DAV INSTITUTIONS, ODISHA

ZONE -1

1. Basic type of questions: --- (30 Questions)

(i) Question no. 1 to 15 carry 1mark each.

Multiple choice question questions

1. In a throw of a die, the probability getting a 5 is

(a) $\frac{1}{3}$ (b) $\frac{1}{6}$ (c) $\frac{2}{3}$ (d) $\frac{5}{6}$

2. If an event cannot occur, then its probability is

(a) 1 (b) $\frac{3}{4}$ (c) $\frac{1}{2}$ (d) 0

3. The sum of the probability of all the event of an experiment is

(a) 0 (b) $\frac{1}{2}$ (c) 1 (d) 3

4. Which of the fallowing cannot be the probability of an event

(a) $\frac{1}{4}$ (b) 0 (c) $-\frac{1}{2}$ (d) 0.8

5. The probability of getting a prime number in a single throw of a dice is

(a) 0 (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{4}$

Fill in the blanks: ---

6. Total number of face card in a pack of playing card is _____.

7. The probability of an event lies between _____.

8. The probability of an event that cannot happen is _____ such an event is called _____.

9. In a single throw of a die the probability of getting a number 8 is _____.

10. Every elementary event associated with a random experiment has _____

Probability.

One ward Or a sentence answer: -

11. A die is thrown once. Find the probability of getting a number less then 5.

12. From a well shuffled pack of cards, a card is drawn at random. Find the probability of getting a black queen.

13. If the probability of winning a game is $\frac{5}{11}$. What is the probability of losing it?

14. Two coins are tossed simultaneously. Find the probability of getting exactly one head.

15. In a single throw of a pair of dice, what is the probability of getting the sum a perfect square? 16. Two dice are thrown at the same time and the product of the numbers appearing on them is noted. Find the probability that the product is a prime number.

(ii) Question no. 16 to 20 carry 2marks each.

17. A bag contains lemon flavored candies only. Malini takes out one candy without looking into the bag. Find the probability that she takes out

(i) An orange flavored candy? (ii) a lemon flavored candy ?

18. Rahim tosses two different coins simultaneously. Find the probability of getting at least one tail.

19. A card is drawn at random from a well shuffled pack of 52 cards. Find the probability that the card drawn is neither a red card nor a queen.

20. A pair of dice is thrown once. Find the probability of getting of getting the same number on each dice.

(iii) Question no. 21 to 27 carry 3marks each.

21. A die is thrown once. Find the probability of getting:

(i) A prime number (ii) a number lying between 2 and 6 (iii) an odd number

22. A bag contains 5 red,8 white and 7 black balls. A ball is drawn at random from the bag. Find the probability that the drawn ball is:

(i)red or white (ii) not black (iii) neither white nor black

23. In a single throw of a pair of different dice, what is the probability of getting

(i) A prime number on each dice? (ii)a total of 9 or 11?

24. Three different coins are tossed together. Find the probability of getting

(i) Exactly two heads (ii)at least two heads (iii)at least two tails.

25. From a pack of 52 playing cards, Jacks, Queens and Kings of red colour are removed. From the remaining, a card is drawn at random. Find the probability that drawn card is:

(i) a black king . (ii) a card of red colour. (iii) A card of black colour.

26. There are 100 cards in a bag on which numbers from 1 to 100 are written. A card is taken out from the bag at random. Find the probability that the number on the selected card:

(i) is divisible by 9 and is a perfect square.

(ii) is a prime number greater than 80.

27. A bag contains 25 cards numbered from 1 to 25. A card is drawn at random from the bag. Find the probability that the number on the drawn card is:

(i) divisible by 3 or 5. (ii) A perfect square number.

(iv) Question no. 28 to 30 carry 4marks each.

28. Cards numbered from 11 to 60 are kept in a box. If a card is drawn at random from the box, find the probability that the number on the drawn card is

(i) An odd number (ii) a perfect square number

(iii) divisible by 5 (iv) a prime number less than 20

29. A game of chance consists of spinning an arrow on a circular board, divided into 8 equal parts, which comes to rest pointing at one of the numbers 1,2,3,…, 8 which are equally likely outcomes. What is the probability that the arrow will point at

(i) an odd number (ii) a number greater than 3 (iii) a number less than 9.

30. A card is drawn at random from a well-shuffled deck of playing cards. Find the probability that the card drawn is

(i) a card of spade or an ace (ii) a black king.

(iii) neither a jack nor a king (iv) either a king or a queen

2. Standard type of questions :- (20 Questions)

(i) Question no. 1 to 10 carry 1mark each.

Multiple choice question questions

1. Two dice are thrown simultaneously. The probability of getting a sum of 9 is:
(i) 1/10 (ii) 3/10 (iii) 1/9 (iv) 4/9

2. 100 cards are numbered from 1 to 100. Find the probability of getting a prime number.
(i) 3/4 (ii) 27/50 (iii) 1/4 (iv) 29/100

3. What is the probability of getting 53 Mondays in a leap year?
(i) 1/7 (ii) 53/366 (iii) 2/7 (iv)7/366

4. A number is selected at random from first 50 natural numbers. Then the probability that it is a multiple of 3 and 4 is:
(i) 7/50 (ii) 4/25 (iii) 1/25 (iv) 2/25

Fill in the blanks: -

5. When the sum of probability of two events is 1, the events are called _____.

6. Probability of an event E + probability of the event " not E " = _____.

7. Total number of face card in a pack of playing card is _____.

One ward Or a sentence answer :-

8. A number is chosen at random from the numbers -3, -2 ,-1 ,0 ,1,2,3.What will be the probability that square of this number is less then or equal to 1 ?

9. One card is drawn at random from a pack of 52 cards .Find the probability that the card drawn is an ace or black.

10. Find the probability of getting a` six` at the throw of an unbiased die .

(ii) Question no. 11 to 14 carry 2marks each.

11. Two different dice are tossed together. Find the probability

1. that the number on each die is even.
2. that the sum of numbers appearing on the two dice is 5

12.Two different dice are rolled simultaneously. Find the probability that the sum of numbers appearing on the two dice is 10.
13. A die is tossed once. Find the probability of getting an even number or a multiple of 3.

14. A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability that the drawn card is neither a king nor a queen.

(iii)Question no. 15 to 17 carry 3 marks each.

15. A card is drawn from a well shuffled deck of 52 cards. Find the probability of getting

1. a king of red colour
2. a face card
3. the queen of diamonds.

16. A box contains 35 blue, 25 white and 40 red marbles. If a marble is drawn at random from the box, find the probability that the drawn marble is

1. white
2. no blue
3. neither white nor blue.

17. A box contains 70 cards numbered from 1 to 70. If one card is drawn at random from the box, find the probability that it bears

1. a perfect square number.
2. a number divisible by 2 and 3.

(iii)Question no. 18 to 20 carry 4 marks each.

18. Out of cards numbered from 1 to 20, which are mixed thoroughly, a card is drawn at random. Find the probability that the drawn card bears a number which is a multiple of 3 or 7.

19. A group consists of 12 persons, of which 3 are extremely patient, other 6 are extremely honest and rest are extremely kind. A person from the group is selected at random. Assuming that each person is equally likely to be selected, find the probability of selecting a person who is

1. extremely patient
2. extremely kind or honest.
   Which of the above values you prefer more?

20. A piggy bank contains hundred 50 p coins, fifty 1 coins, twenty 2 coins and ten 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell

1. will be a 50 p coin
2. will be of value more than 1
3. will be of value less than 5
4. will be a 1 or 2 coin

3. Advance type of questions :- (10 Questions)

1. A bag contains 12 balls, out of which x are white.

1. If one ball is drawn at random, find the probability that it is a white ball.
2. If 6 more white balls are put in the bag, the probability of drawing a white ball is double than that in

- Find x.

2. A box contains cards bearing numbers from 6 to 70. If one card is drawn at random from the box, find the probability that it bears

1. a one digit number.
2. a number divisible by 5.
3. an odd number less than 30.
4. a composite number between 50 and 70.

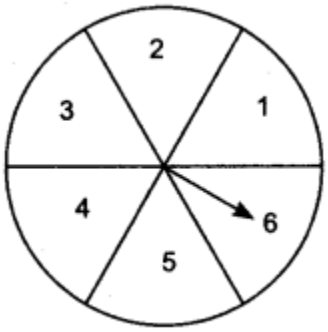
3. The probability of selecting a red ball at random from a jar that contains only red, blue and orange balls is 1/4. The probability of selecting a blue ball at random from the same jar is 1/3. If the jar contains 10 orange balls, find the total number of balls in the jar

4. A group consists of 12 persons, of which 3 are extremely patient, other 6 are extremely honest and rest are extremely kind. A person from the group is selected

at random. Assuming that each person is equally likely to be selected, find the probability of selecting a person who is

1. extremely patient
2. extremely kind or honest.
3. Which of the above values you prefer more?

5. In figure is shown a disc on which a player spins an arrow twice. The fraction a/b is formed, where ‘a’ is the number of sector on which arrow stops on the first and b is the number of the sector in which the arrow stops on second spin. On each spin, each sector has equal chance of selection by the arrow. Find the probability that the $a/b > 1$.



6. A bag contains cards numbered from 1 to 49. A and C is drawn from the beg at random, after mixing the cards thoroughly. Find the probability that the number on the drawn card is

1. an odd number.
2. a multiple of 5.
3. a perfect square.
4. an even prime number

7. Red queens and blackjacks are removed from a pack of 52 playing cards. A card is drawn at random from the remaining cards, after reshuffling them. Find the probability that the drawn card is

1. a king.
2. of red colour.
3. a face card.
4. a queen.

8. Five cards – the ten, jack, queen, king and ace of diamonds, are well shuffled with their faces downwards. One card is then picked up at random.

- What is the probability that the drawn card is the queen?
- If the queen is drawn and put aside, and a second card is drawn, find the probability that the second card is

1. an ace
2. a queen

9. Two dice, one blue and one grey, are thrown at the same time. Write down all the possible outcomes. What is the probability that the sum of the two numbers appearing on the top of the die

1. 8?
2. 13?
3. Less than or equal to 12?

10. Apoorv throws two dice once and computes the product of the number appearing on the dice. Peehu throws one dice and squares the number that appears on it. Who has the better chance of getting the number 36? Why?

END

SCORING KEY (BASIC QUESTION)

QS. NO.	QUESTION AND ITS VALUE POINT	MARK ALLOTED	FULL MARK
1.	In a throw of a die, the probability getting a 5 is (a) $\frac{1}{3}$ (b) $\frac{1}{6}$ (c) $\frac{2}{3}$ (d) $\frac{5}{6}$ ANS: b ($\frac{1}{6}$)	**1**	**1**
16.	Two dice are thrown at the same time and the product of the numbers appearing on them is noted. Find the probability that the product is a prime number. ANS: Product of the number on the dice is prime number i.e., 2, 3, 5. The possible way are (1,2), (2,1), (1,3), (3,1), (5,1), (1,5). So, number of possible ways = 6, ∴ Required probability = $\frac{6}{36} = \frac{1}{6}$	**1** **1**	**2**
21.	A die is thrown once. Find the probability of getting: (i) A prime number (ii) a number lying between 2 and 6 (iii) an odd number ANS: Total number of outcomes of throwing a dice = 6. (i) Favorable number of outcomes = 3 P(prime number) = $\frac{3}{6} = \frac{1}{2}$ (ii) Favorable number of outcomes = 3 P(number lying between 2 and 6) = $\frac{3}{6} = \frac{1}{2}$ (iii) Favorable number of outcomes = 3 P(odd number) = $\frac{3}{6} = \frac{1}{2}$	**1** **1** **1**	**3**

28.	Cards numbered from 11 to 60 are kept in a box. If a card is drawn at random from the box, find the probability that the number on the drawn card is (i) An odd number (ii) a perfect square number (iii) divisible by 5 (iv) a prime number less than 20 ANS: Number of possible outcomes = 60–11+1 = 50 (i) Favorable number of outcomes of odd number = 25 P(odd number) = $\frac{25}{50} = \frac{1}{2}$ (ii) Favorable number of outcomes of perfect square number = 4 P(perfect square number) = $\frac{4}{50} = \frac{2}{25}$ (iii) Favorable number of outcomes of number divisible by 5 = 10 P(number divisible by 5) = $\frac{10}{50} = \frac{1}{5}$ (iv) Favorable number of outcomes of prime number less than 20 = 4 P(prime number less than 20) = $\frac{4}{50} = \frac{2}{25}$	**1** **1** **1** **1**	**4**

END