PC-2812/ML

X-1/2051

BUSINESS STATISTICS AND RESEARCH
METHODOLOGY–202

(Part-I Semester–II)

Time : Three Hours]　　　　　　　　[Maximum Marks : 50

Note : Attempt *four* questions, selecting not more than *two* questions each from Group I and Group II. Group III is compulsory to attempt.

GROUP–I

I.　Examine the major sources of secondary data from the viewpoints of their relative cost and flexibility. Distinguish between primary source and secondary source of data.

II.　Define Attitude Measurement. Discuss the importance of Attitude Measurement.

III.　Explain the concept of Exploratory Research Design. Discuss its applications.

IV.　Explain in detail the role of research in business and industry.　　　　　　　　　　　(2×7½=15)

GROUP–II

V.   Define Statistics. Discuss its features. Explain role of statistics in management.

VI. (a) Find if there is any significant correlation between the heights and weights given below :

Height in inches	57	59	62	63	64	65	55	58	57
Weight in pound	113	117	126	126	130	129	111	116	112

(b) Goals scored by two teams A and B in a football season were as follows :

Number of goals scored in match	Number of matches	
	A team	B team
0	27	17
1	9	9
2	8	6
3	5	5
4	4	3

By calculating the coefficient of variation in each case, find which term may be considered more consistent.

VII. (a) Define Probability? Explain various theorems of probability.

(b)　The CEO of a company plans to take two of his executives to a conference in Chicago. He plans to select at random one of the eight executives in finance and one of the ten executives in marketing. Of the executives in finance, two have already travelled with the CEO while three of the executives in marketing have travelled with CEO before. What is the probability that :

   (i)　Both the executives have travelled with him before?

   (ii)　At least one of the executives selected has travelled with him before?

   (iii)　None of the executives chosen has travelled with the CEO before?

The finance executive has, and the marketing executives has not, travelled with the CEO before ?

VIII.　A comparison is made between two airlines to determine if the arrival times of their regular flights from New Delhi to Mumbai are off-schedule by the same amount of time. For 100 randomly selected flights, Airline A was observed to be off-schedule by an average time of 24 minutes with standard deviation of 11.4 minutes. For the 160 randomly selected flights of airline B, it was found that the mean off-schedule time was 29 minutes with a standard deviation of 13.6 minutes. Do these data Indicate any real difference in the mean off-schedule times at a significance level of 0.01%?　　　　　　　　　　　　　　　(2×7½=15)

GROUP–III

Note: Attempt all the questions. Each question shall carry 5 marks.

IX. (a) Suppose that a birth defect occurs in 1 out of 10,000 births on an average. Estimate the probability that in 25,000 births (i) none will have the birth defect, (ii) there will be 3 birth defects.

(a) State the empirical relationship between mean, median and mode.

(c) Define Hypothesis. Explain the concept of Type I and Type II errors.

(d) Explain the concept of probability sampling techniques. (5×4=20)

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