MATHS

BOOKS - SELINA MATHS (ENGLISH)

SAMPLE PAPER 5 (MATHEMATICS)

Section A

1. If A = B [8-3] and B = [4,-5], then B - A?

    A. [4-2]

B. [-4-2]

C. [4-2]

D. [-4 2]

Answer: B

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2. For x = 0, the value of the polynomial

$x^3 + 9x + 5$ is:

A. 9

B. 0

C. -9

D. 5

Answer: D

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3. Mr. Jha gets Rs. 12,910 at the end of 1 year at the rate of 14% p.a. in a recuring deposit account. Find the monthly installment.

A. Rs. 200

B. Rs. 500

C. Rs. 1,000

D. Rs. 1,500

Answer: C

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4. Anushka deposited Rs. 350 per month in a bank for 1 year and 3 months under the recurring deposit scheme. If she receives the

matrurity value of Rs. 5,565, find the interset received on the total deposit.

A. Rs. 35

B. Rs. 240

C. Rs. 315

D. Rs. 350

Answer: C

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5. Solve the inequation $16 \geq 25 - 4$, when $x \in N$.

A. x = 2.5

B. $x \geq 2.25$

C. $x \leq 2.75$

D. $x < 4$

Answer: B

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6. Which term of the A.P.1,4,7,10,... is 58?

A. 18

B. 19

C. 20

D. 21

Answer: C

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7. Areas of two similar triangles are 98 sq. cm and 128 sq. cm. Find the ratio between the lenghts of their corresponding sides.

A. $3 : 8$

B. $5 : 8$

C. $7 : 8$

D. $9 : 8$

Answer: C

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8. Find the greatest integral value of x satisfying the inequality:

$$7 > -3 \geq \left(-\frac{1}{2}\right), x \in R.$$

A. 2

B. 2.5

C. 3

D. 3.5

Answer: B

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9. Find the value of m if $\dfrac{2}{3}$ is a solution of the equation $3x^2 + mx + 2 = 0$

A. $-2\sqrt{6}$

B. -5

C. $-2\sqrt{3}$

D. -6

Answer: B

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10. Find the fourth proportional to 1.5, 4.5 and 3.5.

    A. 8.5

    B. 10.5

    C. 11.5

    D. 12.5

Answer: B

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11. Find the value a, if (x - a) is a factor of $x^2 - ax^2 + 2x + a - 1$.

A. -1

B. 1

C. $\dfrac{1}{3}$

D. 2

Answer: B

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12. Find the value (s) of x which satisfies the equation $2x^2 - 9x = -10$.

A. 2 or 2.5

B. 4 or 3

C. 5 or 2

D. 3 or 7

Answer: A

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13. Find the sum of first 14 natural numbers where each number is divisible by 9.

A. 135

B. 819

C. 945

D. 952

Answer: C

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14. If $A = [(5, 3\}, (- 1, 2)]$, find (A - 20)

A. $\begin{bmatrix} 3 & 3 \\ -1 & 0 \end{bmatrix}$

B. $\begin{bmatrix} 7 & 3 \\ -1 & 4 \end{bmatrix}$

C. $\begin{bmatrix} 4 & 3 \\ -1 & 1 \end{bmatrix}$

D. $\begin{bmatrix} 5 & 1 \\ -3 & 2 \end{bmatrix}$

Answer: A

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15. When a polynomial $x^2 + 2x^2 - kx + 8$ is divisible by x - 2, the remainder is k. Find the value of k.

A. $\dfrac{20}{3}$

B. 8

C. $\dfrac{19}{3}$

D. 7

Answer: B

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1. If $\triangle ABC \sim \triangle DEF$, then which of the following is true?

    A. BC.EF = AC.FD

    B. AB.ED = AC.DE

    C. BC.DE = AB.EF

    D. BC.DE = AB.FD

Answer: C

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2. Find 'm' if the two polymials $mx^3 + 4x^2 - 7$ and $3x^2 - 2x + m$, leave the same remainder when divided by (x - 2).

A. $\dfrac{8}{7}$

B. $\dfrac{11}{7}$

C. $\dfrac{12}{7}$

D. $\dfrac{15}{7}$

Answer: B

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3. Find the smallest value of x which satisfies the inequality $2x + \dfrac{5}{2} > \dfrac{5x}{3} + 2, x \in I.$

A. -1

B. 0

C. 1

D. 2

Answer: A

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4. What number must be added to each of the numbers 7,16,21 and 44 to make them proportional ?

    A. 1

    B. 2

    C. 3

    D. 4

Answer: A

5. If

$$\begin{bmatrix} a & 3 \\ 4 & 1 \end{bmatrix} + \begin{bmatrix} 2 & b \\ 1 & -2 \end{bmatrix} - \begin{bmatrix} 1 & 1 \\ -2 & c \end{bmatrix} = \begin{bmatrix} 5 & 0 \\ 7 & 3 \end{bmatrix}$$

, find the values of a,b,and c

A. a = 4, b = 2, c = - 4

B. a = - 4, b = 2, c = 4

C. a = 4, b = - 2, c = - 4

D. a = - 4, b = 2, c = - 4

Answer: C

6. Using remainder theorem, find the remainder when $3x^4 - 4x^3 - 3x - 1$ is divided by (x - 1).

A. 1

B. -5

C. 5

D. -1

Answer: B

Section C

1. The nth of an arthmetic progression (A. P) is

2(n - 1) + 5.

    A. 9,11,13

    B. 7,9,11

    C. 3,5,7

    D. 5,7,9

Answer: D

2. The common difference of the A.P. is :

A. 2

B. -3

C. -2

D. 3

Answer: A

3. Which of the following is not a term of this A.P. ?

A. 23

B. 43

C. 33

D. 68

Answer: D

4. Sum of the first 12 terms A.P. is :

A. 212

B. 182

C. 202

D. 192

Answer: D

5. Stations A and B are 300 km apart. Two trains run daily commuting people from A to B vice versa. The first runs at a speed x km/hr. wheres the second one runs 50 km/hr slower than the first train.

The time taken by the first train to cover the distance between station A and B is :

A. $\dfrac{x}{300}$ x

B. 30 hrs

C. $\dfrac{300}{x}$ hrs

D. x hr

Answer: A

6. Stations A and B are 300 km apart. Two trains run daily commuting people from A to B vice versa. The first runs at a speed x km/hr. wheres the second one runs 50 km/hr slower than the first train.

The time taken by the second train to cover the distance between stations A and B is :

A. $\dfrac{(x + 50)}{300}\,hrs$

B. $\dfrac{300}{(x + 5)}\,hrs$

C. $\dfrac{(x - 50)}{300}\,hrs$

D. $\dfrac{300}{(x - 50)}\,hrs$

Answer: D

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7. Stations A and B are 300 km apart. Two trains run daily commuting people from A to B vice versa. The first runs at a speed x km/hr.

wheres the second one runs 50 km/hr slower than the first train.

If second train takes 10 hrs to cover the distance, then find the speed of first train.

A. 80 km/hr

B. 30 km/hr

C. 150 km/hr

D. 90 km/hr

Answer: A

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8. Stations A and B are 300 km apart. Two trains run daily commuting people from A to B vice versa. The first runs at a speed x km/hr. wheres the second one runs 50 km/hr slower than the first train.

If first train takes 3 hrs to cover the distance, then find the speed of second train.

    A. 8 km/hr

    B. 100 km/hr

    C. 50 km/hr

D. 30 km/hr

Answer: C

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