TEST – 02 SET [A]

Arithmetic Progressions

Time : 1 hr] **[Max Marks 25**

Section A

1 In an AP if $d=-2, n=5$ *and* $a_n=0$ then find the value of a.

2 Write an A.P whose nth term is $a_n=9-5n$.

Section B

3 The 6^{th} term of an AP is -10 and its 10^{th} term is -26 . Determine 15 term and general term.

4 Find the sum of the AP $5+13+21+....+181$.

5 If $\frac{1+3+5+.....up\ to\ n\ terms}{2+5+8+.....up\ to\ n\ terms}=25$ then find the value of n.

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Section C

6 Which term of AP 121,117,113,..... is its First negative term.

OR

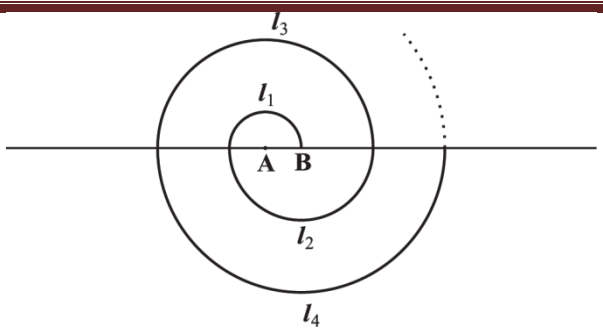
Find the sum of all natural numbers between 200 and 1000 exactly divisible by 6?

7 Find the common difference of an AP whose first term is 1 and the sum of first four terms is one-third to the sum of the next four terms.

OR

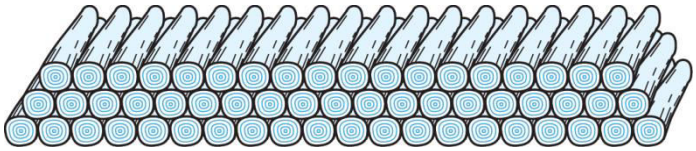
Find the sum of the first 31 terms of an AP, whose nth term is given by $3+\frac{2}{3}n.$

8 A spiral is made up of successive semicircles, with centers alternately at A and B, starting with center at A, of radii 0.5 cm, 1.0 cm, 1.5 cm, 2.0 cm, . . . as shown in Fig. 5.4. What is the total length of such a spiral made up of thirteen consecutive semicircles? (Take $\pi = 22/7$)



Section D

9 200 logs are stacked in the following manner: 20 logs in the bottom row, 19 in the next row, 18 in the row next to it and so on (see Fig. 5.5). In how many rows are the 200 logs placed and how many logs are in the top row?



OR

The sum of n terms of an AP is $3n^2 + 5n$. Find the AP. Also find the 23^{rd} term of the series.

10 A sum of ` 280 is to be used to award four prizes. If each prize after the first is ` 20 less than its preceding prize, find the value of each prizes.

TARGET MATHEMATICS
THE EXCELLENCE KEY
BY MANISH SAXENA

PLEASURE TEST SERIES - X
TEST – 02 SET [B]
Arithmetic Progressions

Time : 1 hr] **[Max Marks 25**

Section A

1 Which term of the AP $21, 18, 15, \ldots\ldots$ is -81?

2 Find the sum of the first 22 terms of the AP : $8, 3, -2, \ldots\ldots$

Section B

3 Find the sum of all integers between 200 and 300 that are divisible by 7.

4 How many terms of the AP : $9, 17, 25, \ldots\ldots$ must be taken to give the sum of 636?

5 The first term of an AP is 5, the last term is 45 and sum is 400. Find the number of terms and common difference.

Section C

6 Which term of AP $21, 17, 13, \ldots\ldots$ is its First negative term.

OR

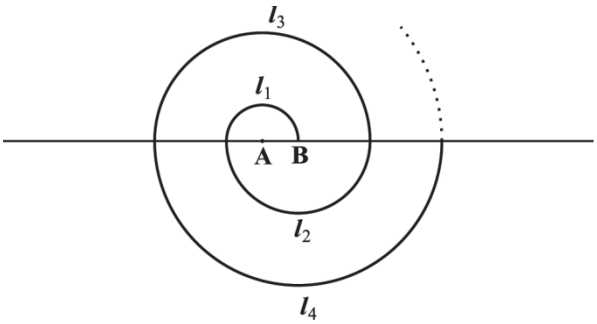
Find the AP whose sum to n terms is $2n^2 + 2$.

7 If 12^{th} term of an AP is -13 and the sum of its first four term is 24, what is the sum of its first 10 terms.

OR

A man repays a loan of ` 32500 by paying ` 200 in the first month and increased payment by ` 150 every month. How long will it take him to clear the loan?

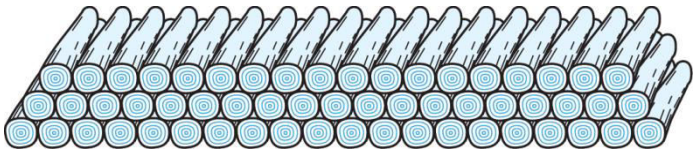
8 A spiral is made up of successive semicircles, with centers alternately at A and B, starting with center at A, of radii 1 cm, 2 cm, 3 cm, 4cm, . . . as shown in Fig. 5.4. What is the total length of such a spiral made up of eleven consecutive semicircles? (Take $\pi = 22/7$)



Section D

9 360 logs are stacked in the following manner: 30 logs in the bottom row, 29 in the next row, 128 in the row next to

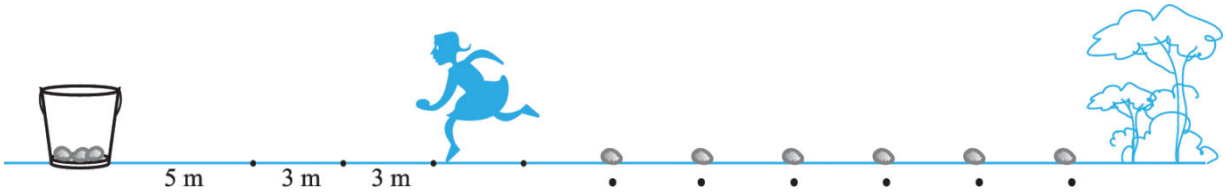
it and so on (see Fig. 5.5). In how many rows are the 360 logs placed and how many logs are in the top row?



OR

The sum of n terms of an AP is $4n - n^2$. Find the AP. Also find the 23rd term of the series.

10 In a potato race, a bucket is placed at the starting point, which is 5 m from the first potato, and the other potatoes are placed 3 m apart in a straight line. There are ten potatoes in the line (see Fig. 5.6).A competitor starts from the bucket, picks up the nearest potato, runs back with it, drops it in the bucket, runs back to pick up the next potato, runs to the bucket to drop it in, and she continues in the same way until all the potatoes are in the bucket. What is the total distance the competitor has to run?



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TARGET MATHEMATICS
THE EXCELLENCE KEY
BY MANISH SAXENA

PLEASURE TEST SERIES - X
TEST – 02 SET [C]
Arithmetic Progressions

Time : 1 hr] **[Max Marks 25**

Section A

1 Determine k so that $\frac{2}{3}$, k and $\frac{5}{8}k$ are three consecutive terms of an AP.

2 The n the term of an AP is $7-4n$. Find its common difference.

Section B

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3 Which term of AP 3, 10, 17,.....will be 84 more than its 13th term.

4 The 8th term of an AP is zero. Prove that its 38th term is triple of its 18th term.

5 Find the sum $-(5)+(-8)+(-11)+.....+(-230)$

Section C

6 Which term of AP $19, 18\frac{1}{5}, 17\frac{2}{5}, ...$ is its First negative term.

OR

Find the middle term(s) in the AP $20, 16, 12, ... -176$.

7 How many terms of the AP $-6, -\frac{11}{2}, -5, ...$ are needed to given the sum -25? explain the double answer.

OR

The pth term of an AP is q and q th term is p. Find the (p+q) the term of AP.

8 How many terms lie between 10 and 300, which when divided by 4 leave reminder 3?

Section D

9 360bricks are stacked in the following manner: 30bricks in the bottom row, 29 in the next row, 28 in the row next to it and so on . In how many rows are the 360bricks placed and how many bricks are in the top row?

OR

The sum of q terms of an AP is $2q+q^2$. Find the AP. Also find the 23rd term of the series.

10 In a potato race, a bucket is placed at the starting point, which is 5 m from the first potato, and the other potatoes are placed 3 m apart in a straight line. There are ten potatoes in the line (see Fig. 5.6).A competitor starts from the bucket, picks up the nearest potato, runs back with it, drops it in the bucket, runs back to pick up the next potato, runs to the bucket to drop it in, and she

continues in the same way until all the potatoes are in the bucket.

What is the total distance the competitor has to run?

TARGET MATHEMATICS

THE EXCELLENCE KEY

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PLEASURE TEST SERIES - X

TEST – 02 SET [D]

Arithmetic Progressions

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Time : 1 hr] **[Max Marks 25**

Section A

1 Find the 10 th term of the AP $40, -15, 10, 35, \ldots\ldots$

2 Which term of the AP $84, 80, 76, \ldots\ldots$ is 0?

Section B

3 The 6^{th} and 17^{th} terms of an AP are 19 and 41 respectively, find the 40^{th} term.

4 A person buys cash certificates of `125. Thereafter every year he buys these certificates of the value exceeding previous years purchase by `25. Find the total value of certificates purchased by him in 20 years.

5 Find the sum of all three digits numbers which are divisible by 7.

Section C

6 Which term of AP $17, 16\frac{1}{5}, 15\frac{2}{5}, \ldots\ldots$ is its First negative term.

OR

Find the middle term(s) in the AP $20, 16, 12, \ldots\ldots -176$.

7 Which term of the AP 3, 15, 27, 39, ... Will be 120 more than its 21^{st} term.

OR

The pth term of an AP is q and q th term is p. Find the (p+q) the term of AP.

8 How many terms lie between 10 and 300, which when divided by 4 leave reminder 3? Also find their sum.

Section D

9 360bricks are stacked in the following manner: 30bricks in the bottom row, 29 in the next row, 28 in the row next to it and so on . In how many rows are the 360bricks placed and how many bricks are in the top row?

OR

A sum of ` 700 is to be used to give seven cash prizes to students of a school for their overall academic performance. If each prize is ` 20 less than its preceding prize, find the value of each of the prizes.

10 Determine k so that $k^2+4k+8, 2k^2+3k+6, 3k^2+4k+4$ are in AP.