



10TH SSC MCQ - CH - ARITHMETIC PROGRESSION

DATE: _____

TIME: 35 Min

MARKS: 35

SEAT NO:

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Note:-

1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

- Q.1 The sum of first 16 terms of the A.P 10, 6, 2,..... is _____ (1)
- A) -320 B) 320
C) -352 D) -400

Ans : A

- Q.2 If the first term of an A.P is -5 and the common difference is 2, then the sum of the first 6 terms is _____ (1)
- A) 0 B) 5
C) 6 D) 15

Ans : A

- Q.3 The 4th term from the end of the A.P -11, -8, -5, ..., 49 is _____ (1)
- A) 37 B) 40
C) 43 D) 58

Ans : B

- Q.4 Two A.P's 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 _____ (1)
- A) -1 B) -8
C) 7 D) -9

Ans : C

- Q.5 If the common difference of an A.P is 5, then what is $a_{18} - a_{13}$? (1)
- A) 5 B) 20
C) 25 D) 30

Ans : C

- Q.6 Which term of the A.P is 21, 42, 63, 84,... is 210? (1)
- A) 9th B) 10th
C) 11th D) 12th

Ans : B

- Q.7 If the 2nd term of an A.P is 13 and the 5th term is 25, what is its 7th term? (1)
- A) 30 B) 37
C) 33 D) 38

Ans : C

Q.8 The 21st term of the A.P whose first two terms are -3 and 4 is _____ (1)

- A) 17 B) 137
C) 143 D) -143

Ans : B

Q.9 If a, b, c, d, e are in A. P then the value of a - 4b + 6c + 4d + e is ____ (1)

- A) 0 B) 1
C) -1 D) 2

Ans : A

Q.10 Sum of 12 terms of an A.P whose nth term is $a_n = 3n + 4$ (1)

- A) 282 B) 272
C) 262 D) 292

Ans : A

Q.11 If the sum of three numbers in an A.P is 9 and their product is 24 then the numbers are (1)

- _____
- A) 2, 4, 6 B) 1, 5, 3
C) 2, 8, 4 D) 2, 3, 4

Ans : D

Q.12 If the sum of n terms of an A. P is $(3n^2 - n)$ and its common difference is 6 then its first term is _____ (1)

- A) 3 B) 2
C) 4 D) 1

Ans : B

Q.13 What is the sum of first n natural numbers ? (1)

- A) $\frac{n(n-1)}{2}$ B) $\frac{n}{2}(n - 2)$
C) $\frac{n(n+1)}{2}$ D) $\frac{n(n+2)}{2}$

According to nth natural number

First term a = 1, Common difference d = 1

$$\begin{aligned} S_n &= \frac{n}{2}[2a + (n - 1)d] \\ &= \frac{n}{2}[2 \times 1 + (n - 1)1] \\ &= \frac{n}{2}[2 + n - 1] \\ &= \frac{n}{2}[n - 1] = \frac{n(n+1)}{2} \end{aligned}$$

Ans : C

Q.14 What is the sum of first 10 terms of the A.P 15, 10, 5 _____ (1)

- A) -75 B) -125
C) 75 D) 125

Given sequence is 15, 10, 5,

$$t_1 = a = 15, t_2 = 10, t_3 = 5$$

$$d = t_2 - t_1 = 10 - 15 = -5$$

$$d = t_3 - t_2 = 5 - 10 = -5$$

$$S_n = \frac{n}{2}[2a + (n - 1)d]$$

$$= \frac{10}{2}[2 \times 15 + (10 - 1)5]$$

$$= 5[30 + 9 \times -5] = 5 \times -15 = -75$$

Ans : A

Q.15 If for any A. P. $d = 4$, $t_4 - t_1 =$ _____ (1)

- A) 12 B) 3
C) 7 D) 9

Ans : A

Q.16 For an given A. P. $t_6 = 12$, $d = 3$ then $a =$ _____ . (1)

- A) 3 B) -3
C) 15 D) 9

Ans : B

Q.17 In an A.P. 1st term is 1 and the last term is 20. The sum of all terms is 399 then $n =$ _____ (1)

- A) 42 B) 38
C) 21 D) 19

Ans : B

Q.18 Sum of first five multiples of 3 is _____ . (1)

- A) 45 B) 55
C) 15 D) 75

Ans : A

Q.19 If for any A.P. $d = 5$, then $t_{18} - t_{13} =$ _____ . (1)

- A) 5 B) 20
C) 25 D) 30

Ans : C

Q.20 In an A.P. first two terms are -3, 4 then 21st term is _____ . (1)

- A) -143 B) 143
C) 137 D) 17

Ans : C

Q.21 For an given A.P. $a = 3.5$, $d = 0$, $n = 101$, then $t_n =$ _____ (1)

- A) 0 B) 3.5
C) 103.5 D) 104.5

Ans : B

Q.22 For an given A.P. $t_7 = 4, d = -4$ then $a =$ _____. (1)

- A) 6 B) 7
C) 20 D) 28

Ans : D

Q.23 What is the sum of the first 30 natural numbers? (1)

- A) 464 B) 465
C) 462 D) 461

Ans : B

Q.24 First four terms of an A.P. are _____, whose first term is -2 and common difference is -2 (1)

- A) $-2, 0, 2, 4$ B) $-2, 4, -8, 16$
C) $-2, -4, -6, -8$ D) $-2, -4, -8, -16$

Ans : C

Q.25 The sequence $-10, -6, -2, 2, \dots$ is _____ (1)

- A) Is an A.P., Reason $d = -16$ B) Is an A.P., Reason $d = 4$
C) Is an A.P., Reason $d = -4$ D) Is not an A.P.

Ans : B

Q.26 Smith asked daddy to give ₹ 100 on first day and go on decreasing by ₹ 10 daily. How much money has he collected in 10 days? (1)

- A) 550 B) 1000
C) 480 D) 320

First day daddy give him 100 Rs.

$$t_1 = a = 100 \text{ Rs.}$$

On decreasing 10 Rs. daily

Given sequence is 100, 90, 80,.....10

$$t_{10} = 10$$

$$S_n = \frac{n}{2}[a + t_n]$$

$$= \frac{10}{2}[100 + 10]$$

$$= 5 \times 110 = 550$$

Ans : A

Q.27 Mother asked Jheel to eat one fruit on the first day, two on the second day, and so on Jheel was very happy. But started crying because on the tenth day she had to eat _____ fruits. (1)

- A) 9 B) 10
C) 55 D) 12

1st day Jheel eat one fruit $a = t_1 = 1$

2nd day Jheel eat two fruit $t_2 = 2$

$t_2 - t_1 = d = 2 - 1 = 1$, $t_{10} = ?$

$$t_n = a + (n - 1)d$$

$$t_{10} = 1 + (10 - 1)1$$

$$= 1 + 9 \times 1$$

$$= 10$$

\therefore 10 fruits Jheel eat on 10th day.

Ans : B

Q.28 What is the sum of first 10 natural numbers? (1)

A) 195

B) 55

C) 30

D) 85

First ten natural numbers are 1, 2, 3, 4, ... 10

First term = $a = 1$, Last term = 10, $d = 1$

Number of term (n) = 10

$$S_n = \frac{n}{2} [2a + (n - 1)d]$$

$$= \frac{10}{2} [2 \times 1 + (10 - 1)1]$$

$$= 5 [2 + 9 \times 1] = 5 \times 11 = 55$$

Ans : B

Q.29 What is the sum of the first 10 even numbers? (1)

A) 100

B) 110

C) 20

D) 80

First ten even numbers are 2, 4, 6, 8, ...

$a = 2$, $t_2 - t_1 = d = 4 - 2 = d = 2$

$$S_n = \frac{n}{2} [2a + (n - 1)d]$$

$$= \frac{10}{2} [2 \times 2 + (10 - 1)2]$$

$$= 5 [4 + 9 \times 2] = 5 \times 22 = 110$$

Ans : B

Q.30 In an auditorium, if there are 20 seats in 1st row, 25 in 2nd row then there are _____ seats in 10th row. (1)

A) 65

B) 45

C) 55

D) 75

First row = 20, Second row = 25

Here, $a = 20$, $d = 5$, $t_{10} = ?$

$$t_n = a + (n - 1)d$$

$$t_{10} = 20 + (10 - 1)5$$

$$= 20 + 9 \times 5$$

$$= 20 + 45$$

$$= 65$$

\therefore There are 65 seats in 10th row.

Ans : A

Q.31 First four terms of an A. P. are _____. Whose first term is - 6 and common difference is 6 **(1)**

A) -6, 6, -12, 24 B) -6, -12, -18, -24

C) -6, 6, 12, 18 D) -6, 0, 6, 12

$$t_1 = a = -6, d = 6$$

$$t_2 = t_1 + d = -6 + 6 = 0$$

$$t_3 = t_2 + d = 0 + 6 = 6$$

$$t_4 = t_3 + d = 6 + 6 = 12$$

Given sequence is -6, 0, 6, 12

Ans : D

Q.32 If $\frac{1}{2}\pi, 1\pi, \frac{3}{2}\pi, \dots$ is an AP then $d =$ _____ **(1)**

A) $\frac{1}{2}\pi$ B) 2π

C) $\frac{\pi}{2}$ D) π

$$t_1 = a = \frac{1}{2}\pi$$

$$t_2 = 1\pi$$

$$t_3 = \frac{3\pi}{2}$$

$$d = t_2 - t_1 = 1\pi - \frac{1}{2}\pi = \frac{\pi}{2}$$

$$d = t_3 - t_2 = \frac{3\pi}{2} - 1\pi = \frac{\pi}{2}$$

Ans : C

Q.33 Arjun thought of adding all the multiples of 5 he learnt in class. So would you help him to get the answer to first 10 multiples of 5. According to you **(1)**

$$S_{10} = \text{_____}$$

A) 275 B) 500

C) 50 D) 550

$$a = 5, d = 5, n = 10$$

$$S_n = \frac{n}{2}[2a + (n - 1)]$$

$$= \frac{10}{2}[2 \times 5 + (10 - 1)]$$

$$= 5[10 + 9 \times 5] = 5[10 + 45] = 275$$

Ans : A

Q.34 In an A. P. first term is 0 and the last term is 40. Then sum of all terms is = _____, when n = 20 (1)

- A) 800 B) 60
C) 20 D) 400

$$n = 20, t_n = 40, a = 0$$

$$\begin{aligned} S_{20} &= \frac{n}{2}(a + t_n) \\ &= \frac{20}{2}(0 + 40) \\ &= 10 \times 40 = 400 \end{aligned}$$

Ans : D

Q.35 The sequence 2, 4, 8, 16, _____. (1)

- A) Is an A.P., d = 4 B) Is an A.P., d = - 4
C) Is not an A. P. D) Is an A. P. with d = 2

$$t_1 = a = 2, t_2 = 4, t_3 = 8, t_4 = 16$$

$$t_2 - t_1 = 4 - 2 = 2$$

$$t_3 - t_2 = 8 - 4 = 4$$

$$t_4 - t_3 = 16 - 8 = 8$$

Common difference is not same. Given sequence is not in A.P

Ans : C