MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 6

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 Q.10	**(4 marks, 5 min.)**	**[40, 50]**

1. $\frac{x^2-5x+6}{x^2+x+1} < 0.$

2. $\frac{x^2+4x+4}{2x^2-x-1} > 0.$

3. $\frac{5x-1}{x^2+3} < 1$

4. $\frac{x^4+x^2+1}{x^2-4x-5} < 0$

5. $\frac{x^2-1}{x^2+x+1} < 1$

6. $\frac{x^2-1}{2x+5} < 3$

7. $2 + \frac{3}{x+1} > \frac{2}{x}$

8. $\frac{x-1}{x} - \frac{x+1}{x-1} < 2$

9. $\frac{(x-1)(x-2)(x-3)}{(x+1)(x+2)(x+3)} > 1$

10. $\frac{(x-4)^{2005}.(x+8)^{2008}\,(x+1)}{x^{2006}(x-2)^3.(x+3)^5.(x-6)\,(x+9)^{2010}} \le 0$

Answers Key

1. $(2, 3)$ **2.** $(-\frac{n}{k}, -2) \cup (-2, -1/2) \cup (1, +\infty)$

3. $(-\infty, 1) \cup (4, +\infty)$ **4.** $(-1, 5)$ **5.** $(-2, +\infty)$

6. $(-\infty, -5/2) \cup (-2, 8)$

7. $(-\infty, -2) \cup (-1, 0) \cup (1/2, +\infty)$

8. $(-\infty, -1) \cup (0, 1/2) \cup (1, +\infty)$

9. $(-\infty, -3) \cup (-2, -1)$

10. $x \in (-\infty, -9) \cup (-9, -3) \cup [-1, 0) \cup (0, 2) \cup [4, 6)$