CARMEL CONVENT SCHOOL, CHANDIGARH
UNIT 1, 2024-25
MATHEMATICS
CLASS: 10

TOTAL TIME: 45 mins
MARKS: 20
DATE: 17.05.24

General Instructions:

(i) All questions are compulsory.
(ii) The question paper has four sections and 10 questions. All questions are compulsory.
(iii) Section–A has 4 questions of 1 mark each; Section–B has 3 questions of 2 marks each; Section– C has 2 questions of 3 marks each; Section– D has 1 case-based question of 4 marks .

SECTION A

Q. No.	Question	Marks
1	If α and β are zeros of $x^2 + 5x + 8$, then value of $(\alpha + \beta)$ is a) 8 b) 5 c) -5 d) -8	1
2	On the morning walk, three persons step off together and their steps measure 40 cm, 42 cm and 45 cm respectively. What is the minimum distance each should walk so that each can cover the same distance incomplete steps? a) 1cm b) 252 cm c) 2520cm d) 10cm	1
3	If 1 is the zero of polynomial $P(x) = ax^2 - 3(a-1)x - 1$, then the value of a is a) -1 b) 1 c) -2 d) 2	1
	Question Numbers 4 consist of two statements: Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below: (a) Both A and R are true, and R is the correct explanation of A. (b) Both A and R are true, and R is not the correct explanation of A. (c) A is true but R is false. (d) A is false but R is true	
4	**Assertion**: pair of linear equations $5x + 2y + 6 = 0$ and $7x + 6y + 18 = 0$, has infinitely many solutions. **Reason:** The pair of linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$, has infinitely many solutions, if $a_1 / a_2 = b_1 / b_2 = c_1 / c_2$	1

SECTION – B

Q. No.	Question	Marks
5	Prove that $2\sqrt{3} - 1$ is an irrational number.	2
6	If p and q are two co prime numbers, then find the HCF and LCM of p and q.	2
7	Write a quadratic polynomial, the sum and product of whose zeros are $\sqrt{2}$ and $-3/2$ respectively.	2

SECTION – C

Q. No.	Question	Marks
8	Solve the following pair of linear equations in two variables by substitution method. Also draw the graph for these equations. $8x + 5y = 9$ $\quad$ $3x + 2y = 4$	3
9	A purse contains 25 paise and 10 paise coins. The total amount in the purse is ₹8.25. If the number of 25 Paise coins is one third the number of 10 Paise coins in the purse, find the total number of coins in the purse.	3

SECTION – D

Question number 10 is a Case based question.

10	Dipankar bought 3 notebooks and 2 pens for ₹80 and his friend Suryansh bought 4 notebooks and 3 pens for ₹110 from the school bookshop.  Based on the above information, answer the following questions Q i) If the price of one notebook is ₹x and the price of one pen is ₹y . Write the given situation algebraically. Q ii)What is the total amount to be paid by Suryansh if he purchases 6 notebooks, and 3 pens?	4 (1+3)

'The End'