VCD/150423 FYFMG SEM II BUSINESS STATISTICS $2\frac{1}{2}$ HRS 75 MARKS

FYFMG Extra

N.B.: (1) Figures to the right indicate full marks.

(2) Use of simple calculator is allowed.

Q.1 (A) Fill in the blanks using correct alternatives:(Any Eight) (8)

(1) The sources of the data are _____.

(a)Primary only (b)Secondary only (c)Primary and secondary both (d)None of these

(2) Primary data as compared to secondary data are _____.

(a)Less reliable (b)More reliable (c)Equally reliable (d)None

(3) Which of the following facts is not quantitative?

(a)Unmarried (b)Years (c)Height (d)Production

(4) The word 'mean' or 'average' only refer to _____.

(a)Arithmetic mean (b)Median (c)Mode (d)Quartiles

(5) The value which occurs with the maximum frequency is called _____.

(a)Median (b)Mode (c)Mean (d)Standard deviation

(6) Which measure of dispersion is quickest to calculate?

(a)Range (b)Mean deviation (c)Quartile deviation (d)Standard deviation

(7) Inter-Quartile range includes _____

(a)First 50% of the series (b)Last 50% of the series

(c)Middle 50% of the series (d)Any 50% of the series

(8) If variable Y tends to increase as variable X increases, there is _____.

(a)Positive correlation (b)Negative correlation

(c)No correlation (d)Inverse correlation

(9) If $b_{YX} > 1$, then b_{XY} is _____.

(a)Less than 1 (b)Greater than 1 (c)Equal to 1 (d)Equal to 0

(10) The slopes of the regression lines of y on x is _____.

(a)b_{yx} (b)b_{xy} (c)b_{xx} (d)b_{yy}

(B) State whether following statements are True or False:(Any Seven) (7)

(1) Questionnaires are form of primary data.

(2) Diagrams are useful in drawing attention of the public.

(3) Median can be located by histogram.

(4) Decile means we divide the distribution into 4 equal parts.

(5) Mode is the most frequently occurring value in a data set.

(6) Standard deviation is equal to the square root of the variance.

(7) Range is difficult to calculate.

(8) Coefficient of correlation lies between 0 and 2.

(9) If r =1, then there is a perfect relationship between the two given variables.

(10) The slopes of the regression lines of y on x is b_{yx}.

Q.2 (A) Draw a multiple bar diagram and sub-divided diagram. **(8)**

Year	Percentage employed		
	Men	Women	Children
1990	55	30	15
1995	50	25	20
2000	60	20	25

(B) Find median production from the distribution given below. **(7)**

Production	100-110	110-120	120-130	130-140	140-150
No. of workers	10	52	100	68	10

OR

(C) Draw a Histogram and find the mode graphically. **(8)**

Class Interval	60-70	70-80	80-90	90-100	100-110	110-120	120-130
Frequency	2	5	12	7	5	3	2

(D) Prepare a frequency distribution for the following data taking class intervals 11-15, 16-20, 21-25 and so on. **(7)**

12,14,18,22,38,48,39,37,24,23,19,17,27,48,28,30,29,22,25,46,47,48,49,18,24,33,32,31, 44,37,24,28,35,32,33,18,23,24,32,33.

Q.3 (A) Calculate quartile deviation for the following data giving fees of 52 play groups. **(8)**

Fees in Rs.	2000-2500	2500-3000	3000-3500	3500-4000	4000-4500	4500-5000
No. of groups	4	6	12	15	8	7

(B) Find fifth decile (D_5) and 45th percentile (P_{45}) for the following data. **(7)**

Age	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60
Frequency	10	40	50	18	21	29	5	9

OR

(C) The following data is given for weights of boys and girls in the class. Find combined mean and combined standard deviation. **(8)**

Average weight of boys = 60 kg. , Average weight of girls = 45 kg.

Variance of weight of boys = 9 kg^2 , Variance of weights of girls = 4 kg^2

No. of boys = 100, No. of girls = 50

(D) Calculate arithmetic mean and mode of the following data. **(7)**

Amount in Rs.	0-10	10-20	20-30	30-40	40-50
No. of families	14	23	27	21	15

Q.4 (A) Find coefficient of correlation from the following data. **(8)**

X	3	5	4	6	3	2
Y	12	4	6	3	14	18

(B) Find both regression equations from the following data. **(7)**

$\sum x = 60$, $\sum y = 40$, $\sum xy = 1150$, $\sum x^2 = 4160$, $\sum y^2 = 1720$, $N = 10$

OR

(C) Find the regression equations from the following data. **(8)**

Age in years	10	10	11	11	12	13
Marks	5	6	6	7	8	7

(D) Calculate standard deviation and coefficient of variation for the following data. **(7)**

Defects	5	6	7	8	9	10
No. of units	8	10	15	10	5	2

Q.5 (A) Write merits and demerits of median. **(8)**

(B) What are the requisites of a good questionnaire? **(7)**

OR

(C) Answer any three of the following. **(15)**

(i) Write merits and demerits of standard deviation.

(ii) Short note on advantages of sampling.

(iii) What is secondary data? What are the sources of it?

(iv) What are limitations of statistics?

(v) Explain any three functions of statistics.