

Class – XI

Lesson Plan

TOPIC: SEQUENCE AND SERIES

Brief Description: In this Chapter, besides discussing more about A.P, arithmetic mean, geometric mean, relationship between A.M. and G.M., special series in forms of sum to n terms of consecutive natural numbers, sum to n terms of squares of natural numbers and sum to n terms of cubes of natural numbers will also be studied

UN Sustainable Goals to be achieved (if any): Quality Education

Objectives: (put Bloom's level)

I - Specific Objectives

Students will be able to understand:

- ❖ Sequences and Series,
- ❖ Arithmetic Progression (A.P.)
- ❖ n^{th} term and sum of n terms of A.P.
- ❖ Geometric Progression (G.P.)
- ❖ A.M., G.M.
- ❖ Relationship between A.M. and G.M.
- ❖ n^{th} term and sum of n terms of G.P.
- ❖ Sum of infinite terms of G.P.
- ❖ Sum to n terms of Special Series

II - Behavioral Objectives

Students will observe following behavioral objectives after completion of topics, like:

1. Identify the general term (rules/1characteristics) of a sequence which further enable them to become systematic in problem solving of real life.
2. Make a definite rule to be followed in particular situations/ circumstances by their previous experiences or trends set by the predecessors.

Process / Activities:

Activity (to introduce the lesson)

For introducing the chapter (Sequence and Series), students will be asked to:

Random pattern will be given and students will be asked to find general term.

Activity (to support learning)

To write the sample space, when a coin is tossed once, two times, three times, four times.

Skills (as per subject)

- ❖ Systematic in problem solving of real life
- ❖ Observation
- ❖ Understanding
- ❖ Problem solving

Exercise for Notebook (put Bloom's level)

- ❖ Glossary
- ❖ R.T.C (Reference to Context)
- ❖ Typology of questions
- ❖ Value based question

Expected Learning Outcomes

Students would be able to learn:

- ❖ Sequences and Series,
- ❖ Arithmetic Progression (A.P.)
- ❖ n^{th} term and sum of n terms of A.P.
- ❖ Geometric Progression (G.P.)
- ❖ A.M., G.M.
- ❖ Relationship between A.M. and G.M.
- ❖ n^{th} term and sum of n terms of G.P.
- ❖ Sum of infinite terms of G.P.
- ❖ Sum to n terms of Special Series
- ❖ Systematic in problem solving of real life

Assessment: (put Bloom's level)

Q.1 Find the indicated terms $a_{n=4n-3}$. Find a_{17} and a_{12} (PS)

Q2. Find the sum of odd integers from 1 to 2001. (US)

Q3. The sums of n terms of two arithmetic progressions are in the ratio $(5n + 4) : (9n + 6)$. Find the ratio of their 18^{th} terms. (MS)

Q4. A man starts repaying a loan as first instalment of Rs. 100. If he increases the installment by Rs 5 every month, what amount he will pay in the 30^{th} instalment? (R)

Q5. The number of bacteria in a certain culture doubles every hour. If there were 30 bacteria present in the culture originally, how many bacteria will be present at the end of 2^{nd} hour, 4^{th} hour and n^{th} hours (AEL)

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