Prayas JEE 2026

Mathematics

Basic Maths

DPP: 6

Q1 Largest integral value of x satisfying:
$\frac{x^2-9}{(x-1)(x-6)} \leq 0$
(A) 5 (B) 3
(C) 4 (D) 6

Q2 Solution of $\frac{2x-x^2}{(3+x)(5-x)} < 0$ contains smallest negative integral value is:
(A) -3 (B) -2
(C) -1 (D) 0

Q3 Complete set of values of $'x'$:
$\frac{(x^2-11x+24)^{101}}{(x^2-10x+24)^{100}} \leq 0$
(A) $x \in [3,8]$
(B) $x \in [3,4) \cup (6,8]$
(C) $x \in [3,8] - \{4,6\}$
(D) $x \in (-\infty,3] \cup [8,\infty)$

Q4 The number of integral solution of $\frac{x+1}{x^2+2} > \frac{1}{4}$ is

Q5 Complete set of values of $'x'$ satisfying:
$\frac{(x-1)(x^2-x+12)}{(3+x^2)} \leq 0$
(A) $x \geq 1$
(B) $x \in (-\infty,-3] \cup (-\sqrt{3},1] \cup (\sqrt{3},4]$
(C) $x \in (-\infty,-3] \cup [1,4]$
(D) $x \leq 1$

Q6 Exhaustive set of values of 'x' satisfying:
$\left(\frac{x-x^2}{x^2+2x}\right) \geq 0$
(A) $x \in (-2,1]$
(B) $x \in [-2,-1]$
(C) $x \in (-2,1] - \{0\}$
(D) $x \in (-\infty,-2] \cup [1,\infty)$

Q7 Complete set of values of 'x' satisfying:
$\frac{(x-1)^{15}x^{28}}{(x+1)^{2021}(x+2)^{2020}} \geq 0$
(A) $x \in (-\infty,-1) \cup [1,\infty)$
(B) $x \in (-1,1] - \{0\}$
(C) $x \in (-\infty,-2] \cup (0,\infty)$
(D) $x \in (-\infty,-2) \cup (-2,-1) \cup [1,\infty) \cup \{0\}$

Q8 Values of x for which $(x^2-3)(x+1)$ is always negative:
(A) $x \in (-\infty,-\sqrt{3}) \cup (-1,\sqrt{3})$
(B) $x \in (-\sqrt{3},\sqrt{3})$
(C) $x \in R$
(D) $x \in (-\sqrt{3},-1) \cup (\sqrt{3},\infty)$

Q9 Number of positive integral pairs (a,b) such that $\frac{1}{a}+\frac{2}{b}=\frac{1}{3}$ is
(A) 4 (B) 8
(C) 6 (D) 12

Q10 If $x = \frac{4}{(\sqrt{5}+1)(\sqrt[4]{5}+1)(\sqrt[8]{5}+1)(\sqrt[16]{5}+1)}$. Then the value of $(1+x)^{48}$ is-
(A) 5 (B) 25
(C) 125 (D) 625

Answer Key

Q1	(A)	Q6	(C)
Q2	(B)	Q7	(D)
Q3	(C)	Q8	(A)
Q4	5	Q9	(C)
Q5	(D)	Q10	(C)

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