

Comprehensive Test Series-1

Arithmetic Progression

TIME: 1hr

MM: 30

General Instructions:

- All Questions are compulsory.
 - Marks are given alongwith the questions individually.
 - Use of calculator is not permitted.
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- Q.1 Find
- (i) The 10th term of -40, -15, 10, 35... (185)
- (ii) The 8th term of 117, 104, 91, 78... (26)
- (iii) The 11th term of 10.0, 10.5, 11.0, 11.5... (15)
- (iv) The 9th term of $\frac{3}{4}, \frac{5}{4}, \frac{7}{4}, \frac{9}{4}, \dots$ ($\frac{19}{4}$)
- Q.2 Find the 12th term of the AP with:
- (i) First term 9 and common difference 10. (119)
- (ii) First term -20 and common difference 4. (24)
- (iii) first term $\frac{1}{2}$ and common difference $\frac{1}{12}$. ($\frac{17}{12}$)
- Q.3 Show that a-b, a and a+b are consecutive terms of an AP. (b)
- Q.4 Which term of the sequence $20, 19\frac{1}{4}, 18\frac{1}{2}, 17\frac{3}{4}, \dots$ is the first negative term? (28)
- Q.5 If the pth term of an AP is q and the qth term is p, prove that its nth term is (p+q-n).
- Q.6 If the mth term of an AP be $\frac{1}{n}$ and nth term be $\frac{1}{m}$, then show that its (mn)th term is 1.
- Q.7 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.
- Q.8 If the mth term of an AP is $\frac{1}{n}$ and term is $\frac{1}{m}$, show that the sum of (mn) terms is $\frac{1}{2}(mn+1)$.
- Q.9 A man borrows Rs.1, 000 and agrees to repay with a total interest of Rs. 140 in 12 instalments, each instalment being less than the preceding by Rs. 10. What should be his first instalment (150)

- Q.10 If m times the m th term of an AP is equal to n times its n th term, show that the $(m + n)$ term of the AP is zero.
- Q.11 Which term of the AP 5, 2, -1... is -49? (19)
- Q.12 Which term of the AP 58, 56, 54... is 22? (19)
- Q.13 Which term of the AP 3, 8, 13... is 248? (50th)
- Q.14 Which term of the AP 84, 80, 76... is 0? (22nd)
- Q.15 Which term of the AP 4, 9, 14... is 254? (51st)