CLASS: X
DATE: 18/05/22

MAX. MARKS: 20
TIME: 45 MINUTES

## General Instructions:

1. The question paper contains 11 questions. All questions are compulsory.
2. Section A comprises of 5 questions of 1 mark each. Section B comprises of 3 questions of 2 marks each. Section $C$ comprises of 3 questions of 3 marks each.

## SECTION A

| 1 | If the HCF of 85 and 153 is expressible in the form $85 x-153$, then the value of $x$ is <br> a) 2 <br> b) 17 <br> c) -2 <br> d) 1 | 1 |
| :---: | :---: | :---: |
| 2 | HCF and LCM of two numbers is 9 and 459 respectively. If one of the numbers is 27 , find the other number. <br> a) 27 <br> b) 18 <br> c) 59 <br> d) 153 | 1 |
| 3 | The graph of a polynomial $P(x)$ cuts the $x$-axis at 3 points and touches it at 2 other points. The number of zeroes of $P(x)$ is <br> a) 5 <br> b) 2 <br> c) 1 <br> d) 4 | 1 |
| 4 | If two positive integers $p$ and $q$ are written as $p=x^{2} y^{2}$ and $q=x y^{2}, x, y$ are prime numbers, then $\operatorname{HCF}(p, q)$ is : <br> a) 1 <br> b) $x y^{2}$ <br> c) $x^{2} y^{2}$ <br> d) $x y$ | 1 |
| 5 | If $\alpha$ and $\beta$ are the zeroes of the polynomial $\mathrm{p}(\mathrm{x})=5 \mathrm{x}^{2}-7 \mathrm{x}+2$, then $\frac{1}{\alpha}+\frac{1}{\beta}$ is <br> a) $\frac{7}{2}$ <br> b) $\frac{2}{3}$ <br> c) $\frac{-2}{5}$ <br> d) $\frac{7}{5}$ | 1 |

## SECTION B

| 6 | Show that $4^{n}$, when n is a natural number cannot end with the digit 0 for any natural <br> number ' n. | 2 |
| :--- | :--- | :--- |
| 7 | If $\mathrm{x}-2$ is a factor of the polynomial $\mathrm{p}(\mathrm{x})=x^{3}+\mathrm{a} x^{2}+\mathrm{b}$ and $\mathrm{a}+\mathrm{b}=4$, then find the <br> values of a and b | 2 |
| 8 | If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial $\mathrm{p}(\mathrm{x})=x^{2}-5 \mathrm{x}+6$, find a quadratic <br> polynomial whose zeroes are $\frac{\alpha}{\beta}$ and $\frac{\beta}{\alpha} . \quad 2$ <br> Find the zeroes of the polynomial $4 \sqrt{3} x^{2}+5 \mathrm{OR}-2 \sqrt{3}$. |  |

## SECTION C

| 9 | Prove that $5+\sqrt{3}$ is an irrational number. | 3 |
| :--- | :--- | :--- |
| 10 | Find the zeroes of the quadratic polynomial $6 x^{2}-3-7 x$ and verify the relationship <br> between the zeroes and the coefficients. | 3 |
| 11 | Find the smallest number which when divided by 161, 207 and 184 leaves remainder 21 <br> in each case. <br> Two tankers contain 850 liters and 680 liters of petrol. Find the maximum capacity of a <br> container which can measure the petrol of each tanker in the exact number of times. | 3 |

