

## Comprehensive Test Series-2

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 The third term of an AP is 1 and the sixth term is -11. Find its 15<sup>th</sup> term? (-47)
- Q.2 The third term of an AP is 18 and the seventh terms is 30. Find its 17<sup>th</sup> term? (60)
- Q.3 The tenth term of an AP is 52 and 16<sup>th</sup> term is 82. Find the 32nd terms? (162)
- Q.4 The tenth term of an AP is -4 and its 22<sup>nd</sup> term is -16. Find its 38<sup>th</sup> term? (-32)
- Q.5 If 4 times the fourth term of an AP is equal to 7 times the 7<sup>th</sup> term, find its 11<sup>th</sup> term? (0)
- Q.6 The fourth term of an AP is 7 and the ninth term is 17. Find its 15<sup>th</sup> term? (29)
- Q.7 Which term of the AP  $17, 16\frac{1}{5}, 15\frac{2}{5}, \dots$  is the first negative term? (23rd)
- Q.8 Which term of the sequence 48, 43, 38, 33... is the first negative term? (11th)
- Q.9 Prove that in any AP
- $$a_{m+n} + a_{m-n} = 2a_m$$
- Q.10 If 7 times the 7<sup>th</sup> term of an AP is equal to 11 times its 11<sup>th</sup> term, show that the 18<sup>th</sup> term of the AP is zero.
- Q.11 If the p<sup>th</sup>, q<sup>th</sup>, and r<sup>th</sup> terms of an AP are a, b, c respectively, prove that:
- $$a(q-r) + b(r-p) + c(p-q) = 0.$$
- Q.12 If 5 times of the 5 term of an AP is equal to 10 times its 10<sup>th</sup> term, find the 15 term of the series.
- Q.13 If the p<sup>th</sup> term of an AP be  $\frac{1}{q}$  and the qth term be  $\frac{1}{p}$ , then find its (pq)<sup>th</sup> term.
- Q.14 Find the value of k for which  $8k + 4, 6k - 2$  and  $2k + 7$  are three consecutive terms of an AP.

$$(k = 15/2)$$