MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 22

Total Marks : 21

Max. Time : 21 min.

Topic : Sequence & Series

Type of Questions		**M.M., Min.**
Comprehension (no negative marking) Q.1 to Q.3	**(3 marks, 3 min.)**	**[9, 9]**
Single choice Objective (no negative marking) Q.4,5,6,7	**(3 marks, 3 min.)**	**[12, 12]**

COMPREHENSION (Q. No. 1 to 3)

Consider $S_n = \frac{8}{5} + \frac{16}{65} + ...+ \frac{8r}{4r^4+1}$

1. Sum of infinite terms of above series will be

(A) 0 (B) 1/2 (C) 2 (D) None of these

2. The value of S_{16} must be

(A) $\frac{80}{41}$ (B) $\frac{1088}{545}$ (C) $\frac{107}{245}$ (D) None of these

3. If $S_n = \frac{an^2+bn}{cn^3+dn^2+en+1}$ when a, b, c, d, e are independent of 'n', then

(A) a = 4, e = 2 (B) c = 0, d = 4 (C) b = 4, e = 4 (D) None of these

4. If $< a_n >$ and $< b_n >$ be two sequences, given by $a_n = x^{2^{-n}} + y^{2^{-n}}$; $b_n = x^{2^{-n}} - y^{2^{-n}}$ $\forall\ n \in N$, then value of $a_1 . a_2 . a_3 .....a_n$ is ?

(A) $\frac{x^2+y^2}{b_n}$ (B) $\frac{x-y}{b_n}$ (C) $\frac{x+y}{b_n}$ (D) $\frac{x^2-y^2}{b_n}$

5. The sum of first p-terms of a sequence is p(p + 1) (p + 2). The 10^{th} term of the sequence is

(A) 396 (B) 600 (C) 330 (D) 114

6. 50^{th} term of the squence 3 + 12 + 25 + 42 + ... is

(A) 5145 (B) 5148 (C) 5142 (D) 5195

7. If 2a + 3b + c = 3 ; a > 0, b > 0, c > 0, then the greatest value of $a^2 b^5 c^2$

(A) $\frac{5^5\ 2^2}{3^{23}}$ (B) $\frac{5^5 . 2^2}{3^{14}}$ (C) $\frac{4.5^5}{9^9}$ (D) $\frac{5^6 . 2^2}{3^4 . 9^{10}}$

Answers Key

1. (C) **2.** (B) **3.** (A) **4.** (B)

5. (C) **6.** (B) **7.** (B)