VCD 10423 FYFM SEM II Business Statistics 2.5 hrs 75 marks

(1) All questions are compulsory subject to internal choice.
(2) Figures to right indicate full marks.

Q.1 A) **Fill in blanks choosing the correct alternative: (Any eight)** (8)

1) The most appropriate diagram to represent the data relating to the monthly expenditure different items by a family is
a) Pie diagram (b) line graph (c) rectangular diagram (d) frequency curve

2) If there are extreme values present in the data, the following measure is suitable _____
a) Arithmetic mean b) Median
c) Mode d) None of these

3) The process of collecting data is called _____
a) Survey b) Samples c) Population d) None of these.

4) The word 'mean' or 'average' only refer to:
(a) Arithmetic mean (b) Median
(c)Range (d) Mode

5) Two regression coefficient s are of _____ sign
a) Same b) different
c) both (a) and (b) d) None of these

6) Price and demand of goods will always show _____ correlation.
(a) positive (b)negative (c)No (d)inverse

7) The regression lines cut each other at _____
(a)$\bar{x}$ (b)$\bar{x}$ and $\bar{y}$ (c) $\bar{y}$ (d) (0,0)

8) The information is to be collected from educated people in a large area, suitable method shall be
(a) sensus (b) Questionnaire
(c) Direct persona investigation (d) Through correspondents

9) The most repeated value in the given data set is called _____
(a) Range (b) Mode (c) IQR (d) Median

10) Cumulative frequency curve can be used for the collection of _____
a) Mean b) Median
c) Mode d) Geometric mean.

B) State True or False: (Any seven) (7)

1) The inter-quartile range is based on only two values.
2) The two regression coefficient always have the same sign.
3) Mode can be located using pie diagram.
4) A measure of spread or scatter of data is called measure of dispersion.
5) Diagrams are useful in drawing attention of the public.
6) The data complied through various published or unpublished sources is known as primary data.
7) Pie diagram is a circle divided into sectors.
8) The two regression coefficients are 0.8 and 0.2 then correlation coefficient is 0.4
9) there can be more than one modal values in a data set
10) If r = 1, there is perfect positive relationship between the two given variables.

VCD _____ FYFM SEM II Business Statistics 2.5 hrs 75 marks

Q.2] A) Calculate arithmetic mean and mode for the following data: (8)

Class interval	400-600	600-800	800-1000	1000-1200	1200-1400	1400-1600
Frequency	5	10	30	25	20	10

B) Find the median for the following grouped data. (7)

Class Intervals	0-4	4-8	8-12	12-16	16-20
Frequency	2	6	10	14	18

OR

C) Calculate mode for the following data: (8)

Class interval	10 - 30	30 - 50	50 - 70	70 - 90	90 - 110
Frequency	12	20	26	33	11

D) Find range, arithmetic mean and median for the following data: (7)

50 ,55, 57, 49, 54, 61, 64, 69, 58, 56

Q.3] A) Find the standard deviation for the following data: (8)

Class interval	0-5	5-10	10-15	15-20	20-25
Frequency	2	3	7	5	3

B) Draw a histogram for the following data (7)

Class interval	60-70	70-80	80-90	90-100	100-110
Frequency	2	5	12	7	5

OR

C) Write less than and more than cumulative frequencies for the following data. Draw less than cumulative curve and locate median graphically. (8)

Class interval	10-20	20-30	30-40	40-50	50-60	60-70
Frequencies	10	5	23	12	5	15

D) The average marks of group of 100 students in a accounting are 60 and for another group of 50 students, the average marks are 90. Find the average marks of combined group of 150 students. (7)

CD _____ FYFM SEM II Business Statistics 2.5 hrs 75 marks

Q.4] A) Calculate coefficient of correlation by method of Spearman's Rank correlation. (8)

X		44	49	52	52	47	76	65	60	63	58
Y		48	58	45	60	43	80	58	50	77	46

B) Find Karl Pearson's coefficient of correlation given for the following data. (7)

$\sum X = 65$, $\sum Y = 30$, $\sum XY = 750$

$\sum X^2 = 3261$, $\sum Y^2 = 1004$, $n = 10$.

OR

C) A manufacturer has to decide on the quantities of product A and B. He must produce at least 30 units of unit A per week. The market can not absorb more than 20 units of B per week. The machine time required is 2 hours per unit of A and 3 hours fer unit of B. In all 100 hours are available per week. The profit per unit of A is Rs. 8 and of B is 15. Formulate the LPP for maximum profit and solve it graphically. (8)

D) Solve the following LPP graphically. (7)

Minimize $Z = 6x + 7y$

Subject to $2x + 3y > 12$

$2x + y > 8$;

$X > 0$

$Y > 0$

Q.5A) What is mean by correlation? With respect to the values of coefficient of correlation explain types of correlation in brief. (8)

B) What is random sampling? Explain the different methods of selecting a random sample. (7)

OR

C) **Write short notes on: (Any three)** (15)

1) Write short note on graphs and diagrams.
2) Merits and demerits of Mode.
3) What is a ogive curve? What are the two types of ogive curves? Explain.
4) Write limitations of statistics.
5) Merits and demerits of arithmetic mean.

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