

Subject : Statistical Techniques

Day : Friday
Date : 10/06/2016



Time : 10.00 AM TO 1.00 PM
Max Marks : 70 Total Pages : 2

N.B.:

- 1) Attempt **ANY THREE** questions from Section – I and attempt **ANY TWO** questions from Section - II.
- 2) Answers to both the questions should be written in the **SAME** answer book.
- 3) Use of non programmable **CALCULATOR** is allowed.
- 4) Figures to the right indicate **FULL** marks.
- 5) Graph papers and statistical tables will be provided if required.

SECTION - I

- Q.1** a) What do you understand by ‘Primary Data’? Explain in detail any two methods [07]
of primary data collection.
- b) Construct the Histogram using the following data in respect of the quantity of [07]
milk per bag.

Quantity (in ml)	485-490	490-495	495-500	500-505	505-510	510-515
No. of Bags	29	33	38	27	15	8

Using the graph, find the approximate value of the mode.

- Q.2** Find the Arithmetic Mean and Mode for the following data in respect of the [14]
runs scored per innings by a cricketer in last 5 years.

Runs scored	0 – 25	25 – 50	50 – 75	75 – 100	100 – 125	125 – 150
No. of innings	3	7	11	9	6	4

- Q.3** a) Compute the Arithmetic Mean, Mode and Median. [07]
36, 37, 48, 36, 45, 57, 36.
- b) Following is the data in respect of the weekly wages of the workers. Using the [07]
data calculate the Quartile Deviation and coefficient of the Quartile Deviation.

Weekly wages	1330-1350	1350-1370	1370-1390	1390 -1410	1410- 1430	1430-1450	1450-1470
No. of workers	16	39	58	60	22	15	10

- Q.4** a) Given the following information: [07]

Events	Probability	Actions		
		A ₁	A ₂	A ₃
E ₁	0.4	80	70	50
E ₂	0.5	50	45	40
E ₃	0.1	25	-10	0

Using Expected Pay – Off criterion, determine the optimal decision.

P.T.O.

- b) Following are the ranks given to contestants by three Judges A, B and C: [07]

Ranks by A	1	2	3	4	5	6
Ranks by B	5	6	1	2	3	4
Ranks by C	3	2	1	4	5	6

Which of the pair of the judges has the nearest approach?

- Q.5 Write short notes on **ANY TWO** of the following: [14]

- Histograms
- Regression lines
- Decision making process
- Binomial distribution

SECTION - II

- Q.6 The polythene bags from two manufacturers A and B were tested for bursting pressure and following are the results after putting some weights in the bags: [14]

Weights (in kgs)	5.0–10.0	10.0–15.0	15.0–20.0	20.0–25.0	25.0–30.0	30.0–35.0
No. of bags – A	2	9	29	54	11	5
No. of bags – B	3	8	27	52	14	7

Using coefficient of variation, find which manufacturer's bags are more consistent?

- Q.7 The figures for demand and the price for nine years are recorded as below: [14]

Unit Price (Rs.)	15	16	17	18	19	20	21	22	23
Demand (in thousands)	84	78	70	75	66	67	62	58	60

- Calculate the Karl Pearson's correlation coefficient.
- Using appropriate regression line, estimate the price when demand is 80,000 units.

- Q.8 a) Given the following table: [07]

X	0	1	2	3	4	5
P(X)	0.10	0.27	0.30	0.18	0.10	0.05

Find $E(X)$ and $V(X)$ with usual notation.

- b) Watches are assembled at two units, with 55% at unit A and 45% at unit B. The chances of non-defective quality watch for unit A is 95% and that for unit B is 92% respectively. If a watch is selected at random from total output and found to be defective, find probability that it came from B? [07]

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