CLASS TEST-01
CHAPTER SEQUENCE & SERIES (D.O.E.-14/05/2026)
XI-A,B & D

MM- 10 **TIME-25 MIN**

(1) CASE STUDY- In a simulation , a computer virus spreads such that each infected computer infects 4 more computers every hour. If only one computer is initially infected, the spread is tracked for 6 hours.

Based on the above information, answer the following questions:
(i) What type of sequence represents the number of newly infected computers each hour? 1
(ii) How many computers will be infected at the end of the 6^{th} hour? 1
(iii) What is the total number of infected computers after 6 hours? 1
(iv) If the infection continues for 10 hours, how many computers will be infected in the 10^{th} hour alone? 1

MCQS-

(2) Consider the sequence: 1,1,2,3,5,8,13, ...
which of the following statements are true?
(i) The sequence is a Fibonacci sequence. (ii) Each term is the sum of the previous two terms.
(iii) The nth term is $a_n = a_{n-1} + a_{n-2}$. (iv) The sequence goes exponentially.

Choose the correct option from the following:
(a) only (iii) (b) (i) and (iii) only (c) (ii) and (iv) only (d) (i), (ii), (iii) & (iv)

(3) If $\log a, \log(ab), \log(ab^2), \log(ab^3), \ldots$ are in A. P. , then which of the following are correct?
(i) common difference $\log b$ (ii) 5th term $= \log ab^5$ (iii) 5th term $= \log ab^4$ (iv) 6th term $= \log ab^5$

Choose the correct option from the following:
(a) (i) and (ii) (b) (i), (iii) and (iv) (c) (ii) and (iv) (d) only (iii)

(4)The value of $2 \times 2^{\frac{1}{2}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{8}} \times \ldots . \infty$ is:
(a) 4 (b) $\sqrt{2}$ (c) $2\sqrt{2}$ (d) 8

(5) A: For $x = \pm 1$, the numbers $-\frac{2}{7}, x, -\frac{7}{2}$ are in G. P.
R: Three non $-$ zero numbers a, b, c are in G. P. if $b^2 = ac$
(i)Both A & *R are true and R is the correct explanation of A*
(ii) Both A & *R are true, but R is not the correct explanation of A*
(iii) A is true , but R is false.
(iv) A is false, but R is true.

(6) *If x is positive , find the sum to infinity of the series* $\frac{1}{1+x} - \frac{1-x}{(1+x)^2} + \frac{(1-x)^2}{(1+x)^3} - \frac{(1-x)^3}{(1+x)^4} + \cdots .$