Objective

To set the idea of probability of an event through a double color card experiment.

Prerequisite Knowledge

1. Sample space and event.
2. Total number of possible outcomes.
3. Favorable outcomes.
4. Probability of an event = $\dfrac{\text{No. of favorable outcomes}}{\text{Total no. of Possible outcomes}}$

Material Required

A cardboard of size 18cm × 18cm, two color papers say pink and blue, pair of dice, empty box, pair of scissors, sketch pens, glue, etc.

Procedure

1. Paste different color papers, blue and pink on both sides of the board, (such that pink on one side and blue on another side)
2. Divide the board into 36 small squared cards.
3. Write all 36 possible outcomes obtained by throwing two dice, e.g., for the outcome (4,5), write 4 on the blue side and 5 on pink side.
4. Cut and put all the cards into a box.
5. Now take out each card one by one without replacement and write the observation in appropriate column.

Observation

1. Total number of possible outcomes =
2. Total number of favorable outcomes of sum 2 =
3. Total number of favorable outcomes of sum 3 =
4. Total number of favorable outcomes of sum 4 =
5. Total number of favorable outcomes of sum 5=
6. Total number of favorable outcomes of sum 6 =
7. Total number of favorable outcomes of sum 7 =
8. Total number of favorable outcomes of sum 8 =
9. Total number of favorable outcomes of sum 9 =
10. Total number of favorable outcomes of sum 10 =
11. Total number of favorable outcomes of sum 11 =
12. Total number of favorable outcomes of sum 12 =
13. Total number of favorable outcomes (sum ≥11) =
14. Total number of favorable outcomes (sum >12) =

Q5. If P(E) = 0.05, what is the probability of 'not E'?

Ans: 0.95.

Q6. What is the sum of the probabilities of all the elementary events of an experiment?

Ans: One

Multiple Choice Questions

Q 1. A die is thrown twice. What is the probability that 5 will not come up either?
(**Hint:** meaning is 5 is not coming in first throw as well as in second throw).

   (a) $\frac{25}{36}$ (b) $\frac{17}{36}$ (c) $\frac{15}{36}$ (d) None of these

Q 2. 17 cards numbered 1, 2, 3, ... 17 are put in a box and mixed. One person draws a card. Find the probability that the number on the card is prime.

   (a) $\frac{15}{17}$ (b) $\frac{7}{17}$ (c) $\frac{8}{17}$ (d) $\frac{9}{17}$

Q 3. The king, queen and jack of clubs are removed from a pack of 52 cards and then well shuffled. One card is selected from the remaining cards. Find the probability of getting 'The '10' of heart'.

   (a) $\frac{9}{49}$ (b) $\frac{10}{49}$ (c) $\frac{1}{49}$ (d) None of these

Q 4. A bag contains 5 red and some blue balls. If the probability of drawing a blue ball is double that of a red ball, find the number of blue balls in the bag.

   (a) 10   (b) 5   (c) 20   (d) None of these

Q 5. A coin is tossed three time what is the probability of getting the same Result in each trial?

   (a) $\frac{1}{4}$ (b) $\frac{1}{8}$ (c) $\frac{3}{8}$ (d) None of these

Q 6. If P(E) = 0.65 then P(E–) is:

   (a) 0.15   (b) 0.30   (c) 0.35   (d) None of these

Q 7. Which of the following can't be the event of probability?

   (a) $\frac{2}{3}$ (b) –1.5   (c) 15%   (d) 0.7

Q 8. If probability of 'not E' is 0.98, then P(E) is:

   (a) 0.5   (b) 0.02   (c) 0.005   (d) 1

Q 9. In a non–leap year there are 365 days i.e., 52 weeks and 1 day. Find the probability of getting 53 Sunday.

   (a) $\frac{1}{7}$ (b) $\frac{2}{7}$ (c) $\frac{3}{7}$ (d) None of these

Q 10. Find the probability of getting 53 Mondays in a leap year.

   (a) $\frac{1}{7}$ (b) $\frac{2}{7}$ (c) 1   (d) None of these

ANSWER KEY

1.(a)	2. (b)	3. (c)	4. (a)	5. (b)	6. (c)	7. (b)	8. (b)	9. (a)	10. (b)