



**Institute of Management
JK LakshmiPat University
Jaipur**

END TERM EXAMINATION (NOV. - DEC. 2017)

BBA II Sem-III/ Odd
MM: 50 Marks

Course: Business Statistics
Time: 3 Hours
Subject code: QT 06

Instructions: Attempt any three questions from Section A. Section B is compulsory.

Section A

- Q1. Define probability. Discuss the various theories/ approaches of probability.
(10 marks).
- Q2. Elaborate on various non- probabilistic sampling designs. Discuss the relative merits and demerits.
(10 marks).
- Q3. The following are the marks obtained by the students studying in three different schools. Can you say the students have identical distribution of marks?

School 1	32	15	87	32	22	63	56	57	44	
School 2	33	38	39	48	58	70	61	41	45	49
School 3	55	68	27	88	46	52	76			

(Chi-square $\chi^2 = 5.99$) (10 marks)

- Q4. Two weight loss plans (in kilos) are given below:

Diet A	5	0	1	3	4	2	8	10	7	5
Diet B	8	2	6	6	1	1	4	9	8	9

Find out whether there is a difference between these two plans. Consider it as a large sample.

$Z_t = 1.96$ (10 marks).

- Q5. . a) Briefly explain the various terminologies used in decision theory. (2 marks).
b) From the following data, decide the optimal decision by using:
i) maximin, ii) maximax , iii) Laplace criterion iv) EMV (8 marks)

Decision

Act/Events	High demand	Medium demand	Low demand
Do not expand	3500	3500	3500
Expand 200 units	4500	4500	3500
Expand 400 units	6000	3500	2000
Probability	0.2	0.3	0.5

Section B

Q6. Find seasonal variations by the ratio-to-trend method from the data given below:

Year	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
2000	60	80	72	68
2001	68	104	100	88
2002	80	116	108	96
2003	108	152	136	124
2004	160	184	172	164

Also interpret the result with a focus on providing solution.

(20 marks)