

- Q.1 Insert 6 numbers between – 6 and 29 such that the resulting sequence is an A.P. (3 marks)
- Q.2 Find the sum of the series : $3 + 8 + 13 + \dots + 33$
- Q.3 Find the sum of odd integer from 1 to 21.
- Q.4 Find the sum to n terms of the A.P., whose k^{th} term is $5k + 1$. (3 marks)
- Q.5 If $A_1, A_2, A_3, \dots, A_n$ are n arithmetic means between a and b. Find the common difference between the terms. (2 marks)
- Q.6 If the sum of n terms of an A.P. is $2mn + pn^2$, where m and p are constants, find the common difference. (3 marks)
- Q.7 The ratio of the sums of m and n terms of an A.P. is $m^2 : n^2$. Show that the ratio of m^{th} and n^{th} term is $(2m - 1) : (2n - 1)$. (3 marks)
- Q.8 Find the sum to n terms of the A.P., whose k^{th} term is $5k + 1$. (3 marks)
- Q.9 Show that the sequence $n^2 - 3$ is not an A.P. (1 mark)
- Q.10 Find the sum to n terms of the series $1 \times 2 + 2 \times 3 + 3 \times 4 + 4 \times 5 + \dots$ (3 marks)
- Q.11 What is the value of : $1^2 + 2^2 + 3^2 + \dots + 8^2$?
- Q.12 Find the sum of the series : $2 + 6 + 18 + \dots + 486$
- Q.13 Find the value of n so that $\frac{a^{n+1} + b^{n+1}}{a^n + b^n}$ may be the geometric mean between a and b. (3 marks)
- Q.14 What is the 20th term of the sequence, defined by $a_n = (n-1)(2-n)(3+n)$?
- Q.15 Write the 16th term of the sequence defined by $a_n = n^2 - n + 1$. (1 mark)
- Q.16 Find the value of n so that $\frac{a^{n+1} + b^{n+1}}{a^n + b^n}$ may be the geometric mean between a and b.
- Q.17 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 2nd hour, 4th hour and nth hour? (3 marks)
- Q.18 If the p^{th} , q^{th} and r^{th} terms of a G.P. are a, b and c, respectively. Prove that a^{q-r}, b^{r-p} and $c^{p-q} = 1$. (3 marks)
- Q.19 If the fourth term of a G.P. is 3. Find the product of first 7 terms. (3 marks)
- Q.20 Find the arithmetic mean of 6 and 12. (1 mark)