PROBABILITY

EVENTS

EXERICSE

Q.1 A box holds 8 cards of identical size, labelled with multiples of 10 ranging from 20 to 90. The cards are shuffled, and one card is randomly chosen. The probability of event A, where the selected card is a multiple of 5, is .

(a) 1 (b) 5 (c) 0 (d) 0.5

Q.2 There is a set of 18 cards, each featuring a distinct shape: 4 cards have a square shape, 6 cards have a circular shape, and the remaining cards have a triangular shape. The probability of choosing a card with a shape that is neither a triangle nor a square is .

(a) $\frac{2}{9}$ (b) $\frac{7}{9}$ (c) $\frac{4}{9}$ (d) $\frac{1}{3}$

Q.3 A single coin is tossed. Enumerate its sample space and determine the total number of events.

Q.4 Contemplate the experiment of rolling a die. Let A represent the event "obtaining a prime number," and B represent the event "obtaining an odd number." Express the sets that represent these events:

(a) A or B (b) A and B (c) A but not B (d) not A.

Q.5 A die is rolled. Explain the following occurrences:

(i) A: a number less than 7
(ii) B. a multiple of 3
(iii) C: a number not less than 4
(iv) D: an odd number greater than 2
(v) E: an even number greater than 2.

Q.6 Two children are chosen at random from a group of 2 boys and 3 girls. Outline the events:

(i) A: both selected children are girls
(ii) B: the selected group consists of one boy and one girl
(iii) C: at least one boy is selected.

ANSWER KEY

1. 1

2. (d) $\frac{1}{3}$

3. (H, T)

4. (a) (1,2,3,5) (b) (3, 5) (c) (2) (d) [1, 4, 6].

5. (i) A= (1, 2, 3, 4, 5, 6) (ii) B= (3,6)
(iii) C = (4, 5, 6) (iv) D= (3,5) (v) (4, 6).

6. (i) (G_1G_2, G_1G_3, G_2G_3)
(ii) (B_1G_1, B_1G_2, B_1G_3, B_2G_1, B_2G_2, B_2G_3}
(iii) (B_1B_2, B_1G_1, B_1G_2, B_1G_3, B_2G_1, B_2G_2, B_2G_3}
A and B, A and C are mutually exclusive.