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Question Paper Code: CMBB05



# INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)

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

**Regulation: IARE-R18**

## STATISTICS FOR MANAGEMENT (MBA)

**Time: 3 Hours**

**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  
 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:

**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:

**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



**INSTITUTE OF AERONAUTICAL ENGINEERING**  
**(Autonomous)**  
**Dundigal, Hyderabad - 500 043**

**COURSE OBJECTIVES (COs):**

**The course should enable the students to:**

I	Addresses the management challenge of designing and implementing the best combination of marketing actions to carry out a firm's strategy in its target markets.
II	Applying the analytic perspectives, decision tools, and concepts of marketing to decisions involving segmentation, targeting and positioning, product offering.
III	Identify and demonstrate the dynamic nature of the environment in which marketing decisions are taken and appreciate the implications for marketing strategy determination and implementation.
IV	Analyze the relevance of marketing concepts and theories in evaluating the impacts of environmental changes on marketing planning, strategies and practices.

**COURSE OUTCOMES (COs):**

**Students who complete the course will have demonstrated the ability to do the following.**

CMBB05.01	Recognize the significance, limitations, origin and development of statistics.
CMBB05.02	Acquire the knowledge about different managerial applications of statistics in various fields in modern times and analyze the use of computers in statistics.
CMBB05.03	Discuss various types of measures of central tendency and measures of dispersion..
CMBB05.04	Analyze the different types of coefficient of skewness and the coefficient of variation.
CMBB05.05	Understand the tabulation and classification of data to draw effective solutions for solving problems.
CMBB05.06	Demonstrate the diagrammatical and graphical representation of data by using different dimensional diagrams.
CMBB05.07	Examine the differences between uni-variate , bi variate and multi variate data.
CMBB05.08	Apply different types of small sample tests and techniques of ANOVA..
CMBB05.09	Analyze correlation analysis and different types of coefficient of correlation.
CMBB05.10	Describe the regression analysis, time series analysis and trend analysis of data..

**MAPPING OF SEMESTER END EXAMINATION TO COURSE LEARNING OUTCOMES:**

SEE Question No.		Course Outcomes (COs)		Course Outcomes (COs)	Blooms Taxonomy Level
1	a	CMBB05.01	Recognize the significance, limitations, origin and development of statistics.	CO1	Understand
	b	CMBB05.02	Acquire the knowledge about different managerial applications of statistics in various fields in modern times and analyze the use of computers in statistics.	CO2	Understand
2	a	CMBB05.01	Recognize the significance, limitations, origin and development of statistics.	CO1	Remember
	b	CMBB05.02	Acquire the knowledge about different managerial applications of statistics in various fields in modern times and analyze the use of computers in statistics.	CO2	Remember
3	a	CMBB05.03	Discuss various types of measures of central tendency and measures of dispersion..	CO3	Remember
	b	CMBB05.04	Analyze the different types of coefficient of skewness and the coefficient of variation.	CO4	Remember
4	a	CMBB05.03	Discuss various types of measures of central tendency and measures of dispersion..	CO3	Remember
	b	CMBB05.04	Analyze the different types of coefficient of skewness and the coefficient of variation.	CO4	Remember
5	a	CMBB05.05	Understand the tabulation and classification of data to draw effective solutions for solving problems.	CO5	Understand
	b	CMBB05.06	Demonstrate the diagrammatical and graphical representation of data by using different dimensional diagrams.	CO6	Understand
6	a	CMBB05.05	Understand the tabulation and classification of data to draw effective solutions for solving problems.	CO5	Understand
	b	CMBB05.06	Demonstrate the diagrammatical and graphical representation of data by using different dimensional diagrams.	CO6	Understand
7	a	CMBB05.07	Examine the differences between uni-variate, bi variate and multi variate data.	CO7	Understand
	b	CMBB05.08	Apply different types of small sample tests and techniques of ANOVA..	CO8	Remember
8	a	CMBB05.07	Examine the differences between uni-variate, bi variate and multi variate data.	CO7	Remember
	b	CMBB05.08	Apply different types of small sample tests and techniques of ANOVA..	CO8	Understand
9	a	CMBB05.09	Analyze correlation analysis and different types of coefficient of correlation.	CO9	Remember
	b	CMBB05.10	Describe the regression analysis, time series analysis and trend analysis of data..	CO10	Understand
10	a	CMBB05.09	Analyze correlation analysis and different types of coefficient of correlation.	CO9	Understand
	b	CMBB05.10	Describe the regression analysis, time series analysis and trend analysis of data..	CO10	Analyze

**SIGNATURE OF THE FACULTY**

**HOD, MBA**