**Code No. 9035**

# FACULTY OF MANAGEMENT

M.B.A. I – Semester Examination, February 2013

Course No. – 1.5

**Subject : Statistics for Management**

Time : 3 Hours Max. Marks: 80

**PART – A** (10x2=20 Marks)

1. Write short notes on the following in about 80 words each and at one place only.

(a) What is statistics and state its features?

(b) Additive and multiplicative theorems.

(c) What are the probability distributions?

(d) What is sampling?

(e) Standard Error

(f) What is ANOVA?

(g) Test for goodness of fit

(h) State types of correlation

(i) State two regression equations

(j) What is Trend analysis?

**PART – B** (5x12=60 Marks)

Answer all the questions using the internal choice .

2.(a) Calculate the Karl Pearson's coefficient of Skewness from the following data:

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|---|---|---|---|---|---|---|---|---|
| No.of Students | 10 | 40 | 20 | 0 | 10 | 40 | 16 | 14 |

**OR**

(b) A and B played 12 games of class of which 6 games are won by A, 4 games are won by B and 2 games end in tie. They all agree to play a tournament consisting of 3 games. Find the probabilities that
(i) A wins all the games
(ii) Two games end in tie
(iii) A and B win alternatively
(iv) B wins at least one game

3.(a) The following mistakes per page were observed in a Book.

| No. of Mistakes | 0 | 12 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| No. of pages | 211 | 90 | 19 | 5 | 0 |

Fit the Poisson Model.

**OR**

(b) The mean of a distribution is 70 with a standard deviation of 8, assuming that the distribution is normal. What percentage of items
(i) lies between 70 and 82
(ii) Beyond 82
(iii) Between 65 and 78
(iv) Between 75 and 80

4.(a) What is Hypothesis and discuss the procedure followed in testing of an hypothesis?

**OR**

(b) I.Q. Test on two groups of boys and girls gave the following results:
Girls $\rightarrow$ Mean = 78 ; SD = 10 and N = 50
Boys $\rightarrow$ Mean = 73 ; SD = 15 and N = 100

Is there a significance difference in the Mean score of Boys and Girls?

5.(a) An intensive coaching was given to 11 students and they were examined twice in a month. The results of these two tests are given below. State whether the coaching is effective or not.

| Serial No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Marks before | 19 | 16 | 23 | 17 | 18 | 20 | 18 | 21 | 20 | 19 | 23 |
| Marks after | 17 | 20 | 23 | 20 | 20 | 22 | 23 | 18 | 19 | 22 | 24 |

**OR**

(b) Four salesmen were posted in different areas by a company. The number of units of commodity X sold by them are as follows. Conduct analysis of variance tests.

| | | | | |
|---|---|---|---|---|
| A | 20 | 23 | 28 | 29 |
| B | 25 | 32 | 30 | 21 |
| C | 23 | 28 | 35 | 18 |
| D | 15 | 21 | 19 | 25 |

6.(a) You are given below the following information about advertising and sales.

| **Particulars** | **Advertising Expenditure (Rs in lakhs)** | **Sales (Rs in laksh)** |
|---|---|---|
| Mean | 10 | 90 |
| SD | 3 | 12 |

Correlation coefficient = 0.8

(i) Find the likely sales where advertisement expenditure is Rs 15 lakhs.

(ii) What should be the advertisement expenditure to attain sales of Rs.120 lakhs?

**OR**

(b) Compute the trend values for the following data using method of Least squares.

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|
| Y | 83 | 60 | 54 | 21 | 22 | 13 | 23 |

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