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| **Question 1 Arithmetic Progression**  A sequence for which the recurrence relation is of the form  ***Un+1 = Un + d***,  where d is a constant, is known as an arithmetic progression  True  False  Correct Answer = T | **Question 2 Fibonacci Sequence**  What is the next term in the Fibonacci Sequence?  1,1,2,3,5,8,  10,  11,  12,13 |
| Question 3  Geometric Progression  A sequence for which the recurrence relation is of the form  u\_{n+1} = u\_n + d , , is known as a geometric progression  True  False  Correct Answer = T | **Question 4**  determine the next term in the geometric progression  9,3,1,1/3,1/9  1/3  1/27  1/9  1/6  correct Asnwer : b |
| **Question 5**  Recurrence Relation | **Question 6**  Identify the first four terms in the sequence defined by the recurrence relations  ***Un+1 = Un + 4***  a)  b)  c)  d) |
| **Question 7**  Identify the fifth term in the sequence defined by the recurrence relation:  ***Un+1 = Un +2n*** | **Question 8**  Evaluate the following expression  3  n  3n  answer Is not determinable |
| **Question 9**  Evaluate the following expression | **Question 10**  The terms of a sequence are defined by a formula  ***Uk = 6k-1***  What value of k gives thet which equals 2999 |
| **Question 11 Three steps of proof by induction**  1) Base case  2) Induction hypothesis  3) Induction step  TRUE | **Question 12 Series**    Evaluate the series for r = 3  A) 11  B) 20  C) 21  D) 36  Correct answer 21 |
| Question 13  Sigma Notation | **Question 14**  Suppose we have to compute as summation of the form (i.e. the lower bound is m rather than 1).  we would use the following identity  Feedback : No. The upper limit in the last term is inappropriate for this summation |
| Question 15  Sigma Lower and Upper limits of summation | Question 16  Sigma Notation page 29 Q4a |
| Question 17 | Question 18 |
| Question 19  Taking out a common factor | Question 20  The formula for the sum of the first n square numbers is    Evaluate the following expression: |