



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Write short answers to each of the followings. (2x10)

- i) How descriptive Statistics is helpful in decision making?
- ii) What is the use of Box-Cox plots?
- iii) Write any four tools of exploratory data analysis.
- iv) What is the role of Moments in measuring scatterness.
- v) List the parameters of Normal distribution.
- vi) What is the main difference between the Binomial and Poisson experiments?
- vii) Differentiate between trial, event and sample space.
- viii) What purpose does the Baye's theorem serve?
- ix) Write any two properties of least square regression line.
- x) Write the properties of correlation coefficient.

Q.3. Given the following frequency distribution of weights, calculate the Mean and geometric mean. (10)

Weight (grams)	65-84	85-104	105-124	125-144	145-164	165-184	185-204
<i>f</i>	9	10	17	10	5	4	5

Q.4. Goals scored by two teams A and B in a football season were as follows: (06)

No. of goals scored in a match (x_i)	Number of matches	
	A	B
0	27	17
1	9	9
2	8	6
3	5	5
4	4	3

By calculating the co-efficient of variation in each case, find which team may be considered more consistent.

Q.5. Two coins are tossed. What is the conditional probability that two heads result, given that there is at least one head? (04)

Q.6. Two hundred passengers have made reservations for an airplane flight. If the probability that a passenger who has a reservation will not show up is 0.01, what is the probability that exactly three will not show up? (05)

Q.7. Let X be $N(100, 225)$. Find the following probabilities: (05)

- | | |
|------------------------------|---------------------------------|
| a) $P(X \leq 92.5)$, | b) $P(X \leq 107.5)$, |
| c) $P(X \geq 124)$, | d) $P(112 \leq X \leq 128.5)$, |
| e) $P(91 \leq X \leq 127)$, | |



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Fourth Semester – 2019

Paper: Probability and Statistics

Course Code: STAT-221 / IT-22407 Part – I (Compulsory) Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x1=10)

- i) Statistics at large, deals with _____
 - a) sampling
 - b) uncertainty.
 - c) model building
 - d) correlations.
- ii) ----- cannot be computed in case of open-end classes
 - a) median
 - b) mean
 - c) mode
 - d) central tendencies
- iii) Dispersion measures _____ of any data.
 - a) variability
 - b) scatterness
 - c) efficiency
 - d) a&b
- iv) Central tendencies of any data are _____
 - a) central observations
 - b) Balancing points
 - c) single figure presentation of data
 - d) all of the above
- v) Stem & leaf diagram and Histogram can lead to judge _____
 - a) scatterness
 - b) Normality
 - c) a&b
 - d) none of the above.
- vi) Poisson probability deals with
 - a) Discrete events
 - b) rare events
 - c) limited number of observations
 - d) a & b both
- vii) The two events A and B are mutually exclusive which of the following statements must be true?
 - a) $P(A \cup B) = 0$
 - b) $P(A) + P(B) = 1$
 - c) $P(A \cap B) = 1$
 - d) Not any of a, b, & c
- viii) If $P(A) = 1 - P(B)$, then A and B are _____ events.
 - a) Mutually exclusive events
 - b) complimentary events
 - c) exhaustive events
 - d) both b&c
- ix) The strength of a linear relationship between two variables Y and X is measured by
 - a) r^2
 - b) R^2
 - c) r
 - d) None of above
- x) In the regression equation $Y = \alpha + \beta x + \varepsilon$, both X and Y variables are
 - a) Random
 - b) Fixed
 - c) X is fixed and Y is random
 - d) Y is fixed and X is random