

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 16 th 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 2 nd hour, 4 th hour and n th 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)