Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BPLAN – SEMESTER 1– EXAMINATION – SUMMER 2015

Subject Code: 1015504 Date:06/06/2015

Subject Name: Statistical and Quantitative Methods in Planning - I

Time:02.30pm-04.30pm Total Marks: 50

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** (1) Data derived from questionnaire based survey is **06**

(a) Partly primary data (b) Primary data
(c) Secondary data (d) Partly secondary data

(2) For the given data series -2,-3,0,3,4,5,9, mean will be

(a) 2.29 (b) 2.66
(c) 3.71 (d) 4.33

(3) If we roll a dice 6 times, the probability of getting 3 will be

(a) 0.17 (b) 0.5
(c) 0.25 (d) 1

(4) Time series data is a set of observations taken

(a) At a time (b) Over a period of time
(c) Both (d) None

(5) In a bar chart, the height of the bar represents

(a) Frequency (b) Class
(c) Interval (d) None

(6) For any given data, median will be

(a) Sum of observations / no. of observations (b) Most repetitive number
(c) Middle observation, after arranging it in either ascending or descending order (d) None

(b) Define following: (Any Two) **04**

(1) Marginal probability
(2) Unimodal data
(3) Scatter diagram

Q.2 **(a)** Prepare a sample questionnaire for conducting primary survey in a public park to evaluate its infrastructure facilities. **05**

(b) Explain with example – marginal probability, union probability, joint probability and conditional probability **05**

OR

(b) What is time series analysis? Explain seasonal, cyclic and irregular variations. **05**

Q.3 Below given is the data of school students and their commuting type depending up on the class they are from

Type of commuting	Class 1 - 4	Class 5 - 8	Class 9 - 12
Two Wheeler	54	13	64
Cycle	92	29	82
Shared Auto	64	54	45
Shared Van	27	87	32

For the given data set

(a) Draw a pie chart showing vehicle wise distribution for students of class 1- 4 **05**

(b) Draw a histogram showing class wise distribution for students coming by two wheeler **05**

OR

Q.3 For above given data

(a) Draw a bar chart showing class wise distribution for students coming by shared auto **05**

(b) Draw a multiple bar chart, showing class wise distribution for students coming by various vehicles **05**

Q.4 Below given is the data of school students and their commuting type depending up on the class they are from

Type of commuting	Class 1 - 4	Class 5 - 7	Class 8 - 10	Class 11 - 12
Two Wheeler	54	13	64	82
Cycle	92	29	82	56
Shared Auto	64	54	45	32
Shared Van	27	87	32	34

(a)

1. What is the probability that, any randomly picked student is coming by cycle? **05**
2. What is the probability that, any randomly picked student is from class 1 -4?

(b) 1. What is the probability that, any randomly picked student is from class 8-10 or **05**

coming by cycle or both?
2. What is the probability that, any randomly picked student is from class 5-7 or coming by cycle or both?

OR

Q.4 **(a)** 1. What is the probability that any randomly picked student is from class 11-12 and coming by shared auto? **05**
2. What is the probability that any randomly picked student is from class 11-12 and coming by shared van?

(b) 1. What is the probability that a student picked up from class 5-7 is coming by a two wheeler? **05**
2. What is the probability that a student picked up from class 1-4 is coming by a shared van?

Q.5

80	40	23	65	43
12	43	21	67	90
23	54	87	34	37
91	28	34	48	43

For the above given data saeries

(a) Find out the mean, its variance and standard deviation **05**
(b) Find out mode, median and co efficient of variation for the given data set **05**

OR

Q.5 **(a)** Explain in detail with example **05**

1. Pie Chart
2. Bar Chart
3. Histogram
4. Frequency Polygon
5. Scatter Diagram

(b) Define and explain with example **05**

1. Arithmetic mean
2. Mode
3. Median
4. Variance
5. Standard Deviation

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