WT- 2025 | JINDAL SCHOOL, BARBIL | MM- 20

XI | APPLIED MATHEMATICS (041) | TIME- 1 hr

SECTION-A 1×5

(Answer all the question)

1. $(x+1, y-2) = (3,1)$ then x and y are
   $(a)\ x = 2, y = 2$ (b) $x = 2, y = 3$ (c) $x = 3, y = 2$ (d) $x = 3, y = 3$
2. If $n(A) = m$ then number of relations on A are
   (a) 2^{n-1} (b) 2^{n^2-1} (c) 2^n (d) 2^{n^2}
3. Which of the following is not a function
   (a) $\{(1,0), (2,0)\}$ (b)$\{(0,1), (0,2)\}$ (c) $\{(1,1), (2,2)\}$ (d) $\{(0,0), (1,2)\}$
4. Let A = {1} and B = {1, 3} then $A \times B$ is
   (a)$\{(1,3), (1,1)\}$ (b)$\{(1,1), (3,3)\}$ (c)$\{(1,3), (3,1)\}$ (d)$\{(1,3), (1,1)\}$
5. **Assertion (A):** Let $n(A) = 2$ and $n(B) = 1$ then $P(A \times B) = 4$
   Reason (R): Let $n(A) = p$ and $n(B) = q$ then $P(A \times B) = 2^{pq}$
   Then which of the following is true
   (a) Both Assertion (A) and Reason (R) are true and (R) is the correct explanation of Assertion (A).
   (b) Both Assertion (A) and Reason (R) but (R) is not the correct explanation of Assertion (A).
   (c) Assertion (A) is true but Reason (R) is false.
   (d) Assertion (A) is false but Reason (R) is true.

SECTION-B 2×2

(Answer all the question)

6. If $[x + 1] = 4$ then find values of x.
7. Solve for x and y, if (x – y, x + y) = (6, 10)

SECTION-C 3×2

(Answer all the question)

8. Find the domain and range of $f(x) = \sqrt{x^2 - 1}$
9. Let f and g be two functions given by
   f = {(2, 4), (5, 6), (8, – 1), (10, – 3)}
   g = {(2, 5), (7, 1), (8, 4), (10, 13), (11, – 5)}
   then find Domain of f + g.

SECTION-D 5×1

(Answer all the question)

10. If $[x]^2 - 5[x] + 6 = 0$, where, [.] denote the greatest integer function, then find values of x?