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Question Paper Code: CMB005

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

MBA I Semester End Examinations (Supplementary) - May, 2019

Regulation: IARE–R16

STATISTICS FOR MANAGEMENT

Time: 3 Hours **(MBA)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Define statistics. Discuss its use in business decision making. **[7M]**

   (b) How statistical methods are likely to be of any use to marketing firm? Give some suitable examples. **[7M]**

2. (a) Describe origin and scope of statistics. Also write limitations of statistics. **[7M]**

   (b) What role does business statistics play in the management of business enterprise? Illustrate your answer with some business problems. **[7M]**

UNIT – II

3. (a) What are the various factors influencing the selection of averages? State the applications and limitations of averages? **[7M]**

   (b) Calculate standard deviation and mean deviation for average life of particular brand of T.V. sets for data given in Table 1. **[7M]**

Table 1

Life in years	0-2	2-4	4-6	6-8	8-10	10-12
Number of sets	5	16	13	7	5	4

4. (a) What is standard deviation? Explain its merits and demerits? What are the methods available for computing standard deviation for individual observations? **[7M]**

   (b) Calculate mean, median and mode from the following data in Table 2. **[7M]**

Table 2

Heights in inches	62-63	63-64	64-65	65-66	66-67	67-68	68-69
Number of persons	2	6	14	16	8	3	1

UNIT – III

5. (a) What do you understand by tabulation? What considerations should be kept in mind while tabulating data? **[7M]**

   (b) The data given below in Table 3 relate to firms A and B for a particular month. Draw subdivided bar diagram and multiple bar diagram. **[7M]**

Table 3

Items	Firm A	Firm B
Raw material cost	10000	7000
Labour cost	7000	3000
Other over head expenses	4000	1500
Miscellaneous expenses	3000	500
Total cost	24000	12000
Total Revenue	30000	18300
Profit	6000	6300
Number of units produced and sold	1200	900

6. (a) State the advantages and limitations of graphical representation of data. **[7M]**

   (b) Draw a Ogive curve for the following distribution in Table 4 and find out graphically median. **[7M]**

Table 4

weekly wages in (Rs)	Number of workers
900-950	6
950-1000	10
1000-1050	22
1050-1100	30
1100-1150	16
1150-1200	12
1200-1250	15

UNIT – IV

7. (a) Define ANOVA. Explain the step wise procedure for one way ANOVA. **[7M]**

   (b) Are good grades in college important for earning a good salary? A business statistics student has taken a random sample of starting salaries and college grade point averages (GPA) for some recently graduated friends of his. The data follows in Table 5: **[7M]**

Table 5

Starting Salary('000)	36	30	30	24	27	33	21	27
GPA	4.0	3.0	3.5	2.0	3.0	3.5	2.5	2.5

8. (a) What is chi-square? Explain its application. What is chi-square statistics and state its assumptions? **[7M]**

   (b) The following Table 6 gives scores obtained by 11 students. Find the spearman correlation between them. **[7M]**

Table 6

Scores in English	40	46	54	60	70	80	82	85	85	90	95
Scores in Hindi	45	45	50	43	40	75	55	72	65	42	70

UNIT – V

9. (a) Define regression analysis. Illustrate equations X on Y, Y on X to predict future over head cost. **[7M]**

   (b) Cost accountant often estimate overhead based on the level of production. At the standard knitting Co., they have collected information on overhead expenses and units produced at different plants, and want to estimate a regression equation to predict future overhead for Table 7. **[7M]**

Table 7

Overhead(y)	191	170	272	155	280	173	234	116	153	178
Units(x)	40	42	53	35	56	39	48	30	37	40

i) Develop a regression equation for the cost accountants

ii) Predict overhead cost when 50 units are produced.

10. (a) Define Index and Explain different type of indices with limitations. **[7M]**

(b) The following data in Table 8 describe the marketing performance of a regional beer producer: **[7M]**

Table 8

				Sales by Quarter(Rs. 100000)
Year	I	II	III	IV
1991	65	58	56	61
1992	68	63	63	67
1993	70	59	56	62
1994	60	55	51	58

Calculate the seasonal indices for the data by the method of link relatives.