

Date: 21-Jun-2026**Time: 60min****Probability****Marks: 20****Q.1(A) Choose the correct alternative. (4)**

i A two digit number is formed with digits 2, 3, 5, 7, 9 without repetition. What is the probability that the number formed is an even number?

(A) $\frac{1}{5}$

(B) $\frac{4}{5}$

(C) $\frac{3}{5}$

(D) $\frac{2}{5}$

ii One coin and one die are thrown simultaneously. Let

Condition for event X: To get head and an odd number.

Condition for event Y: To get a head or tail and an even number.

Condition for event Z: Number on the upper face is greater than 7 and tail on the coin.

Then $n(Z) =$

(A) 10

(B) 3

(C) 7

(D) 0

iii How many possibilities are there if any month of a year is selected randomly?

(A) 12

(B) 6

(C) 1

(D) 11

iv A card is selected from a deck of 52 cards. The probability of it being a red face card is

(A) $\frac{3}{26}$

(B) $\frac{3}{13}$

(C) $\frac{2}{13}$

(D) $\frac{1}{2}$

Q.1(B) Solve the following questions. (2)

i For the following experiment write sample space 'S' and number of sample points $n(S)$. Two digit numbers are formed from the digits 1, 3 and 7 where the digits are repeated.

ii What is the probability of getting prime number from first 10 natural numbers?

Q.2 Solve the following questions.(Any two) (4)

i A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability of the events that the card drawn is:

- i. a red card
 - ii. a face card
- ii Each card bears one letter from the word 'mathematics'. The cards are placed on a table upside down. Find the probability that a card drawn bears the letter 'm'.
- iii Joseph kept 26 cards in a cap, bearing one English alphabet on each card. One card is drawn at random. What is the probability that the card drawn is a vowel card ?

Q.3 Complete the following activity. (3)

- i A two digit number is to be formed from the digits 2, 3, 5 without repetition of the digits. Complete the following activity to find the probability that the number so formed is an odd number.

Activity:

Let S be the sample space.

$$\therefore S = \{23, 25, 32, \boxed{}, 52, 53\}$$

$$\therefore n(S) = \boxed{}$$

Event A: The number so formed is an odd number.

$$\therefore A = \{23, 25, \boxed{}, 53\}$$

$$\therefore n(A) = 4$$

$$\therefore P(A) = \frac{\boxed{}}{n(S)} \dots [\text{Formula}]$$

$$\therefore P(A) = \frac{\boxed{}}{6}$$

$$\therefore P(A) = \frac{\boxed{}}{3}$$

Q.4 Solve the following questions.(Any one) (3)

- i The faces of a die bear numbers 0, 1, 2, 3, 4, 5. If the die is rolled twice, then find the probability that the product of digits on the upper face is zero.
- ii Write sample space 'S' and the number of sample points n(S) for the following experiment. Also, write events A, B, C in the set form and write n(A), n(B), n(C).

Three coins are tossed simultaneously.

Condition for event A: To get at least two heads.

Condition for event B: To get no head.

Condition for event C: To get head on the second coin.

Q.5 Solve the following questions.(Any one) (4)

- i Ravi throws two different dice together and finds the product of the two numbers obtained. Anita throws a die and cubes the number obtained. Who has the better chance to get the number 8?
- ii All the jacks, queens and kings are removed from a deck of 52 playing cards. The remaining cards are well shuffled and then one card is drawn at random. Giving ace a value 1 similar value for other cards, find the probability that the card has a value
- 7
 - greater than 7
 - less than 7