



ગુજરાત માધ્યમિક અને ઉચ્ચતર માધ્યમિક શિક્ષણ બોર્ડ, ગાંધીનગર

STD - 9

Sub: - Mathematics (12) (E)

2021-22

Total Marks: - 25

Unit Test -1

Time: - 45 Minutes

- Instructions: - This paper contains total 12 questions, all are compulsory.

Section -A

- **Answer the following** **4 marks**

Q - 1 The decimal expansion of a rational number can never be _____.

- (b) Terminating (b)non-terminating
(c) non-terminating recurring (d) non-terminating non-recurring

Q - 2 If $(x+3)$ is one of the factors of $x^3+2x^2-ax-18$. Then $a=.....$

- (b) 3 (b) -3 (c) 9 (d) -9

Q - 3 _____ line/lines pass through two distinct points.

- (b) infinite (b) zero (c) 1 (d) 2

Q - 3 What is the probability of getting 5 Mondays in February in a non-leap year?

- (b) $1/5$ (b) $2/5$ (c) $1/7$ (d) 0

Section -B

- **Answer in brief:** **8 Marks**

Q - 5 Simplify: (i) $2^{2/3} \cdot 2^{1/5}$ (ii) $7^{1/2} \cdot 8^{1/2}$

Q - 6 Find the remainder when x^3-ax^2+6x-a is divided by $x-a$.

Q - 7 Give a definition for each of the following terms.

- (a) parallel lines (b)perpendicular lines (c) radius of a circle (d) square

Q - 8 Two coins are tossed simultaneously 500 times, and we get

Two heads: 105 times

One head: 275 times

No head: 120 times

Find the probability of occurrence of each of these events.

Section –C

- **Answer the following in brief:**

9 Marks

Q – 9 Express 0.99999.... in the form p/q and discuss why the answer makes sense.

Q – 10 Find the remainder when x^3+3x^2+3x+1 is divided by

(i) $x+1$

(ii) $5+2x$

(iii) x

Q – 11 If a point C lies between two points A and B such that $AC= BC$, then prove that $AC=\frac{1}{2}AB$. Explain by drawing the figure.

Section –D

- **Answer the following:**

4 Marks

Q – 12 An organization selected 2400 families at random and surveyed them to determine a relationship between income level and the number of vehicles in a family. The information gathered is listed in the table below:

Monthly income (in ₹)	Vehicles per family			
	0	1	2	Above 2
Less than 7000	10	160	25	0
7000-10000	0	305	27	2
10000-13000	1	535	29	1
13000-16000	2	469	59	25
16000 or more	1	579	82	88

Suppose a family is chosen. Find the probability that the family chosen is

- (i) Earning ₹10000-13000 per month and owning exactly 2 vehicles.
- (ii) Earning ₹16000 or more per month and owning exactly 1 vehicle.
- (iii) Earning less than ₹7000 per month and does not own any vehicle.
- (iv) Owning not more than 1 vehicle.

