INTERNATIONAL INDIAN SCHOOL BURAIDAH
Worksheet 2025-26
CLASS: X
SUBJECT: MATH EMATICS
Chapter No:5 – Aritmetic Progressions

MCQ:

1-If k, 2k-1 and 2k+1 are three consecutive terms of an AP,then the value of k is:
(a) 2 (b) -3 (c) 3 (d) 5

2-The Sum of first 20 odd natural numbers is :
(a) 100 (b) 210 (c) 400 (d) 420

3-If the n^{th} term of an AP is (2n+1),then sum of its first three term is:
(a) 6 (b) 15 (c) 12 (d) 21

4-The next term of the AP: √8, √18, √32….is

(a) 5√2 (b) 5√3 (c) 3√3 (d) 3√5

5-A man receives Rs. 60 for the first week and Rs. 3 more each week than the preceding week. How much does he earn by the 20th week?

(a) Rs. 1760 (b) Rs. 1770 (c) Rs. 1780 (d) Rs. 1790

6-The missing terms in AP: __, 13, __, 3 are:

(a) 11 and 9 (b) 17 and 9 (c) 18 and 8 (d) 18 and 9

7-If 17th term of an A.P. exceeds its 10th term by 7. The common difference is:

(a) 1 (b) 2 (c) 3 (d) 4

8-If common difference of an AP. Is 3, then , a_{20}- a_{15}

(a) 8 (b) -8 (c) -4 (d) 4

9-The n^{th} term of an AP. a , 3a , 5a , ……is :

(a) na (b) (2n+1)a (c) (2n-1) (d) 2na

10-The common difference of the AP $\frac{1}{2q}$, $\frac{1-2q}{2q}$, $\frac{1-4q}{2q}$, ……is:

(a) -1 (b) 1 (c) q (d) 2q

<u>Assertion and reasoning :</u>

1-Assertion: Sum of natural number from 1 to 100 is 5050
Reason: Sum of n natural number is n(n+1)/2
(a)Both Assertion and Reason are correct and Reason is the correct explanation for Assertion

(b)Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.

(c) Assertion is true but the reason is false.

(d) Both assertion and reason are false.

2-Assertion : -5 , $\frac{-5}{2}$, 0 , $\frac{5}{2}$ ……is an Arithmetic progression.

Reason : The terms of an AP cannot have both positive and negative rational numbers

(a)Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.

(b)Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.

(c) Assertion is true but the reason is false.

(d) Both assertion and reason are false.

Subjective Questions:

1-Which term of the following A.P. 27, 24, 21, ... is zero ?

2-If the first term of an A.P. is p and the common difference is q, then find its 10th term.

3- Find the 12^{th} term from the end of the AP: –2, – 4, – 6, , – 100

4-The 4^{th} term of an AP is zero. Prove that the 25^{th} term is three times its 11^{th}term.

5-The sum of the 5^{th} and 7^{th} terms of an AP is 52 and the 10^{th} term is 46. Find the AP.

6-An AP consists of 50 terms of which 3^{rd} term is 12 and the last term is 106. Find the 29^{th} term.

7-Which term of the AP: 115, 110, 105,..... is its first negative term?

8-If m times the m^{th} term of an Arithmetic Progression is equal to n times its n^{th} term and m ≠ n, show that the $(m + n)^{th}$ term of the AP is zero.

9-The sum of the 4^{th} and 8^{th} terms of an AP is 24 and the sum of the 6^{th} and 10^{th} terms is 44. Find the first three terms of the AP.

10-Which term of the A.P. 8, 14, 20, 26,.....will be 72 more than its 41^{st} term.

11-How many two digit numbers are divisible by 7 ?

12-Find the middle term of the A.P. 213, 205, 197,.....37

13-If the sum of the first n terms of an AP is $\frac{1}{2}[3n^2 + 7n]$, then find its nth term.

Hence write its 20^{th} term.

14-The sum of the 5^{th} and 9^{th} term of an AP is 30.If its 25^{th} term is three times the 8^{th} Term , find the AP.

15-The sum of the first three terms of an AP is 48.If the product of the first and second term exceeds four times the third term by 12 ,Find the AP.

16-In a given AP,if the p^{th}term is q and the q^{th} term is p, then show that the n^{th} term is (p+q-n).

17-If the sum of m terms of an AP is the same as the sum of its n terms, show that the sum of its (m + n) terms is zero.

18-Find the sum of the integers between 100 and 200 that are

(a) divisible by 9 (b) not divisible by 9

19-The sum of first 7 terms of an Apis 49 and the sum of the first term is 289.Find the sum of first n terms.

20-Find the value of

5 + (-41) +9+ (-39) + 13 + (-37) + 17+…….. + (-5) +81 + (-3).

Case study Problem:

1-The production of TV sets in a factory increases uniformly by a fixed number every year.It produced 16000 sets in 6^{th} year and 22600 in 9^{th} year.

(i) What is the production during first year?

(ii)Find the production during 8^{th} year

(iii)Find the production during first 3 years is :

(iv)In which year the production **is 29,200**

2-Thomas wants to buy a car and plans to take loan from a bank for his car. He repays his total loan of Rs 1,18,000 by paying every month starting with the first instalment of Rs 1000. If he increases the instalment by Rs 100 every month , answer the following:

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(i)Find the amount paid by him in 30th instalment.

(ii) Find the total amount paid by him after 30 instalments.

(iii) If total installments are 40 then amount paid in the last installment?

3-Veer wants to participate in a 200 m race. Presently, he can run 200 m in 51 seconds and during each day practice it takes him 2 seconds less. He wants to do in 31 seconds.

(i). Form an A P for the given situation and find out the minimum number of days he needs to practice before the day his goal is achieved?

(ii)Find the n^{th} term of the A P.