Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80201

M.B.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

First Semester

BA 9201/BA 911/UBA 9101/10488 MB 102 — STATISTICS FOR MANAGEMENT

(Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

(Please Provide Statistical Table)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State Baye's theorem.
2. Explain discrete and continuous variable with examples.
3. Explain snowball technique.
4. Give the meaning of stratified random sampling.
5. What is the use of t-test?
6. Where do you apply z-test?
7. State the limitations of non-parametric test.
8. Briefly about run test.
9. Mention the factors contributing to seasonal variation.
10. Write the applications of index numbers.

PART B — (5 × 16 = 80 marks)

11. (a) A factory produces a certain type of output by three types of machines. The respective daily production figures are machine I ; 3000 units, machine II ; 2500 units and machine III ; 4500 units. Past experience shows that 1% of the output produced by machine I is defective. The corresponding fraction of defectives for the other two machines are 1.2% and 2% respectively. An item is drain at random from the day's production run and is found to be defective. What is the probability that it comes from the output of

(i) Machine I

(ii) Machine II and

(iii) Machine III?

Or

(b) If the probability that a man aged 60 will live to be 70 is 0.65, what is the probability that out of 10 men now 60, at least 7 will up to 70?

12. (a) (i) Distinguish between standard error and sampling error. (8)

(ii) Explain the types of estimation. (8)

Or

(b) (i) Specify and explain the qualities of a good estimator. (6)

(ii) A random sample of size 100 has mean 15, the population variance being 25. Find the interval estimate of the population mean with a confidence level of

(1) 99% and

(2) 95%. (10)

13. (a) (i) In a random sample of 400 persons from a large population, 120 are females. Can it be said that males and females are in the ratio 5 : 3 in the population? Use 10% level of significance. (6)

(ii) Two types of batteries are tested for their length of life and the following data are obtained.

	No. of samples	Mean Life	Variance
Type A	9	600 hrs	121
Type B	8	640 hrs	144

Is there significance difference in the two means at 5% level of significance.

Or

(b) The three samples below have been obtained from the normal population variances. Test the hypothesis at 5% level that the population means are equal.

I	8	10	7	14	11
II	7	5	10	9	9
III	12	9	13	12	14

14. (a) Calculate the expected frequencies for the following data presuming the two attributes viz., conditions of home and condition of child as independent.

		Condition of home	
		Clean	Dirty
Condition of Child	Clean	70	50
	Fair	80	20
	Dirty	35	45

Use Chi-Square test at 5% level of significance to state whether the two attributes are independent.

Or

(b) (i) Explain rank test with an example. (6)

(ii) Calculate the rank correlation coefficient from the data. (10)

X :	75	88	95	70	60	80	81	50
Y :	120	134	150	115	110	140	142	100

15. (a) Find the two regression lines using the data below :

X :	7	4	8	6	5
Y :	6	5	9	8	2

Or

(b) The following data on production (in '000 units) of a commodity from the year 2006-2012. Fit a straight line trend and forecast for the year 2020.

Year	2006	2007	2008	2009	2010	2011	2012
Production	6	7	5	4	6	7	5