

MATHEMATICS**CLASS -10****Chapter – 5 ARITHMETIC PROGRESSION****“WORKSHEET - 1”***Practice Multiple Choice Questions (50 Questions with Answer Key)*

Q1. In an Arithmetic Progression, if $d = -4$, $n = 7$, $a_n = 4$, then a is:

- (a) 6 (b) 7
(c) 20 (d) 28

Q2. In an AP, if $a = 3.5$, $d = 0$, $n = 101$, then a_n will be:

- (a) 0 (b) 3.5
(c) 103.5 (d) 101

Q3. The list of numbers -10, -6, -2, 2, ... is:

- (a) an AP with $d = -16$ (b) an AP with $d = 4$
(c) an AP with $d = -4$ (d) not an AP

Q4. The 11th term of the AP -3, $-1/2$, 2, ... is:

- (a) 28 (b) 22
(c) -38 (d) -46.5

Q5. The 21st term of the AP whose first two terms are -3 and 4 is:

- (a) 17 (b) 137
(c) 143 (d) -143

Q6. If the 2nd term of an AP is 13 and the 5th term is 25, what is its 7th term?

- (a) 30 (b) 33
(c) 37 (d) 38

Q7. Which term of the AP 21, 42, 63, 84, ... is 210?

- (a) 9th (b) 10th
(c) 11th (d) 12th

Q8. If the common difference of an AP is 5, then what is $a_{18} - a_{13}$?

- (a) 5 (b) 20
(c) 25 (d) 30

Q9. What is the common difference of an AP in which $a_{18} - a_{14} = 32$?

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

Q10. Two APs have the same common difference. The first term of one of these is -1 and that of the other is -8. Then the difference between their 4th terms is:

- (a) -1 (b) -8
(c) 7 (d) -9

Q11. If 7 times the 7th term of an AP is equal to 11 times its 11th term, then its 18th term will be:

- (a) 7 (b) 11
(c) 18 (d) 0

Q12. The 4th term from the end of the AP -11, -8, -5, ..., 49 is:

- (a) 37 (b) 40
(c) 43 (d) 58

Q13. If the first term of an AP is -5 and the common difference is 2, then the sum of the first 6 terms is:

- (a) 0 (b) 5
(c) 6 (d) 15

Q14. The sum of first 16 terms of the AP 10, 6, 2, ... is:

- (a) -320 (b) 320
(c) -352 (d) -400

Q15. In an AP if $a = 1$, $a_n = 20$ and $S_n = 399$, then n is:

- (a) 19 (b) 21
(c) 38 (d) 42

Q16. The sum of first 100 positive integers is:

- (a) 5050 (b) 5005
(c) 5000 (d) 5055

Q17. If the sum of first n terms of an AP is $3n^2 + 5n$, then its 15th term is:

- (a) 83 (b) 92
(c) 98 (d) 104

Q18. The n -th term of an AP is given by $a_n = 3 + 4n$. The common difference is:

- (a) 7 (b) 3
(c) 4 (d) 1

Q19. If a, b, c are in AP, then $(b - a) / (c - b)$ is equal to:

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

Q20. The sum of all two-digit odd numbers is:

- (a) 2475 (b) 2530
(c) 2405 (d) 2600

Q21. If the first, second and last terms of an AP are $a, b, 2a$ respectively, then its sum is:

- (a) $ab / 2(b - a)$ (b) $3ab / 2(b - a)$
(c) $3ab / (b - a)$ (d) $ab / (b - a)$

Q22. If $k, 2k - 1$ and $2k + 1$ are three consecutive terms of an AP, the value of k is:

- (a) 2 (b) 3
(c) -3 (d) 5

Q23. The famous mathematician associated with finding the sum of the first 100 natural numbers is:

- (a) Pythagoras (b) Newton
(c) Gauss (d) Euclid

Q24. The sum of first n terms of an AP whose n -th term is $a_n = 5 - 2n$ is:

- (a) $n(4 - n)$ (b) $n(5 - n)$
(c) $n(6 - n)$ (d) $2n(5 - n)$

Q25. The middle term of the AP 6, 13, 20, ..., 216 is:

- (a) 111 (b) 104
(c) 118 (d) 125

Q26. How many terms of the AP 9, 17, 25, ... must be taken to give a sum of 636?

- (a) 10 (b) 12
(c) 14 (d) 16

Q27. The sum of first n odd natural numbers is:

- (a) $2n - 1$ (b) $2n + 1$
(c) n^2 (d) $n^2 - 1$

Q28. The sum of first n even natural numbers is:

- (a) n^2 (b) $n(n + 1)$
(c) $n(n - 1)$ (d) $2n^2$

Q29. If 18, a , b , -3 are in AP, then $a + b =$

- (a) 7 (b) 11
(c) 15 (d) 19

Q30. Which term of the AP 3, 15, 27, 39, ... will be 132 more than its 54th term?

- (a) 64th (b) 65th
(c) 66th (d) 67th

Q31. If the sum of first p terms of an AP is q and sum of first q terms is p , then sum of first $(p + q)$ terms is:

- (a) $p + q$ (b) $-(p + q)$
(c) $p - q$ (d) 0

Q32. The 10th term of the AP $\sqrt{2}$, $\sqrt{8}$, $\sqrt{18}$, $\sqrt{32}$, ... is:

- (a) $\sqrt{160}$ (b) $\sqrt{200}$
(c) $\sqrt{180}$ (d) $\sqrt{242}$

Q33. If the n -th term of an AP is $(2n + 1)$, then the sum of its first three terms is:

- (a) 6 (b) 15
(c) 12 (d) 21

Q34. The common difference of the AP $1/p$, $(1-p)/p$, $(1-2p)/p$, ... is:

- (a) p (b) $-p$
(c) -1 (d) 1

Q35. How many two-digit numbers are divisible by 3?

- (a) 25 (b) 30
(c) 32 (d) 35

Q36. If the p -th term of an AP is q and q -th term is p , then its n -th term is:

- (a) $p + q - n$ (b) $p + q + n$
(c) $p - q + n$ (d) $q - p + n$

Q37. If S_n denotes the sum of first n terms of an AP, then $S_n - S_{(n-1)}$ is equal to:

- (a) a_n (b) d
(c) a_1 (d) $2a_n$

Q38. In an AP, if $a = 5$, $d = 3$, $a_n = 50$, then n is equal to:

- (a) 14 (b) 15
(c) 16 (d) 17

Q39. If the common difference of an AP is negative, then the AP is:

- (a) Increasing (b) Decreasing
(c) Constant (d) Fluctuating

Q40. The sum of all three-digit natural numbers which are multiples of 7 is:

- (a) 65336 (b) 70336
(c) 66430 (d) 56420

Q41. If $\frac{4}{5}$, a , 2 are three consecutive terms of an AP, then the value of a is:

- (a) $\frac{7}{5}$ (b) $\frac{9}{5}$
(c) $\frac{6}{5}$ (d) $\frac{1}{5}$

Q42. The total number of terms in the AP 7, 13, 19, ..., 205 is:

- (a) 33 (b) 34
(c) 35 (d) 36

Q43. If the sum of n terms of an AP is $S_n = cn^2$, then the common difference is:

- (a) c (b) $2c$
(c) $3c$ (d) $4c$

Q44. The 7th term of an AP is -4 and its 13th term is -16 . The AP is:

- (a) 8, 6, 4, 2, ... (b) -8, -6, -4, ...
(c) 10, 8, 6, 4, ... (d) 4, 2, 0, -2, ...

Q45. Which of the following forms an AP?

- (a) 1, 3, 9, 27, ... (b) $a, a^2, a^3, a^4, \dots$
(c) $\sqrt{3}, \sqrt{6}, \sqrt{9}, \sqrt{12}, \dots$ (d) $1^2, 5^2, 7^2, 73, \dots$

Q46. If the first term of an AP is 2 and common difference is 4, then the sum of its first 40 terms is:

- (a) 3200 (b) 1600
(c) 2000 (d) 3240

Q47. The 8th term of the AP 17, 14, 11, 8, ... is:

- (a) -4 (b) -7
(c) -10 (d) 4

Q48. If x, y, z are in AP, then y is called the:

- (a) Arithmetic Mean (b) Geometric Mean
(c) Harmonic Mean (d) Common Ratio

Q49. If the ratio of the sum of first n terms of two APs is $(7n + 1) : (4n + 27)$, then the ratio of their 11th terms is:

- (a) 2 : 3 (b) 4 : 3
(c) 3 : 4 (d) 5 : 6

Q50. First term of an AP is 5, last term is 45 and sum is 400. The common difference d is:

- (a) $7/3$ (b) $8/3$
(c) 3 (d) 4

ANSWER KEY & SOLUTIONS GUIDE

Q.No - Ans	Q.No - Ans	Q.No - Ans	Q.No - Ans	Q.No - Ans
Q1: (d) 28	Q11: (d) 0	Q21: (b) $3ab / 2(b - a)$	Q31: (b) $-(p + q)$	Q41: (a) $7/5$
Q2: (b) 3.5	Q12: (b) 40	Q22: (b) 3	Q32: (b) $\sqrt{200}$	Q42: (b) 34
Q3: (b) an AP with $d = 4$	Q13: (a) 0	Q23: (c) Gauss	Q33: (b) 15	Q43: (b) $2c$
Q4: (b) 22	Q14: (a) -320	Q24: (a) $n(4 - n)$	Q34: (c) -1	Q44: (a) 8, 6, 4, 2, ...
Q5: (b) 137	Q15: (c) 38	Q25: (a) 111	Q35: (b) 30	Q45: (d) $1^2, 5^2, 7^2, 73, \dots$
Q6: (b) 33	Q16: (a) 5050	Q26: (b) 12	Q36: (a) $p + q - n$	Q46: (a) 3200
Q7: (b) 10th	Q17: (b) 92	Q27: (c) n^2	Q37: (a) a_n	Q47: (a) -4
Q8: (c) 25	Q18: (c) 4	Q28: (b) $n(n + 1)$	Q38: (c) 16	Q48: (a) Arithmetic Mean
Q9: (a) 8	Q19: (a) 1	Q29: (c) 15	Q39: (b) Decreasing	Q49: (b) $4 : 3$
Q10: (c) 7	Q20: (a) 2475	Q30: (b) 65th	Q40: (c) 66430	Q50: (b) $8/3$