

STATISTICS AND PROBABILITY UNIT TEST

CLASS: 10

SUB: MATHS

MARKS:50

TIME: 1.30 Hrs.

7 x 1 = 7

I. Choose the correct answer:

- Which of the following is not a measure of dispersion?
(A) Range (B) standard deviation (C) Arithmetic mean (D) variance
- The mean of 100 observations is 40 and their standard deviation is 3. The sum of squares of all observations is
(A) 40000 (B) 160900 (C) 160000 (D) 30000
- If the standard deviation of x, y, z is p then the standard deviation of $3x+5, 3y+5, 3z+5$ is
(A) $3p+5$ (B) $3p$ (C) $p+5$ (D) $9p+15$
- The probability a red marble selected at random from a jar containing p red, q blue and r green marbles is
(A) $\frac{q}{p+q+r}$ (B) $\frac{p}{p+q+r}$ (C) $\frac{p+q}{p+q+r}$ (D) $\frac{p+r}{p+q+r}$
- Kamalam went to play a lucky draw contest. 135 tickets of the lucky draw were sold. If the probability of Kamalam winning is $\frac{1}{9}$, then the number of tickets bought by Kamalam is
(A) 5 (B) 10 (C) 15 (D) 20
- A purse contain 10 notes of Rs.2000, 15 notes of Rs.500, and 25 notes of Rs.200. One note is drawn at random. What is the probability that the note is either a Rs.500 note or Rs.200 note?
(A) $\frac{1}{5}$ (B) $\frac{3}{10}$ (C) $\frac{2}{3}$ (D) $\frac{4}{5}$
- The sum of all deviations of the data from its mean is
(A) Always positive (B) always negative (C) zero (D) non-zero integer

II. Answer any FIVE questions: (Q.No.14 is compulsory)

5 x 2 = 10

- Find the range and coefficient of range of the following data: 25,67,48,53,18,39,44.
- A wall clock strikes the bell once at 1 o'clock, 2 times at 2 o'clock, 3 times at 3 o'clock and so on. How many times will it strike in a particular day. Find the standard deviation of the number of strikes the bell make a day.
- The mean of a data is 25.6 and its coefficient of variation is 18.75. Find the standard deviation.
- Two coins are tossed together. What is the probability of getting different faces on the coins?
- A coin is tossed thrice. What is the probability of getting two consecutive tails?
- The probability of happening of an event A is 0.5 and that of B is 0.3. If A and B are mutually exclusive events, then find the probability that neither A nor B happen.
- What is the probability that a leap year selected at random will contain 53 Saturdays?

III. Answer any FIVE questions: (Q.No.21 is compulsory)

5 x 5 = 25

- The number of televisions sold in each day of a week are 13,8,4,9,7,12,10. Find its standard deviation.
- The rainfall recorded in various places of five districts in a week are given below. Find its standard deviation.

Rainfall (in mm)	45	50	55	60	65	70
No.of places	5	13	4	9	5	4

- For a group of 100 candidates the mean and standard deviation of their marks were found to be 60 and 15 respectively. Later on it was found that the scores 45 and 72 were wrongly entered as 40 and 27. Find the correct mean and standard deviation.

18. From a well shuffled pack of 52 cards, one card is drawn at random. Find the probability of getting (i) red card (ii) heart card (iii) red king (iv) face card (v) number card.
19. Two dice are rolled together. Find the probability of getting a doublet or sum of faces as 4.
20. 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.
21. Find the coefficient of variation of 24,26,33,37,29,31.

IV. Answer all the question:

1 x 8 = 8

22. Construct a triangle to a given triangle PQR with its sides equal to $\frac{3}{5}$ of the triangle PQR (scale factor $\frac{3}{5} < 1$)

(OR)

A bus is travelling at a uniform speed of 50km/hr. Draw the distance-time graph and hence find (i) the constant of variation (ii) how far will it travel in $1\frac{1}{2}$ hr (iii) the time required to cover a distance of 300 km from the graph.