O.P. JINDAL SCHOOL, SAVITRI NAGAR

Periodic Test-3 (Round 1) 2025-2026

Class: XI Sci. **MM:20**

Subject: Mathematics **Time :1Hour**

General Instructions:

i) All questions are compulsory.

ii) Question no. 1 to 8 carries 1 mark each, question no. 9 to 11 carries 2 marks each, question no. 12 and 13 carries 3 marks each.

iii) There is no overall choice. However, internal choice has been provided.

SECTION A

1.) If ${}^{n}C_3 = 220$, then n = ?

a) 9 b) 10 c) 11 d) 12

2.) Three different rings are to be worn in 4 fingers . In how many ways this can be done?

a) 12 b) 24 c) 64 d) 81

3.) How many diagonals are there in an octagon ?

a) 28 b) 24 c) 20 d) 36

4.) How many 10 digits number can be formed by using the digits 1 and 2?

a) ${}^{10}P_2$ b) ${}^{10}C_2$ c) 2^{10} d) 10!

5.) If 4, x_1, x_2, x_3, 28 are in AP then x_3 = ?

a) 24 b) 22 c) 20 d) 16

6.) If $(1 + 6 + 11 + \ldots x) = 148$, then x = ?

a) 8 b) 48 c) 36 d) 54

7.) How many terms of the GP 2, 6, 18, . . . will make the sum 728?

a) 6 b) 9 c) 8 d) 7

8.) If the sum of n terms of a GP is $(2^n - 1)$ then its common ratio is

a) 2 b) 3 c) $\frac{1}{2}$ d) $-\frac{1}{2}$

SECTION B

9.) If (k -1), (2k + 1), (6k + 3) are in GP then find k .

10.) Find the number of ways in which 2 black and 3 red balls can be selected from a bag containing 5 black and 6 red balls.

OR

How many chords can be drawn through 21 points on the circle?

11.) a, b, c, d are in GP, prove that $(b + c)(b + d) = (c + a)(c + d)$.

SECTION C

12.) Find three numbers in GP whose sum is 65 and whose product is 3375 .

OR

If p^{th}, q^{th} and r^{th} terms of a GP are a, b and c respectively, then prove that $a^{q-r} b^{r-p} c^{p-q} = 1$.

13.) Find the number of different words that can be formed from the letter of the word 'TRIANGLE' so that vowels never comes together.

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