

CHAPTER-5

ARITHMETIC PROGRESSIONS

QUESTION BANK

1. If $p - 1$, $p + 3$, $3p - 1$ are in AP, then p is equal to (a) 4 (b) -4 (c) 2 (d) -2
2. The sum of all terms of the arithmetic progression having ten terms except for the first term is 99 and except for the sixth term 89. Find the third term of the progression if the sum of the first term and the fifth term is equal to 10
(a) 15 (b) 5 (c) 8 (d) 10
3. If in any decreasing arithmetic progression, sum of all its terms, except the first term is equal to -36 , the sum of all its terms, except for the last term is zero and the difference of the tenth and the sixth term is equal to -16 , then first term of the series is
(a) 15 (b) 14 (c) 16 (d) 17
4. If the third term of an AP is 12 and the seventh term is 24, then the 10th term is (a) 33 (b) 34 (c) 35 (d) 36
5. The first term of an arithmetic progression is unity and the common difference is 4. Which of the following will be a term of this AP ?
(a) 4551 (b) 10091 (c) 7881 (d) 13531
6. A number 15 is divided into three parts which are in AP and sum of their squares is 83. The smallest part is
(a) 2 (b) 5 (c) 3 (d) 6
7. How many terms of an AP must be taken for their sum to be equal to 120 if its third term is 9 and the difference between the seventh and second term is 20 ?
(a) 7 (b) 8 (c) 9 (d) 6
8. 9th term of an AP is 499 and 499th term is 9. The term which is equal to zero is (a) 507th (b) 508th (c) 509th (d) 510th
9. The sum of all two digit numbers which when divided by 4 yield unity as remainder is (a) 1012 (b) 1201 (c) 1212 (d) 1210
10. An AP consist of 31 terms if its 16th term is m , then sum of all the terms of this AP is (a) $16m$ (b) $47m$ (c) $31m$ (d) $52m$
11. If a clock strikes once at one O'clock, twice at two O'clock, thrice at 3 O'clock and so on and again once at one O'clock and so on, then how many times will the bell be struck in the course of 2 days ?
(a) 156 (b) 312 (c) 78 (d) 288

12. In a certain AP, 5 times the 5th term is equal to 8 times the 8th term, then its 13th term is equal to
 (a) 5 (b) 1 (c) 0 (d) 13
13. The sum of 5 numbers in AP is 30 and sum of their squares is 220. Which of the following is the third term?
 (a) 5 (b) 6 (c) 7 (d) 8
14. If a, b, c, d, e and f are in AP, then $e - c$ is equal to
 (a) $2(c - a)$ (b) $2(f - d)$ (c) $2(d - c)$ (d) $d - c$
15. The sum of n terms of the series 2, 5, 8, 11, is 60100, then n is
 (a) 100 (b) 150 (c) 200 (d) 250
16. The value of the expression $1 - 6 + 2 - 7 + 3 - 8 + \dots$ to 100 terms
 (a) -225 (b) -250 (c) -300 (d) -350
17. Four numbers are inserted between the numbers 4 and 39 such that an AP results. Find the biggest of these four numbers
 (a) 30 (b) 31 (c) 32 (d) 33
18. The sum of the first ten terms of an AP is four times the sum of the first five terms, then the ratio of the first term to the common difference is
 (a) $1/2$ (b) 2 (c) $1/4$ (d) 4
19. Two persons Anil and Happy joined D. W. Associates. Anil and Happy started with an initial salary of Rs. 50000 and Rs. 64000 respectively with annual increment of Rs. 2500 and Rs. 2000 each respectively. In which year will Anil start earning more salary than Happy?
 (a) 28th (b) 29th (c) 30th (d) 27th
20. 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
21. Find 10th term whose 5th term is 24 and difference between 7th term and 10th term is 15
 (a) 34 (b) 39 (c) 44 (d) 49
22. Find the sum of first n terms of odd natural number.
 (a) n^2 (b) $n^2 - 1$ (c) $n^2 + 1$ (d) $2n - 1$
23. Common difference of an A.P. is -2 and first term is 80. Find the sum if last term is 10.
 (a) 1600 (b) 1620 (c) 1650 (d) 1700
24. Find the sum of first 30 terms of an A. P. whose n^{th} term is $2 + \frac{1}{2}n$
 (a) 292.5 (b) 290.5 (c) 192.5 (d) none of these
25. Find 15th term of -10, -5, 0, 5, -----
 (a) 55 (b) 60 (c) 65 (d) none of these

26. If the numbers a, b, c, d, e form an AP, then the value of $a - 4b + 6c - 4d + e$ is

- (a) 1 (b) 2 (c) 0 (d) none of these

27. 7th term of an AP is 40. The sum of its first 13th

- terms is (a) 500 (b) 510 (c) 520
(d) 530

28. The sum of the first four terms of an AP is 28 and sum of the first eight terms of the same AP is 88. Sum of first 16 terms of the AP is

- (a) 346 (b) 340 (c) 304 (d) 268

29. Which term of the AP 4, 9, 14, 19, is 109?

- (a) 14th (b) 18th (c) 22nd (d) 16th

30. How many terms are there in the arithmetic series $1 + 3 + 5 + \dots + 73 + 75$?

- (a) 28 (b) 30 (c) 36 (d) 38

31. $51 + 52 + 53 + 54 + \dots + 100 = ?$

- (a) 3775 (b) 4025 (c) 4275 (d) 5050

32. How many natural numbers between 1 and 1000 are divisible by 5? (a) 197 (b) 198 (c) 199 (d) 200

33. If $a, a - 2$ and $3a$ are in AP, then the value of a is (a) -3 (b) -2 (c) 3

- (d) 2

34. How many terms are there in the AP 7, 10, 13,, 151? (a) 50 (b) 55 (c) 45 (d) 49

35. The 4th term of an AP is 14 and its 12th term is 70. What is its first term? (a) -10 (b) -7 (c) 7 (d) 10

36. The first term of an AP is 6 and the common difference is 5. What will be its 11th term?

- (a) 56 (b) 41 (c) 46 (d) none of these

37. Which term of the AP 72, 63, 54, is 0?

- (b) 8th (b) 9th (c) 11th (d) 12th

38. The 8th term of an AP is 17 and its 14th term is -29 . The common difference of the AP is (a) -2 (b) 3 (c) 2 (d) 5

39. Which term of the AP 2, $-1, -4, -7, \dots$ is -40 ?

- (c) 8th (b) 15th (c) 11th (d) 23rd

40. Which term of the AP 20, 17, 14, is the first negative term?

- (d) 8th (b) 6th (c) 9th (d) 7th

41. The first, second and last terms of an AP are respectively 4, 7 and 31. How many terms are therein the given AP?

- (a) 10 (b) 12 (c) 8 (d) 13

