

**ONE TWO ACADEMY****STD 10 MATHEMATICS****STATISTICS AND PROBABILITY****Total:- 25 marks****Time:- 45 minutes****Answer the following questions:****4 x 1 = 4**

1. The range of a set of data is 13.67 and the largest value is 70.08. Find the smallest value.
2. If S is the standard deviation of values p, q, r then standard deviation of  $p-3$ ,  $q-3$ ,  $r-3$  is \_\_\_\_.
3. Express the sample space for rolling two dice using tree diagram.
4. The probability of a sure event is \_\_\_\_.

**Answer any three of the following questions:-****3 x 2 = 6**

5. If the mean and coefficient of variation of a data are 15 and 48 respectively, then find the value of standard deviation.
6. A bag contains 5 blue balls and 4 green balls. A ball is drawn at random from the bag. Find the probability that the ball drawn is (i) blue (ii) not blue.
7. If A and B are two mutually exclusive events of a random experiment and  $P(\text{not } A) = 0.45$ ,  $P(A \cup B) = 0.65$  then find  $P(B)$ .

**Answer any three of the following questions:-****3 x 5 = 15**

9. Find the mean and variance of the first n natural numbers.
10. The mean and standard deviation of 15 observations are found to be 10 and 5 respectively. On rechecking it was found that one of the observation with value 8 was incorrect. Calculate the correct mean and standard deviation if the correct observation value was 23?
11. Two unbiased dice are rolled once. Find the probability of getting
  - (i) a doublet (equal numbers on both dice)
  - (ii) the product as a prime number
  - (iii) the sum as a prime number

(iv) the sum as 1

12. In a class of 35, students are numbered from 1 to 35. The ratio of boys to girls is 4:3.

The roll numbers of students begin with boys and end with girls. Find the probability that a student selected is either a boy with prime roll number or a girl with composite roll number or an even roll number.

