



# VIVEK TUTORIALS

X (English)

(Probability)

Mathematics Part - I-(Probability)

DATE: 06-02-19

TIME: 1 Hr

MARKS: 40

SEAT NO:

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## Q.1 Multiple Choice Questions

2

- 1 A die is rolled. What is the probability of getting a multiple of 2?  
a.  $\frac{1}{4}$       b.  $\frac{1}{3}$       c.  $\frac{1}{2}$       d. 1
- 2 What is the probability of the event that a number chosen from 1 to 60 is an odd number?  
a. 20%      b. 40%      c. 50%      d. 60%

## Q.2 Attempt the following

4

- 1 In a class of 42 students in Model High School, 3 students use spectacles. Fill in the following boxes to find the probability of a students selected at random wearing spectacles.  
The total number of students in the class is 42.

$$\therefore n(S) = \underline{\hspace{2cm}}$$

Let the event, a student uses spectacles, be A.

$$\therefore n(A) = \underline{\hspace{2cm}}$$

$$\therefore P(A) = \underline{\hspace{2cm}}$$

$$\therefore P(A) = \underline{\hspace{2cm}}$$

- 2 Out of 200 students from a school, 135 like Kabbaddi and the remaining students do not like the game. If one student is selected at random from all the students, find the probability that the student selected doesn't like Kabbaddi.

Let S be the sample space.

Total number of students = 200

$$\therefore n(S) = \underline{\hspace{2cm}}$$

Number of students like Kabbaddi = 135

$$\therefore \text{Number of students doesn't like Kabbaddi}$$

$$= 200 - 135$$

$$= \underline{\hspace{2cm}}$$

Event A : The student selected doesn't like Kabbaddi.

$$\therefore n(A) = 65$$

$$P(A) = \underline{\hspace{2cm}}$$

$$\therefore n(A) = \frac{65}{200}$$

$$= \frac{13}{40}$$

$$\therefore \text{Probability of selected students doesn't like kabbaddi is } \underline{\hspace{2cm}}$$

## Q.3 Solve the following

8

- 1 In each of the following experiments, write the sample space S and the number of sample points n(S)
  - i. three coins are tossed simultaneously.
  - ii. A die is rolled.
  - iii. Form two-digit numbers using the digits 0,1,2,3 without repeating the digit.
- 2 Write the sample space S and the number of sample points n(S):  
A die is thrown.
  - (i) P is the event of getting a numbers smaller than 4.
  - (ii) Q is the event of getting a numbers greater than 4.
- 3 Two coins are tossed simultaneously, Find the probability of getting at least one head.

4 Write the sample space  $S$  and the numbers of sample points  $n(S)$  : A die is thrown.

i.  $P$  is the event of getting a numbers smaller than 4.

ii.  $Q$  is the event of getting a numbers greater than 4.

Q.4 Answer the following

6

1 A box contains 30 tickets, bearing only one number from 1 to 30 on each. If one ticket is drawn at random, find the probability of an event that the ticket drawn bears

(1) an odd number (2) a complete square number.

2 Each card bears one letter from the word 'mathematics' The cards are placed on a table upside down. Find the probability that a card drawn bears the letter 'm'.

3 Six faces of a die are as shown below.

A
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B
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C
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D
---

E
---

A
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If the die is rolled once, find the probability of -

(1) 'A' appears on upper face. (2) 'D' appears on upper face.

Q.5 Solve the following

6

1 A die is thrown.

(i)  $P$  is the event of getting an odd number.

(ii)  $Q$  is the event of getting an even number. Write  $n(S)$ ,  $n(P)$ ,  $n(Q)$ . Mention the types of events:

2 There are three boys and three girls. An environment committee of two is to be formed. Write the sample space  $S$ , the number of sample points  $n(S)$ . Express the following events and find the total number of elements in the following events:  $A$  is the event that the committee should contain atleast two girls.  $B$  is the event that the committee should contain both the boys.  $C$  is the event that there is only one girl in the committee.  $D$  is the event that there is at the most one boy in the committee. Find the events among the events defined above which are :

(i) complementary events (ii) mutually exclusive and (iii) exhaustive events

Q.6 Answer the following

8

1 Write sample space ' $S$ ' and number of sample point  $n(S)$  for each of the following experiments. Also write events  $A$ ,  $B$ ,  $C$  in the set form and write  $n(A)$ ,  $n(B)$ ,  $n(C)$ .

One coin and one die are thrown simultaneously.

Condition for event  $A$  : To get head and an odd number.

Condition for event  $B$  : To get a head or tail and an even number.

Condition for event  $C$  : Number on the upper face is greater than 7 and tail on the coin.

2 There are six cards in a box, each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows,

(1) a natural number. (2) a number less than 1. (3) a whole number. (4) a number is greater than 5.

Q.7 Answer the following

6

1 If two dice are rolled simultaneously, find the probability of the following events.

(1) The sum of the digits on the upper faces is at least 10.

(2) The sum of the digits on the upper faces is 33.

(3) The digit on the first die is greater than the digit on second die.

2 A coin is tossed and a die is thrown simultaneously.

i.  $B$  is the event of getting a head and an odd number.

ii.  $Q$  is the event of getting either H or T and an even number.

iii.  $R$  is the event of getting a prime number on die and a t

Find the probability for each event.