Arithmetic Progressions

Question 1.
The number of terms common to the two A.P. s 2 + 5 + 8 + 11 + ….+ 98 and 3 + 8 + 13 + 18 +….+198
(a) 33
(b) 40
(c) 7
(d) None of these

Answer: (c) 7

Question 2.
How many terms of AP 54, 51, 48… are required to give a sum of 513?
(a) 21 or 25
(b) 22 or 23
(c) 23 or 24
(d) 18 or 19

Answer: (d) 18 or 19

Question 3.
Find the next two terms of the A.P.:- -10, -6,-2…
(a) 4,8
(b) -4,-8
(c) 2,6
(d) 6,10

Answer: (c) 2,6

Question 4.
How many terms are there in 20, 25, 30……., 140
(a) 22

(b) 25
(c) 23
(d) 24

Answer: (b) 25

Question 5.
The fourth term of an A.P. is 4. Then the sum of the first 7 terms is :
(a) 4
(b) 28
(c) 16
(d) 40

Answer: (b) 28

Question 6.
The sum of all two digit odd numbers is
(a) 2575
(b) 2475
(c) 2524
(d) 2425

Answer: (b) 2475

Question 7.
An athlete wants to improve his stamina, so he decides to increase the distance he runs by half a kilometer every day. If he starts with 5 km on first day, find how much he runs on the 10 th day
(a) 6 Km
(b) 7.5 Km
(c) 9.5 Km
(d) 10 Km

Answer: (c) 9.5 Km

Question 8.
If p, q, r are in AP, then $p^3 + r^3 - 8q^3$ is equal to
(a) 4pqr
(b) -6pqr
(c) 2pqr
(d) 8pqr

Answer: (b) -6pqr

Question 9.
The number of multiples lie between n and x^2 which are divisible by n is
(a) n + 1
(b) n
(c) n – 1
(d) n – 2

Answer: (d) n – 2

Question 10.
The weights of 11 students selected for a team are noted in ascending order and are in A. P. The lowest value is 45 Kg, and the middle value is 55 Kg. What is the difference between the two values placed consecutively ?
(a) 4
(b) 2
(c) 6
(d) 3

Answer: (b) 2

Question 11.
What is the sum of the first 50 multiples of 3?
(a) 3255
(b) 3825
(c) 4325
(d) 4455

Answer: (b) 3825

Question 12.
The $(n – 1)^{th}$ term of an A.P. is given by 7,12,17, 22,… is
(a) 5n + 2
(b) 5n + 3
(c) 5n – 5
(d) 5n – 3

Answer: (d) 5n – 3

Question 13.
If p, q, r and s are in A.P. then r – q is
(a) s – p
(b) s – q
(c) s – r
(d) none of these

Answer: (c) s – r

Question 14.
If the sum of three consecutive terms of an increasing A.P. is 51 and the product of the first and third of these terms is 273, then the third term is
(a) 13
(b) 9
(c) 21
(d) 17

Answer: (c) 21

Question 15.
The common difference of the A.P for which 20th term is 10 more than the 18th term is :
(a) 2
(b) 3
(c) 5
(d) 10

Answer: (c) 5

Question 16.
For an A.P the sum of first 30 terms is -1155,the common difference is -3and the thirtieth term is -82. What is the first term?
(a) 10
(b) 8
(c) 5
(d) 12

Answer: (c) 5

Question 17.
The n^{th} term of an A.P. 5, 2, -1, -4, -7 … is

(a) 2n + 5
(b) 2n – 5
(c) 8 – 3n
(d) 3n – 8

Answer: (c) 8 – 3n

Question 18.
If p, q, r, s, t are the terms of an A.P. with common difference -1 the relation between p and t is:
(a) t = p – 5
(b) t = p – 4
(c) t = p – 6
(d) t = p + 4

Answer: (b) t = p – 4

Question 19.
If the sum of n terms of an AP is $3n^2+5n$ then which of its terms is 164?
(a) 27th
(b) 29th
(c) 28th
(c) 26th

Answer: (a) 27th

Question 20.
n^{th} term of the sequence a, a + d, a + 2d,… is
(a) a + nd
(b) a – (n – 1)d
(c) a + (n – 1)d
(d) n + nd

Answer: (a) a + nd

Question 21.
If 2x, x + 10, 3x + 2 are in A.P., then x is equal to
(a) 0
(b) 2
(c) 4
(d) 6

Answer: (d) 6

Question 22.
Find the sum of 12 terms of an A.P. whose nth term is given by $a_n = 3n + 4$
(a) 262
(b) 272
(c) 282
(d) 292

Answer: (a) 262

Question 23.
If 7th and 13th terms of an A.P. be 34 and 64, respectively, then it's 18th term is :
(a) 87
(b) 88
(c) 89
(d) 90

Answer: (c) 89

Question 24.
The number of two digit numbers divisible by 5 is
(a) 19
(b) 18
(c) 16
(d) 17

Answer: (b) 18
