

Practice Exercise

Level - I

- If the 4th term of an arithmetic progression is 14 and 12th term is 70, then the first term is
(a) -10 (b) -7
(c) +7 (d) +10
- Find the sum of all numbers in between 10–50 excluding all those numbers which are divisible by 8. (include 10 and 50 for counting.)
(a) 1070 (b) 1220
(c) 1320 (d) 1160
- How many 3-digit numbers are completely divisible by 6?
(a) 149 (b) 150
(c) 151 (d) 166
- $(11^2 + 12^2 + 13^2 + \dots + 20^2) = ?$
(a) 385 (b) 2485
(c) 2870 (d) 3255
- On March 1st 2016, Sherry saved ₹ 1. Everyday starting from March 2nd 2016, he save ₹ 1 more than the previous day. Find the first date after March 1st 2016 at the end of which his total savings will be a perfect square.
(a) 17th March 2016 (b) 18th April 2016
(c) 26th March 2016 (d) None of these
- A man arranges to pay off a debt of ₹ 3,600 in 40 annual instalments which form an AP. When 30 of the instalments are paid, he dies leaving one-third of the debt unpaid. Find the value of the first instalment.
(a) 55 (b) 53
(c) 51 (d) 49
- A number 15 is divided into three parts which are in AP and the sum of their squares is 83. Find the smallest number.
(a) 5 (b) 3
(c) 6 (d) 8
- A boy agrees to work at the rate of one rupee on the first day, two rupees on the second day, four rupees on the third day and so on. How much will the boy get if he starts working on the 1st of February and finishes on the 20th of February?
(a) 2^{20} (b) $2^{20} - 1$
(c) $2^{19} - 1$ (d) 2^{19}
- What is the sum of all the two-digit numbers which when divided by 7 gives a remainder of 3?
(a) 94 (b) 676
(c) 696 (d) None of these
- The sum of the 6th and 15th terms of an arithmetic progression is equal to the sum of 7th, 10th and 12th terms of the same progression. Which term of the series should necessarily be equal to zero?
(a) 10th (b) 8th
(c) 1st (d) None of these
- If the mth term of an AP is $1/n$ and nth term is $1/m$, then find the sum to mn terms.
(a) $(mn - 1)/4$ (b) $(mn + 1)/4$
(c) $(mn + 1)/2$ (d) $(mn - 1)/2$
- Find the value of $1 - 2 - 3 + 2 - 3 - 4 + \dots$ + upto 100 terms.
(a) -694 (b) -626
(c) -624 (d) -549
- 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 and the fifth term is equal to 10.
(a) 15 (b) 5
(c) 8 (d) 10
- There are 4 terms in an A.P. such that the sum of two means is 110 and product of their extremes is 2125. The 3rd term is
[SSC-Sub. Ins.-2012]
(a) 65 (b) 75
(c) 55 (d) 45
- The first term of an Arithmetic Progression is 22 and the last term is -11. If the sum is 66, the number of terms in the sequence are :
[SSC 10+2-2014]
(a) 10 (b) 12
(c) 9 (d) 8
- The sum of the squares of three consecutive natural numbers is 194. The sum of the numbers is
[SSC 10+2-2014]
(a) 24 (b) 27
(c) 21 (d) 30

Level - II

1. Each of the series $13 + 15 + 17 + \dots$ and $14 + 17 + 20 + \dots$ is continued to 100 terms. Find how many terms are identical between the two series?
 (a) 35 (b) 34
 (c) 32 (d) 33
2. The sum of thirty-two consecutive natural numbers is a perfect square. What is the least possible sum of the smallest and the largest of the thirty-two numbers?
 (a) 81 (b) 36
 (c) 49 (d) 64
3. The middle term of arithmetic series 3, 7, 11...147, is
 (a) 71 (b) 75
 (c) 79 (d) 83
4. If a man saves ₹ 4 more each year than he did the year before and if he saves ₹ 20 in the first year, after how many years will his savings be more than ₹ 1000 altogether?
 (a) 19 years (b) 20 years
 (c) 21 years (d) 18 years
5. What is the maximum sum of the terms in the arithmetic progression 25, $24\frac{1}{2}$, 24,?
 (a) $637\frac{1}{2}$ (b) 625
 (c) $662\frac{1}{2}$ (d) 650
6. $\left(1 - \frac{1}{n}\right) + \left(1 - \frac{2}{n}\right) + \left(1 - \frac{3}{n}\right) + \dots$ upto n terms = ?
 (a) $\frac{1}{2}n$ (b) $\frac{1}{2}(n-1)$
 (c) $\frac{1}{2}n(n-1)$ (d) None of these
7. If $1^3 + 2^3 + \dots + 9^3 = 2025$, then the value of $(0.11)^3 + (0.22)^3 + \dots + (0.99)^3$ is close to:
 (a) 0.2695 (b) 0.3695
 (c) 2.695 (d) 3.695
8. How many terms are identical in the two APs 1, 3, 5, ... up to 120 terms and 3, 6, 9, ... up to 80 terms?
 (a) 38 (b) 39
 (c) 40 (d) 41
9. If the sum of the first $2n$ terms of the AP 2, 5, 8 ... is equal to the sum of first n terms of the AP 57, 59, 6 ..., then what is the value of n ?
 (a) 7 (b) 9
 (c) 11 (d) 13
10. If the positive real numbers a , b and c are in Arithmetic Progression, such that $abc = 4$, then minimum possible value of b is :
 (a) $2^{\frac{3}{2}}$ (b) $2^{\frac{2}{3}}$
 (c) $2^{\frac{1}{3}}$ (d) None of these
11. After striking a floor a rubber ball rebounds $(\frac{7}{8})^{\text{th}}$ of the height from which it has fallen. Find the total distance that it travels before coming to rest, if it is gently dropped from a height of 420 meters?
 (a) 2940 (b) 6300
 (c) 1080 (d) 3360
12. On the ground 12 stones are placed. The distance between the first and the second is 1 metre, between second and 3rd 3 m, between 3rd and 4th 5 m, and so on. How far will a boy have to run to touch the last stone if he starts from the first?
 (a) 144m (b) 121m [SBI PO-2011]
 (c) 132m (d) 110m
 (e) None of these