

Reg. No. \_\_\_\_\_ Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
FIRST TRIMESTER MBA DEGREE EXAMINATION, OCTOBER- 2017

**MBA 11 QUANTITATIVE TECHNIQUES**

Max. Marks: 60

Duration: 3 Hours

*Any missing data shall be assumed. All assumptions must be clearly stated.  
Use of statistical tables and graph sheets are permitted, if necessary.*

**PART A**

*Answer all questions. Each question carries 2 marks.*

1. Discuss probability through: (a) *Classical Approach* and (b) *Axiomatic Approach*.
2. “*In a perfectly symmetrical distribution, the values of mean, median and mode coincide. However, in asymmetrical distribution, these values are not equal.*” Explain the relationship.
3. List down the properties of a *good estimator*.
4. Discuss about *Testing of Hypotheses*.
5. “*When more than two experimental or field samples are to be compared, the statistical technique used for the purpose is Analysis of Variance.*” Explain.

(5x2 marks = 10 marks)

**PART B**

*Answer any 3 questions. Each question carries 10 marks.*

6. a) “*This theorem describes the probability of an event, based on prior knowledge of conditions that might be related to the event.*” Describe the theorem, in detail, with an example. (3)
- b) A new artillery developed by DRDO consists of two special parts A and B. During the process of making of part A, 9 out of 100 are likely to be defective. Also, it is found that 5 out of 100 of part B are defective. Calculate the probability that the randomly selected one artillery will not be defective. (7)
7. a) Write short note on *Measures of Dispersion*. (2)
- b) Calculate the Karl Pearson’s Coefficient of Skewness.

No. of seeds/fruit	0-2	2-4	4-6	6-8	8-10	10-12	12-14
No. of plants	1	2	4	9	4	3	2

(8)

8. Fit a Poisson distribution to the following data.

No. of deaths	0	1	2	3	4
frequency	122	60	15	2	1

9. A drug is given to 10 patients and the increments in their blood pressure were recorded to be 3, 6, -2, 4, -3, 4, 6, 3, 2, 2. Test whether the drug has any effect on the change of blood pressure. (*Take confidence level as 0.95*)
10. The following table gives the retail prices (Rs. per Kg.) of special rice in some shops selected at random from 4 metro cities.

	City 1	City 2	City 3	City 4
Shops	50	50	55	50
	56	53	52	45
	55	45	49	50
	57	50	52	41
	52	50	50	45

Carry out the ANOVA to test the significance of the difference between prices of this rice in 4 cities. ( $\alpha = 1\%$ )

(3x10 marks = 30 marks)

### PART C

***Compulsory question, the question carries 20 marks***

11. a) Describe about the following:

- i. Spearman's Rank Correlation
- ii. Concurrent Deviation Method, and
- iii. Regression Lines
- iv. Business applications of Correlation and Regression (9)

b) A researcher recorded the data on the body length and bodyweight of a fresh water fish for a random sample of 10 fish from a pond. Calculate the correlation Coefficient and interpret it.

Fish No.	I	II	III	IV	V	VI	VII	VIII	IX	X
Body Length(cm)	5.5	6	6.5	5.2	8	7.5	6.2	9	10	7
Body Weight (gm)	35	39	42	42	55	50	40	65	66	45

(11)

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