

DCA CLASSES

CLASS IX – SCIENCE – CHAPTER 01

PROBABILITY

Name:

Date:

- 01.** Out of 35 students Participating in a debate 10 are girls. The Probability that winner is a boy is
(a). 1 (b). $\frac{2}{7}$ (c) $\frac{3}{7}$ (d). $\frac{5}{7}$
- 02.** There are 5 balls, each of the colours white, blue, green, red and yellow in a bag. If 1 balls is drawn from the bag, then the Probability that the ball drawn is red is
(a). $\frac{4}{5}$ (b). $\frac{1}{4}$ (c) $\frac{1}{5}$ (d). $\frac{1}{20}$
- 03.** If $P(e) = 0.25$ what is the value of $P(\text{not } E)$
(a). 0.5 (b). 1 (c) 0 (d). 0.75
- 04.** Sum of the probabilities of all events of a trial is
(a). less than 1 (b). greater than 1 (c) lies between 0 and 1 (d). 1
- 05.** A four digit number is to be formed by using the digits 2, 4, 7, 8. The probability that the number will start with 7 is
(a). $\frac{3}{4}$ (b). $\frac{1}{4}$ (c) $\frac{1}{3}$ (d). $\frac{1}{7}$
- 06.** The probability of an event of a trial :
(a). is 1 (b). is 0 (c) lies between 0 and 1 (d). is greater than 1
- 07.** A dice is thrown once, the probability of getting a prime number on the die is:
(a). $\frac{1}{6}$ (b). $\frac{1}{3}$ (c) $\frac{1}{2}$ (d). $\frac{2}{3}$
- 08.** If two coins are tossed, then the probability of getting no tail is:
(a). $\frac{1}{4}$ (b). $\frac{1}{4}$ (c) $\frac{1}{5}$ (d). $\frac{3}{4}$
- 09.** If is dice is thrown once what is the probability of getting an even prime number.
(a). $\frac{1}{6}$ (b). $\frac{1}{2}$ (c) $\frac{2}{3}$ (d). 1
- 10.** A card id drawn from a pack 52 cards what is the probability of getting a non ace card.
(a) $\frac{1}{13}$ (b). $\frac{12}{13}$ (c) $\frac{1}{4}$ (d). none of these
- 11.** The minimum value of probability is
(a). 1 (b). $\frac{1}{2}$ (c) 0 (d). none of these
- 12.** Performing an experiment once is called
(a). Trial (b). Event (c) Probability (d). none of these
- 13.** What is probability of a number greater than 6 for a single throw of a die?
(a). 0 (b). 1 (c) $\frac{1}{2}$ (d). none of these
- 14.** If $P(E) = \frac{3}{4}$, $P \bar{E}$ what is value of $P(\bar{E})$.
(a). $\frac{3}{4}$ (b). $\frac{1}{4}$ (c) 1 (d). none of these
- 15.** A card is drawn from a pack of 52 playing cards. What is the probability of getting an king of black colour
(a). $\frac{1}{52}$ (b). $\frac{4}{52}$ (c) $\frac{1}{4}$ (d). none of these
- 16.** A coin is tossed 2 times what is probability of getting at most 2 heads.
(a). $\frac{3}{4}$ (b). $\frac{1}{2}$ (c) $\frac{1}{4}$ (d). none of these

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Q01. A dice is thrown 1000 times with the frequencies for the outcomes 1, 2, 3, 4, 5 and 6 as given in the following table: Find the probability of getting each outcome.

Outcome	1	2	3	4	5	6
Frequency	179	150	157	149	175	190

Q02. Two coins are tossed 729 times and the out comes are: No tail: 189, One tail: 297, Two tails: 243. Find the Probability of the occurrence of each of these events.

Q03. A bag contains 15 cards bearing numbers 1, 2, 3, 4, , 14, 15. A card is drawn from the bag. Find the Probability that it bears :

- (a). a Prime number (b). A number divisible by 2

Q04. A coin is tossed 400 times and outcomes are Tail: 230 Head:170. Find the probability of having a

- (a). Head (b). Tail

Q05. A survey of students was conducted to check the opinion of students about the topic geometry. It was found that 175 students do not like geometry. Find the probability of the students who like geometry.

Q06. Three coins are tossed simultaneously 200 times with the following frequencies of different outcomes.

Outcomes	3 heads	2 heads	1 head	No head
frequency	23	72	77	28

Compute the probability of 2 heads coming up.

Q07. The heights of 70 students are given in the following table.

Heights(in cm)	150	160	158	155	164	168
No. of students	10	14	8	15	7	16

Find the probability that a student has height.
(a). 169 cm (b). Less than 150 cm

Q08. A bag contains 20 cards numbered from 1 to 20 one card is drawn from the bag. Find the probability that it bears a prime number.

Q09. Two coins are tossed 340 times and the outcomes are:

- (i). Two tail 115 (ii). one tail 100 (iii). no tail 125.

Find the probability of occurrence of (a). one tail (b). three tail

Q10. To know the option of the students about the subject mathematics a survey of 200 students was

Opinion	No. of students
Like	135
Dislike	65

conducted. The obtained data is given below. Find the probability that a student chosen at random

- (a). like mathematics (b). does not like it

Q11. Out of 17 boys and 13 girls of a class, 1 student is to be selected. Find the probability of selecting a girl.

Q12. A card is drawn from a pack of cards. Find the probability that it is a queen.

Q13. There are 500 tickets of a lottery out of which 10 are prize winning tickets. A person buys one ticket. Find the probability that he gets a prize winning ticket.

Q14. The marks obtained by 30 students is given in the following table: Find the Probability that a student secures

Marks	70	58	60	52	65	75	68
No of students	3	5	4	7	6	2	3

- (a). 60 marks (b). 75 marks (c). Less than 60 marks

Q15. A tyre manufacturing company kept a record of the distance covered shows the results of 1000 cars

Distance (in Km)	Less than 4000	4000-9000	9001-14000	More than 14000
Frequency	20	210	325	445

If you buy a tyre of this company. What is the Probability that

- (a). it will need to be replaced before it has covered 4000 km

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(b). it will last more than 9000 km

(c). it will need to be replaced after it has covered somewhere between 4000 km and 14000 km.

Q16. The ages of 30 workers in a factory are as follows. Find the probability that the age of a works lies in the interval

Age(In years)	21-23	23-25	25-27	27-29	29-31	31-33	33-35
No of works	3	4	5	6	5	4	3

(a). 27-29

(b). 29-35

(c). 21-27

Q17. A dice is thrown once. Find the probability of getting

(a). a prime number

(b). a number less than 5

Q18.

Outcome	1	2	3	4	5	6
Frequency	90	60	65	70	80	85

A die is thrown 450 times and outcomes are noted in the frequency distribution table given. Find the probability of the occurrence of the event.

(a). 4

(b). a number < 3

(c). 7

Q19. From a well- shuffled pack of 52 cards, a card is drawn at random, find the probability that it is :

(a). A spade

(b). Black

(c). Ace of diamond

Q20. The central Board of secondary education has a waiting list of examinations of 150 Persons. Out of these, 60 are women and 90 are men. One examines is to selected to replace an examines who has not reported at the centre find the probability that the examiner selected is a :

(a). woman

(b). man

Q21. Two coins are tossed 250 times and the outcomes are :

(a). No head 70

(b). one head 85

(c). Two heads 95 .

Find the probability of the occurrence of each of these events.

Q22. Out of 100 balls in a bag 25 are green, 30 are yellow and 45 are white. Find the Probability that a ball drawn from the bag is

(a). green

(b). yellow

(c). white

Q23. Eleven bags of wheat flour, each marked 5 kg actually contained the following weights of flour (in kg) 4.97, 5.05, 5.08, 5.03, 5.00, 5.06, 5.08, 4.98, 5.04, 5.07, 5.00

Find the probability that any of these bags chosen at random contains more than 5 kg of flour.

Q24. 1500families with 2 children were selected randomly and the following data were recorded. Compute

No. of girls in a family	2	1	0
No. of families	475	814	211

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

(a). 2 girls

(b). 1 girl

(c). No girl

Also check whether the sum of these probabilities is 1.

Q25. Fifty seeds were selected at random from each of 5 bags of seeds and were kept under standardized condition favorable to germination. After 20 days, the number of seeds which had germinated in each collection were counted and recorded as follows.

Bag	1	2	3	4	5
No. of seeds germinated	40	48	42	39	41

What is the probability of germination of

(a). More than 40 seeds in a bag?

(b). 49 seeds in a bag

(c). More than 35 seeds in a bag

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Q26. It is known that a box of 550 bulbs contain 22 defective bulbs. One bulb is taken out at random from the box. Find the probability of getting

- (a). Defective bulbs (b). Good bulbs

Q27.

Marks obtained	0-10	10-20	20-40	40-45	45-60	60-70	70-80
No. of students	4	8	20	10	12	6	10

Frequency distribution of marks obtained by 70 Students is given:

Find the probability that the marks obtained by a student lies In the internal

- (a). 0-40 (b). 0-80 (c). 80-90

Q28. A box contains 150 balls of red, blue and white colours out of these 50 balls are red, 40 balls are blue and 60 balls are white. One ball is drawn from the bag. Find the probability that the ball drawn is

- (a). Red (b). blue (c). white

Q29. A die is thrown 500 times. The frequency of the outcomes of the event 1, 2, 3, 4, 5 and 6 are recorded in the following frequency distribution table. Find the probability of the occurrence of an

Outcome	1	2	3	4	5	6
Frequency	85	75	80	90	100	70

- (a). even number (b). odd number.

Q30. And 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

Monthly income (in Rs)	Number of	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

the table below: Suppose a family is chosen. Find the probability that the family chosen is:

- (a). Earning Rs 10000 – 13000 Per month and owing exactly 2 vehicles
 (b). Earning Rs 16000 or more per month and owning exactly 1 vehicle
 (c). Earning less than Rs 7000 Per month and not own any vehicle.
 (d). Earning Rs 13000-16000 per month and owning more than 2 vehicles
 (e) Owning not more than 1 vehicle.

Q31.

Age of drivers (in yrs)	Accident in one year.				
	0	1	2	3	Over 3
18-29	440	160	110	61	35
30-50	505	125	60	22	18
Above 50	360	45	35	15	9

An insurance company selected 2000 drivers at random in a particular city to find a relationship between age and accidents. The data obtained are given:

Find the probability of the following events for a drives chosen at random from a city :

- (a). Being 18-29 years of age and having exactly 3 accidents in a year.
 (b). Being 30-50 years of age and having one or more accidents in a year.
 (c). Having no. accidents in a year.

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Q32. The weekly pocket expenses of students are given:

POCKET EXPENSES (in Rs.)	45	40	59	71	58	47	65
NO. OF STUDENTS	7	4	10	6	3	8	1

Find the probability that the weekly pocket expenses of a student are

- (a). (a). Rs 59 (b). more than Rs 59 (c). less than Rs 59
(b). Find the sum of probabilities computed in (i), (ii), and (iii)s

Q33. Cards marked 2 to 101 are placed in a box and mixed thoroughly. One card is drawn from the box. Find the probability that number on the card is (a). an even number (b). a number less than 14 (c). a number which is a perfect square (d). a prime number less than 20. (v) an odd number.

Q34. A bog contains 5 white, 4 red and 3 black balls. A ball is drawn from the bag, Find the probability that it is not black

