MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 8

Total Marks : 40

Max. Time : 50 min.

Topic : Fundamentals of Mathematics

Type of Questions **M.M., Min.**

Short Subjective Questions (no negative marking) Q.1 to 10 **(4 marks, 5 min.)** **[40, 50]**

1. $\frac{x^2-7|x|+10}{x^2-6x+9} < 0$

2. $\frac{|x+3|+x}{x+2} > 1$

3. $\frac{|x+2|-x}{x} < 2$

4. $\frac{1}{|x|-3} < \frac{1}{2}$

5. $|x| - |x-2| \geq 1$

6. $|x^3 - 1| \geq 1 - x$

7. $\left|x^2 - 4x + 4\right| \geq 1$

8. $\left|\frac{3x}{x^2-4}\right| \leq 1$

9. $\left|\frac{x^2-5x+4}{x^2-4}\right| \leq 1$

10. $\frac{|x-3|}{x^2-5x+6} \geq 2$

Answers Key

1. $(-5, -2) \cup (2, 3) \cup (3, 5)$ **2.** $(-5, -2) \cup (-1, +\infty)$

3. $(-\infty, 0) \cup (1, +\infty)$

4. $(-\infty, -5) \cup (-3, 3) \cup (5, \infty)$ **5.** $x \in \left[\frac{3}{2}, \infty\right)$

6. $x \in (-\infty, -1] \cup [0, \infty)$ **7.** $x \in (-\infty, 1] \cup [3, \infty)$

8. $(-\infty, -4] \cup [-1, 1] \cup [4, +\infty)$

9. $[0, 8/5] \cup [5/2, +\infty)$ **10.** $[3/2, 2)$