Reg. No. : ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

Question Paper Code : 40328

M.B.A. DEGREE EXAMINATION, APRIL/MAY 2015.

First Semester

BA 7102 — STATISTICS FOR MANAGEMENT

(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Statistical table may be provided.

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain how to organize data in a retrievable format.

2. If $P(A|B) = 0.2$ and $P(B) = 0.4$ then find $P(A \cap B)$.

3. What is meant by sampling distribution?

4. State the central limit theorem.

5. What do you mean by Level of significance?

6. Draw a two way ANOVA table.

7. What are the uses of Run test?

8. What is the use of KW test?

9. Differentiate correlation and regression.

10. What is meant by forecasting errors?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Find mean, median and mode for 20,20,20,40,40,40,40,40,40, 60,60,70. (6)

(ii) A purchase committee is formed from the staff of a company which has two departments Finance and Production of size 5 and 10 respectively. Both Finance and production department has two female staff each. A department is randomly selected and from which two members are selected. If the committee formed with female only, then find the Bayesian probability that the committee has come from finance department. (10)

Or

(b) Global green company has the average yearly sales in an outlet is Rs 25 lakh and standard deviation is Rs. 5 lakh. From a random outlet selected, company wants to find the following results (if sales follow normal distribution).

    (i) Probability of the sales less than Rs. 20 lakhs

    (ii) Probability of the sales greater than Rs. 30 lakhs

    (iii) Probability of the sales in between Rs 20 lakhs and Rs. 30 lakhs

    (iv) Since 1000 outlets the company owns, find the number of outlets have sales less than 15 lakh rupees.　　　　(4 × 4 = 16)

12. (a) Explain probability sampling methods in detail.　　　　(16)

Or

(b) Estimate the population mean at 95% confidence interval from the following sample data drawn from normal distribution.　　　　(16)

X	F
10	6
20	10
30	4

13. (a) (i) Discuss the test procedure to test hypothesized population proportion using single sample proportion,　　　　(8)

    (ii) What is a t-test? When should we apply a (t-test)?　　　　(8)

Or

(b) Time of six Machine operator (in min) in making products is given below. Use paired t test for training effectiveness.　　　　(16)

Machine operator :	#1	#2	#3	#4	#5	#6
Before training:	12	23	4	5	16	17
After training:	2	3	10	8	12	6

14. (a) Test the association of Age and preference of colour of Toy from the following data.　　　　(16)

Age/Color	Below 5	6-10	Above 10 years
Pink	60	40	5
Purple	30	30	30
Red	80	10	10

Or

(b) (i) What are the differences of Nonparametric methods and parametric methods? (8)

(ii) Explain the Mann-Whitney U test for comparing samples with appropriate examples. (8)

15. (a)

X independent variable : 80 120 90 240 130 370 100 160

Y independent variable: 36 25 33 15 28 19 20 22

(i) Develop a regression equation that best describes this data. (10)

(ii) Calculate Karlpearson correlation coefficient. (6)

Or

(b) Estimate the trend from the following series (by 4 quarter moving average method) and find seasonal indices. (16)

Year	Quarter I	Quarter II	Quarter III	Quarter IV
2012	2	6	7	4
2013	1	8	9	2
2014	3	8	9	1

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