M.TECH. DEGREE EXAMINATIONS: NOVEMBER 2009

Second Semester

APPAREL TECHNOLOGY AND MANAGEMENT

P07FT204: Research Methods

Time: Three Hours   **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 2 = 20 Marks)

1. What is search engine?

2. Define frequency polygon.

3. Frequency distribution histograms.

   a) Pictorial representation of class frequencies.

   b) Tables containing data.

   c) Data collection.

   d) Cumulative frequency.

4. What is a quartile.

5. What is a normal distribution?

6. What is a binomial negative distribution?

7. What is meant by probability of error?

8. What is type 2 error?

9. What is desirability function?

10. What is a neural network.

PART B (5 x 16 = 80 Marks)

11(a) Discuss database and research objectives used in research

(OR)

(b) The following data show cloth width in cm of a shirting.

   89, 87, 90, 90, 90, 92, 92, 92, 88, 89, 88, 89, 87, 88, 89.

   Prepare a frequency table and calculate the relative frequency.

12 (a) The following are the lengths (cm) of a sample of 6 garments chosen at random from a large batch of similar type. 62, 63, 61, 60, 64, 59.

   Calculate (1) Range. (2) Standard deviation

(OR)

(b) A sample of 12 fabrics has an average strength of 6.17 N. The standard deviation of the population is known to be 0.34 N. It is desired to test the hypothesis that the population mean is 6.9834. Use the confidence limit concept to evaluate the hypothesis.

13 (a) Give an account of 3 parameters Weibull distribution and comment on its application to textiles.

(OR)

(b) Write short notes on the following:
1. Poisson distribution.
2. Pascal distribution.

14 (a) The performance of fabrics was assessed by 2 laboratories A and B separately on different occasions and the data are given below.

Lab A: 80, 60, 75, 25, 240.

Lab B: 85, 25, 50, 20, 180.

Prepare a contingency table.

(OR)

(b) Ten fabrics were tested for their crease recovery at 2 different laboratories at different times using the standard method.

Lab A: 300, 160, 180, 270, 200, 300, 126, 118, 130, 140.

Lab B: 296, 140, 170, 260, 190, 300, 120, 117, 132, 141.

Calculate the correlation coefficient.

15 (a) Discuss the neural network for data analysis and give its application in textile areas.

(OR)

(b) Write short notes on the following.
a) Optimization by steepest ascent.
b) Desirability function.
c) Cyclical variation.

****