SREENIVASA INSTITUTE *of* TECHNOLOGY *and* MANAGEMENT STUDIES
(AUTONOMOUS)

(STATISTICAL METHODS FOR MANAGERS)

QUESTION BANK

I MBA / I - SEMESTER REGULATION: R_{22}

By

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Department : **Master of Business Administration**

I MBA – Semester - I					
Course Code	**STATISTICAL METHODS FOR MANAGERS**	**L**	**T**	**P**	**C**
22MBA115		**3**	**1**	**0**	**4**

Course Educational Objectives (CEO):

CEO1: To provide knowledge on basics of Statistics and data presentation
CEO2: To develop skills for the measurement of right average for the given data
CEO3: To provide knowledge for the measurement of right deviation and coefficient of variation for the given data to take right managerial decision
CEO4: To provide knowledge to find out the relationship between variables and Coefficient of Correlation for the given data to take right managerial decision
CEO5: To develop skills for the application of a right test for the testing Hypothesis

UNIT - I	**Introduction**	Lecture Hrs: 12

Meaning and definition of Statistics, - Nature, Scope, Significance of Statistics, Sources of data – Types of Data – Methods of Data Collection. Classification and Tabulation of data –Types of classification and tables –Rules of Classification and tabulation.

Graphs & Diagrams: Graphs and Diagrams Presentation – Importance and different types of graphs and diagrams.

UNIT - II	**Measures of Central Tendency**	Lecture Hrs: 8

Arithmetic–Weighted Mean. Median, Mode

UNIT - III	**Measures of Dispersion**	Lecture Hrs:8

Range, Quartile Deviation, Mean Deviation. Standard Deviation, Coefficient of Variation

UNIT - IV	**Correlation and Regression**	Lecture Hrs:12

Introduction, Significance and Types of Correlation, Methods of Correlation- Coefficient of Correlation, and Multiple Correlation Analysis.

Regression: Meaning and Purpose of Regression Analysis – Regression Lines and Regression Equations, Multiple Regression Analysis.

UNIT - V	**Testing of Hypothesis**	Lecture Hrs:12

One Sample and Two sample tests for means of small samples (t-Test), F test for two samples.

ANOVA (One- way classification and Two- way Classification), Chi-square test (Goodness of Fit, Independence of attributes).

Course Outcomes :		
On successful completion of the course the students will be able to		**Pos related to COs**
CO1	**Demonstrate** knowledge on Sources of data, Types of Data, Methods of Data Collection preparation of Classification and Tabulation of data.	PO1, PO2, PO5
CO2	Apply measurement of right average for the given data	PO1,PO2,
CO3	**Measure** a right deviation and coefficient of variation for the	PO1, PO2, PO6,PO7

	given data to take right managerial decision	
CO4	**Apply** correlation and regression techniques for forecasting and decision making	PO1, PO2, PO6, PO7
CO5	**Apply** a right Hypothesis test for the given data to take right decision	PO1, PO2, PO6, PO7

Textbooks:

1. Statistical Method, S.P Gupta, Sulthan Chand & Sons, 2017.
2. Statistics for Management, Richard I Levin, David S.Rubin, Pearson, 2008.

References:

1. Business Statistics, Gupta S.C & Ira Gupta, Himalaya Publishing House, Mumbai, 2012.
2. Statistics for Management, P.N.Arora, S.Arora, S.Chand, 2009.
3. Statistics for Management, Levin, Pearson Company, New Delhi, 2013.

Online Learning Resources:

https://archive.nptel.ac.in/courses/110/107/110107114/
https://archive.nptel.ac.in/courses/121/106/121106007/

QUESTION BANK

Question No.	Questions	PO Attainment
	UNIT – 1: Introduction	
	PART-A (Two Marks Questions)	
1	Write the meaning and definition of statistics	PO1, PO2, PO5
2	Nature of statistics.	PO1, PO2, PO5
3	List the scope of statistics in Business.	PO1, PO2, PO5
4	What is primary data?	PO1, PO2, PO5
5	Define secondary data.	PO1, PO2, PO5
6	Statistics is an art or science. Comment	PO1, PO2, PO5
7	What are the functions of statistics?	PO1, PO2, PO5
8	List out application of statistics in functional area of business.	PO1, PO2, PO5
9	Explain role of statistics in general applications.	PO1, PO2, PO5
10	What are the external sources of data?	PO1, PO2, PO5
11	Define Questionnaire method.	PO1, PO2, PO5
12	Examples of unpublished data.	PO1, PO2, PO5
13	Differentiate published and unpublished data.	PO1, PO2, PO5
14	What are the characteristics of data?	PO1, PO2, PO5
15	List out types of classification of data.	PO1, PO2, PO5
16	What are the objectives of tabulation?	PO1, PO2, PO5
17	What are the parts of a table?	PO1, PO2, PO5
18	List out use of Stubs in a table.	PO1, PO2, PO5
19	What is frequency polygon?	PO1, PO2, PO5
20	List out the rules of drawing diagrams.	PO1, PO2, PO5
	PART-B (Ten Marks Questions)	
1	What is statistics? Explain nature and significance of statistics.	PO1, PO2, PO5
2	Explain scope and functions of statistics in business.	PO1, PO2, PO5
3	Describe sources of statistics with examples.	PO1, PO2, PO5
4	Define classification. Explain types and importance of classification.	PO1, PO2, PO5
5	List out types of tabulation. Discuss with examples.	PO1, PO2, PO5
6	What is tabulation? Explain objectives and rules of tabulation.	PO1, PO2, PO5
7	Discuss parts of table with examples.	PO1, PO2, PO5
8	Explain importance and use of diagrams.	PO1, PO2, PO5
9	Types of diagrams. Explain in detail.	PO1, PO2, PO5
10	Draw a suitable diagram for the following data. Year: 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 No of accidents: 100 | 80 | 60 | 50 | 125 | 175 | 200	PO1, PO2, PO5
Question No.	**Questions**	PO1, PO2
	UNIT – 2: Measures of Central Tendency	
	PART-A (Two Marks Questions)	
1	What is frequency distribution?	PO1, PO2
2	Define class Interval.	PO1, PO2

3	Give examples of class limits.	PO1, PO2
4	List out types of continuous frequencies series.	PO1, PO2
5	What is central tendency?	PO1, PO2
6	Write objectives of averages.	PO1, PO2
7	Write formula of Arithmetic mean?	PO1, PO2
8	List out merits of arithmetic mean.	PO1, PO2
9	Calculate the median for the following data: 25,20,18,20,12,11,9	PO1, PO2
10	Differentiate grouped and ungrouped data.	PO1, PO2
11	Calculate median for the following data: 12,14,10,8,6,20	PO1, PO2
12	Write formula for the median?	PO1, PO2
13	Write formula for the mode?	PO1, PO2
14	Calculate mode for the following data: 8,9,3,8,4,6,8,5,1,8	PO1, PO2
15	Write advantages of mode.	PO1, PO2
PART-B (Ten Marks Questions)		
1	From the following information determine mean and median. Marks: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 No. of students: 5 | 8 | 12 | 20 | 22 | 20 | 24	PO1, PO2
2	Calculate mode for the following data. Classes: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 No. of students: 15 | 20 | 18 | 20 | 22 | 22 | 24 | 12	PO1, PO2
3	Write a short note on the following: • Arithmetic mean • Median • Mode • Geometric mean • Harmonic mean	PO1, PO2
4	Calculate median ages of 1500 workers working in a industrial establishment their ages is as follows. Age in years: 18-22 | 22-26 | 26-30 | 30-34 | 34-38 | 38-42 | 42-46 | 46-50 | 50-54 No .of workers: 120 | 125 | 280 | 260 | 155 | 184 | 162 | 86 | 75	PO1, PO2
5	Calculate median of percentage marks obtained by the students from the following data given below. Marks: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 No .of students: 7 | 32 | 56 | 106 | 180 | 164 | 86	PO1, PO2
6	Calculate Geometric mean for the following data. Marks: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 No .of students: 5 | 7 | 15 | 25 | 8	PO1, PO2
7	Calculate Harmonic mean for the following frequency distribution. Marks: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 No .of students: 8 | 15 | 20 | 4 | 3	PO1, PO2
Question	**Questions**	PO1, PO2, PO6, PO7

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Department of Management Studies

QUESTION BANK — Statistical Methods For Managers (22MBA115)

No.		
	UNIT – 3: Measures of Dispersion	
	PART-A (Two Marks Questions)	
1	What is dispersion?	PO1, PO2, PO6, PO7
2	Write objectives of dispersion?	PO1, PO2, PO6, PO7
3	If a dataset has values ranging from 10 to 50, what is its range?	PO1, PO2, PO6, PO7
4	Can quartile deviation be negative? Why or why not?	PO1, PO2, PO6, PO7
5	Calculate the range for the following data: 22,88,165,65,168,136,125	PO1, PO2, PO6, PO7
6	What is inter quartile range?	PO1, PO2, PO6, PO7
7	What is mean deviation?	PO1, PO2, PO6, PO7
8	Define standard deviation.	PO1, PO2, PO6, PO7
9	Differentiate mean and standard deviation.	PO1, PO2, PO6, PO7
10	Write formula for the standard deviation?	PO1, PO2, PO6, PO7
11	What is co-variance?	PO1, PO2, PO6, PO7
12	What is the formula for the covariance?	PO1, PO2, PO6, PO7
13	How does standard deviation relate to variance?	PO1, PO2, PO6, PO7
	PART-B (Ten Marks Questions)	
1	Define dispersion. Explain objectives and significance of dispersion.	PO1, PO2, PO6, PO7
2	Write a short note on the following: a) Range b) Quartile deviation c) Mean deviation d) Standard deviation	PO1, PO2, PO6, PO7
3	How to calculate standard deviation? Explain	PO1, PO2, PO6, PO7
4	What are the advantages of covariance?	PO1, PO2, PO6, PO7
5	A sample of charge accounts at a local drug store revealed the following frequency distribution of unpaid balances. Unpaid balance: 10-29 | 30-49 | 50-69 | 70-89 | 90-109 Frequency: 1 | 6 | 9 | 11 | 13 1. Determine the mean unpaid balance. 2. Determine the variance 3. Determine the Standard deviation. 4. Compute the coefficient of variation.	PO1, PO2, PO6, PO7
6	Compute Mean, variance and standard deviation for the discrete probability distribution X : -5 - 1 0 2 8 10 15 P(x) : 0.2 0.1 0 0.3 0.2 0.1 0.1	PO1, PO2, PO6, PO7
7	Calculate standard deviation for the following data. Value : 90-99 80-89 70-79 60-69 50-59 40-49 30-39 Frequency: 2 12 22 20 14 4 1	PO1, PO2, PO6, PO7

Question No.	Questions	PO Attainment
	UNIT – 4: Correlation and Regression	
	PART-A (Two Marks Questions)	
1	Define correlation.	PO1, PO2, PO6, PO7
2	When is linear regression used?	PO1, PO2, PO6, PO7
3	Distinguish between correlation and regression.	PO1, PO2, PO6, PO7

4	What is regression analysis?	PO1, PO2, PO6, PO7
5	Briefly explain how a scatter diagram benefits the researcher?	PO1, PO2, PO6, PO7
6	Define correlation coefficient between two variables.	PO1, PO2, PO6, PO7
7	What is scatter diagram?	PO1, PO2, PO6, PO7
8	If the equations of the regression lines are x+2y=5 and 2x+3y=8, find the correlation coefficient between x and y.	PO1, PO2, PO6, PO7
9	What is multiple correlations?	PO1, PO2, PO6, PO7
10	What is multiple regressions?	PO1, PO2, PO6, PO7
11	Write a formula to persons correlation coefficients?	PO1, PO2, PO6, PO7
12	What is spearman's rank correlation?	PO1, PO2, PO6, PO7
13	What is the difference between methods of correlations?	PO1, PO2, PO6, PO7
14	Differentiate between correlation and regression analysis.	PO1, PO2, PO6, PO7
15	Role of correlation in business.	PO1, PO2, PO6, PO7
16	Role of regression in business.	PO1, PO2, PO6, PO7
17	Explain regression with examples.	PO1, PO2, PO6, PO7
PART-B (Ten Marks Questions)		
1	What is correlation? Explain correlation methods with examples.	PO1, PO2, PO6, PO7
2	Explain importance of correlation in business.	PO1, PO2, PO6, PO7
3	Discuss significance and types of correlations.	PO1, PO2, PO6, PO7
4	What is Regression? Explain purpose and importance of regression in business.	PO1, PO2, PO6, PO7
5	Calculate the regression equations X on Y & Y on X for the following data. X : 1 2 3 4 5 Y : 2 5 3 8 7	PO1, PO2, PO6, PO7
6	Find the regression equation from the following data: Sales: 91 97 108 121 67 124 51 73 111 57 Purchases: 71 75 69 97 70 91 39 61 80 47	PO1, PO2, PO6, PO7
7	Explain scatter diagram method.	PO1, PO2, PO6, PO7
8	Find the correlation between the variables form the data give below. Income: 10 12 8 5 15 Expenditure: 12 12 6 15 15	PO1, PO2, PO6, PO7
9	Compute the rank correlation coefficient from the following data Series X: 115 109 112 87 98 80 120 100 98 118 Series Y: 75 73 85 70 76 65 82 73 68 60	PO1, PO2, PO6, PO7
10	Discuss method of least square.	PO1, PO2, PO6, PO7

Question No.	Questions	PO Attainment
UNIT – 5: Testing of Hypothesis		
PART-A (Two Marks Questions)		
1	Define Hypothesis.	PO1, PO2, PO6, PO7
2	What are the type I and type II errors?	PO1, PO2, PO6, PO7
3	Define critical region	PO1, PO2, PO6, PO7
4	State the application of t-test.	PO1, PO2, PO6, PO7
5	Distinguish between one tail and two tail tests.	PO1, PO2, PO6, PO7
6	Distinguish between one way and two way ANOVA.	PO1, PO2, PO6, PO7
7	When can you use t-test?	PO1, PO2, PO6, PO7
8	Describe any two applications of t-distribution.	PO1, PO2, PO6, PO7
9	Define level of significance.	PO1, PO2, PO6, PO7

10	What is the difference between small and large sample test?	PO1, PO2, PO6, PO7
11	What is the role of standard error?	PO1, PO2, PO6, PO7
12	Mention any two assumptions made in analysis of variance techniques.	PO1, PO2, PO6, PO7
13	Write a chi-square formula?	PO1, PO2, PO6, PO7
14	What is the difference between F-Test and ANOVA test?	PO1, PO2, PO6, PO7
15	What is the difference between null and alternative hypotheses?	PO1, PO2, PO6, PO7
	PART-B (Ten Marks Questions)	
1	A random sample of 200 defective articles showed the following distribution. Class : 16-20 21-25 26-30 31-35 36-40 No. of items: 32 42 40 50 36 Test at 5% level of significance if the average number of defective articles for all the production could be equal to 35.	PO1, PO2, PO6, PO7
2	Test if the following samples could have come from two populations with the same means, assuming the population variances are equal. Sample I Sample II Sample size 12 10 Sample Mean 40.5 43.8 Sample variance 2.6 3.2	PO1, PO2, PO6, PO7
3	(a) In Town A, there were 850 birds of which 52% was males, while in Town A and Town B combined, the proportion of males in a total of 1200 birds was 0.49. Is there any significance difference in the proportions of male birds in the two Towns? (b) From a sample of 800 graduates in a district 245 found to be employed. Can we conclude that 45% of the graduates in the whole district are employed?	PO1, PO2, PO6, PO7
4	Distinguish between the following: (a) Null hypothesis and alternative hypothesis. (b) Type I error and Type II error. (c) F-test and Chi-square – test.	PO1, PO2, PO6, PO7
5	What is the importance of Chi-Square distribution in decision making? Explain the conceptual frame work of Chi-Square test with respect to expected and observed frequencies.	PO1, PO2, PO6, PO7
6	A company accepted a lot of 70 picture tubes of a color television. Out of the 70 picture tubes, 10 are defective. (i) If two picture tubes are drawn at random, one at a time without replacement, what is the probability that both the picture tubes are defective? (ii) If two picture tubes are drawn at random, one at a time with replacement, what is the probability that both the picture tubes are defective?	PO1, PO2, PO6, PO7
7	What is Chi-square test? Explain the applications of chi-square test.	PO1, PO2, PO6, PO7
8	Explain various tests used for testing hypothesis.	PO1, PO2, PO6, PO7

*****ALL THE BEST*****