z^{10}$  reduces to :  
 (A) a purely imaginary number (B) an imaginary number  
 (C) a purely real number (D) a complex number
  
4. The point (11, 10) divides the line segment joining the points (5, -2) and (9, 6) in the ratio :  
 (A) 1 : 3 internally (B) 1 : 3 externally (C) 3 : 1 internally (D) 3 : 1 externally
  
5. The points (0, -1), (6, 7), (-2, 3), (8, 3) are the vertices of a rectangle. **[True / False]**
  
6. The point on y-axis equidistant from the points (2, 3) and (-4, 1) is.....



## Answers Key

1. (B)    2. (C)(D)    3. (A)(B)(D)    4. (D)
5. True    6.  $(0, -1)$

