Visit QB365-SLMS - https://www.qb365.in/slms/ Complete Questions and Answers

Questions:

ANSWER ANY 4 QUESTIONS

1. Resolve into partial fractions for the following : $\frac{1}{(x-1)(x+2)^2}$
2. Resolve into partial fractions for the following : $\frac{1}{(x^2+4)(x+1)}$
3. Show that the middle term in the expansion of $(1 + x)^{2n}$ is $\frac{1.3.5....(2n-1)2^n.x^n}{n!}$
4. By the principle of mathematical induction, prove the following.
   $1.2 + 2.3 + 3.4 + ... + n(n + 1) = \frac{n(n+1)(n+2)}{3}$, for all $n \in N$.
5. By the principle of mathematical induction, prove the following.
   $a^n - b^n$ is divisible by a - b, for all $n \in N$.

ANSWER ANY 4 QUESTIONS

6. Evaluate the following using binomial theorem: $(101)^4$
7. Find the term independent of x in the expansion of $\left(x^2 - \frac{2}{3x}\right)^9$
8. If $nP_r = 1680$ and $nC_r = 70$, find n and r.
9. Find the Coefficient of x^{10} in the binomial expansion of $\left(2x^2 - \frac{3}{x}\right)^{11}$
10. If $nP_r = 720$; $nC_r = 120$, find r

ANSWER ANY 4 QUESTIONS

11. Resolve into partial fractions for the following : $\frac{4x+1}{(x-2)(x+1)}$
12. Find the rank of the word 'CHAT' in dictionary.
13. Evaluate the following : $\frac{7!}{6!}$
14. If a polygon has 44 diagonals, find the number of its sides.
15. Find n, if $\frac{1}{9!} + \frac{1}{10!} = \frac{n}{11!}$

Answer all questions

16. The value of n, when $nP_2 = 20$ is _____.
    (a) 3 (b) 6 (c) 5 (d) 4
17. If $nP_r = 720$ (nC_r), then r is equal to _____.
    (a) 4 (b) 5 (c) 6 (d) 7
18. The term containing x^3 in the expansion of $(x - 2y)^7$ is _____.
    (a) 3^{rd} (b) 4^{th} (c) 5^{th} (d) 6^{th}
19. The constant term in the expansion of $\left(x + \frac{2}{x}\right)^6$ is _____
    (a) 156 (b) 165 (c) 162 (d) 160
20. If $\frac{kx}{(x+4)(2x-1)} = \frac{4}{x+4} + \frac{1}{2x-1}$ then k is equal to _____.
    (a) 9 (b) 11 (c) 5 (d) 7
21. There are 10 true or false questions in an examination. Then these questions can be answered in _____.
    (a) 240 ways (b) 120 ways (c) 1024 ways (d) 100 ways
22. The number of ways to arrange the letters of the word "CHEESE" is _____.
    (a) 120 (b) 240 (c) 720 (d) 6
23. Number of words with or without meaning that can be formed using letters of the word "EQUATION" , with no repetition of letters is _____.
    (a) 7! (b) 3! (c) 8! (d) 5!
24. Sum of the binomial coefficients is _____.
    (a) 2^n (b) n^2 (c) 2n (d) n + 17
25. If $nC_{12} = nC_8$ then n =_____
    (a) 20 (b) 12 (c) 6 (d) 30