

MBA (Integrated)
(SEM II) THEORY EXAMINATION 2017-18
BUSINESS STATISTICS

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 7 = 14**

- a. What is Quartile Deviation?
- b. What is Dispersion?
- c. What is Variance?
- d. What is Moments?
- e. What is Correlation?
- f. What is Regression?
- g. What is Probability?

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

- a. In the frequency distribution of 100 families given below, the number of families corresponding to expenditure groups 20-40 and 60-80 are missing from the table.
 However, the median is known to be 50. Find the missing frequencies.
 Expenditure (Rs.): 0-20 20-40 40-60 60-80 80-100
 No. of Families : 14 ? 27 ? 15
- b. What is meant by skewness in a frequency distribution ? Explain the different measures of skewness.
- c. From the following table, calculate the Karl Pearson's coefficient of correlation between age of husbands and wives :

Age of Wives (Years)	Age of Husbands (Years)					Total
	20-30	30-40	40-50	50-60	60-70	
55-65	—	—	—	4	2	6
45-55	—	—	4	16	5	25
35-45	—	1	12	2	—	15
25-35	—	10	25	2	—	37
15-25	5	9	3	—	—	17
Total	5	20	44	24	7	100

- d. Distinguish between correlation and regression analysis. Discuss the utility and applications of regression analysis.
- e. In a bolt factory machines A, B and C manufacture respectively 25%, 35% and 40% of the total. Of their output 5, 4 and 2 percents are defective bolts. A bolt is drawn at random from the product and is found to be defective. What is the probability that it was manufactured by machine A ?

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7
- (a) What is meant by measures of Central Tendency ? What are the characteristics of a good measure of central tendency?
- (b) From the following series calculate Mode and Median :
- | | | | | | | | | | |
|-------------------|---|---|----|----|----|----|----|----|----|
| Marks (below) : | 3 | 5 | 7 | 10 | 13 | 15 | 20 | 25 | 30 |
| No. of Students : | 2 | 5 | 10 | 15 | 30 | 35 | 42 | 47 | 50 |
4. Attempt any *one* part of the following: 7 x 1 = 7
- (a) What are the measures of dispersion ? Why is standard deviation considered to be the most reliable measure of dispersion ?
- (b) Find out Mean Deviation from Median and its coefficient :-
- | | | | | | | | | | |
|----------------|-----|-----|------|------|------|------|------|------|------|
| Central Size : | 2.5 | 7.5 | 12.5 | 17.5 | 22.5 | 27.5 | 32.5 | 37.5 | 42.5 |
| Frequency : | 6 | 13 | 19 | 20 | 15 | 12 | 8 | 4 | 3 |
5. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Discuss about the applications of Correlation analysis in business.
- (b) From the following data relating to sales and net profits of a firm. Find the rank Correlation Coefficient :-
- | | | | | | | | | |
|-----------------|----|----|----|----|-----|-----|-----|-----|
| Sales in Rs : | 60 | 80 | 90 | 60 | 100 | 130 | 120 | 110 |
| Profit in Rs. : | 30 | 40 | 50 | 40 | 60 | 70 | 40 | 75 |
6. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Find the two regression lines from the following data :-
- | | | | | | | | |
|-----|---|---|----|----|----|----|----|
| X : | 1 | 2 | 3 | 4 | 5 | 8 | 10 |
| Y : | 9 | 8 | 10 | 12 | 14 | 16 | 15 |
- (b) What are the types of regression ? Define the utilities and applications of regression analysis.
7. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Discuss about the Addition and Multiplication theorem of probability.
- (b) X can hit a target 3 times in 5 shots. Y 2 times in 5 shots and Z 3 times in 4 shots. They fire a volley. What is the probability of hitting 2 shots ?