

## Short Answer Type Questions-

1. 1500 families with 2 children were selected randomly, and the following data were recorded:

Number of girls in a family	2	1	0
Number of families	475	814	211

Compute the probability of a family, chosen at random, having

- (i) 2 girls      (ii) 1 girl      (iii) no girl

Also check whether the sum of these probabilities is 1.

2. Three coins are tossed simultaneously 1000 times with the following frequencies of different outcomes:

Outcome	2 heads	1 head	No head
Frequency	190	560	250

Find the probability of occurrence of each of these events.

3. Three coins are tossed simultaneously 200 times with the following frequencies of different outcomes:

Outcome	3 heads	2 heads	1 head	No head
Frequency	23	72	77	28

If the three coins are simultaneously tossed again, compute the probability of 2 heads coming up.

4. A bag contains ticket which are numbered from 1 to 100. Find the probability that a ticket number picked up at random

- (i) is a multiple of 7?      (ii) is not a multiple of 7?

5. A student opens his book and notes down the unit digit on the right hand page of his book. He repeats the process for 150 times. The following outcomes are recorded.

Digits	0	1	2	3	4	5	6	7	8	9
Frequency	7	25	16	30	10	4	11	20	15	12

Based on the above information, find the probability of occurrence of:

- (i) 1 or 4 as units digit.      (ii) At least 5 as the unit's digit.

6. Fifty seeds were selected at random from each of 5 bags of seeds, and kept under standardised conditions favourable to germination. After 20 days, the number of seeds which had germinated in each collection were counted and recorded as follows:

Bags	1	2	3	4	5
Number of seeds germinated	40	48	42	39	41

What is the probability of germination of:

- (i) more than 40 seeds in a bag?  
(ii) 49 seeds in a bag?  
(iii) more than 35 seeds in a bag?

7. On one page of a telephone directory, there were 200 telephone numbers. The frequency distribution of their unit place digits (for example, in the number 25828573, the unit place digit is 3) is given in the table below:

Digit	0	1	2	3	4	5	6	7	8	9
Frequency	22	26	22	22	20	10	14	28	16	20

A number is chosen at random, find the probability that the digit at its unit place is:

- (i) 6 (ii) a non-zero multiple of 3 (iii) a non-zero even number (iv) an odd number.

8. Out of 125 houses in a locality, 45 donate some part of their income every month to a charitable organisation.

- (i) Find the probability that a house chosen at random does not donate every month.  
(ii) How does donation to charitable organisations help in the development of society?  
(iii) What social values do these 45 households possess?

9. In an organisation, a manager through his observations discovers that 43 staff members out of 65 are honest while the remaining are dishonest.

Find the probability that a member, chosen at random is

- (i) honest (ii) dishonest.

What role does honesty play in the development of an individual?

10. At a petrol pump, it was found out of 50 vehicles that came there, 22 asked for petrol and the remaining used other fuels.

- (i) Find the probability that the next vehicle that will come, will ask for petrol.  
(ii) How can we save petrol?

### Long Answer Type Questions

11. The following table gives the distance (in km) that 40 students of a class have to travel from their residence to their school.

Distance (in km)	Number of students
0-5	5
5-10	11
10-15	11
15-20	9
20-25	1
25-30	1
30-35	2

Find the probability that randomly chosen student lives at a distance of:

- (i) more than 35 km. (iii) 10-15 km.  
(ii) at least 25 km. (iv) between 15-25 km

12. A recent survey found that the ages of workers in a factory are distributed as follows:

Age (in years)	20-29	30-39	40-49	50-59	60 and above
Number of workers	38	27	86	46	3