Quiz questions 1:

1) A = {1, 3, 5} and B = = {3, 5, 7}

2) Let A be the set of first 10 even positive integers and B be the set of first 10 odd positive integers. Now find out
(i) A U B
Solution: A = {2, 4, 6, 8, 10, 12, 14, 16, 18, 20} and B = {1, 3, 5, 7, 9, 11, 13, 15 ,17, 19}
A U B = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20}

(ii) A ∩ B

Solution: A ∩ B = {}

(iii) A compliment to B.
Solution: {}

3) Let U be the set of all first 20 natural number, A be the set of all prime numbers and B be the set of all even numbers. Now find out
(i) A U B
Solution: U = {1, 2, 3, 4, 5, 6...., 19, 20 }

A = {2, 3, 5, 7, 11, 13, 17, 19}
B = {2, 4, 6, 8,10, 12, 14, 16, 18, 20}

AUB = {2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20}

(ii) A∩B
Solution: {2}

(iii) A compliment to U
Solution: {1, 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20 }

4) Which of the following are examples of the null set
(i) Set of odd natural numbers divisible by 2
{} True

(ii) Set of even prime numbers
{2} FALSE

5) Find out all A which are subsets of B
(i) A = {2, 3 and 4} and B = {1, 2, 3, 4 and 5}
Yes here A is a subset of B

(ii) A = {a, b, c} and B = {b, c, d}
No here A is not a subset of B

Quiz questions 2:

1) While rolling a die what is the probability that the number obtained will be a prime number?
Solution: 3/6 = 1/2

2) Which of the following experiments does NOT have equally likely outcomes?
A) Choose a number at random from 1 to 7
Yes it will have equally likely outcomes

B) Toss a coin.
Yes

C) Choose a letter at random from the word TUTORIAL
No, since T letter appeared twice hence it has a bit more chance while randomly chosing

3) What is the probability of choosing a vowel from the alphabet?
A) 21/26 **B)** 5/26 **C)** 1/21 **D)** 17/21

Solution: 5/26

4) A number from 1 to 11 is chosen at random. What is the probability of choosing an odd number?
A) 1/11 **B)** 5/11 **C)** 6/11 **D)** 7/11

Solution: 6/11

5) In a cricket match, a batsman hits a boundary 6 times out of 30 balls he plays. Find the probability that he did not hit a boundary

Solution: 24/30

6) The record of a weather station shows that out of the past 250 consecutive days, its weather forecasts were correct 175 times.
(i) What is the probability that on a given day it was correct?
Solution: 175/250

(ii) What is the probability that it was not correct on a given day?
Answer: 75/250

7) A tyre manufacturing company kept a record of the distance covered before a tyre needed to be replaced. The following table shows the results of 1000 cases.
Table 15.8

Distance (in km)	<4000	4000-9000	9001-14000	>14000
Frequency	20	210	325	445

If you buy a tyre of this company, what is the probability that :
(i) it will need to be replaced before it has covered 4000 km?
Solution:

The total number of trials = 1000.

The frequency of a tyre that needs to be replaced before it covers 4000 km is 20.

So, P(tyre to be replaced before it covers 4000 km) = 20/1000 = 0.02

(ii) it will last more than 9000 km?

Solution:

The frequency of a tyre that will last more than 9000 km is 325 + 445 = 770

So, P(tyre will last more than 9000 km) = 770/1000 = 0.77

Probability = (325 + 445)/1000 = 770/1000 = 77/100

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

Solution:

The frequency of a tyre that requires replacement between 4000 km and 14000 km
= 210 + 325 = 535.
So, P(tyre requiring replacement between 4000 km and 14000 km) = 535/1000 = 0.535