BUSINESS RESEARCH DESIGN AND METHODS –1021/1121

SEMESTER- II

(Common with MBA dual degree/ I.B./ H&HCM)

TIME: 3 HOURS M.MARKS: 50

Note: Candidates are required to attempt five questions in all, selecting two questions from each Group I and II, each question in Group I and II carries 7.5 marks. Q.9 of Group III is compulsory and carries 20 marks.

Group I

Q1

a) What is meant by primary and secondary sources of data? State the difference between primary and secondary sources of data. Describe the merits and demerits of secondary sources of data. Explain the term statistical data and its tabulation.

b) What are the main requirements of a sample of a population? Describe the different types of samples for research. Describe the main criterion to decide the size of a sample for a statistical test.

(4, 3.5)

Q2

a) What is descriptive and experimental research? What are the types of descriptive research design? What is the goal of descriptive research?

b) What is meant by Research Methodology? Explain its Objectives, and Scope in Management Research. describe the salient considerations in the Process of Research;

(4, 3.5)

Q3

What are measurement and scaling techniques? What are the types of comparative scaling? Explain the following scaling techniques with their merits and demerits.

a) Likert Scaling

b) Semantic Differential Scaling

(7.5)

Q4

a) Explain Normal distribution. Differentiate it from standard Normal distribution. What is the area under the standard Normal distribution curve between z values $-\infty$ and 0?

b) The average number of trucks arriving on a day at a truck depot is known to be 12. What is the probability that on a given day one truck arrives at this depot?

(Given $e^{-12} = 0.000006$)

c) 3 fair coins are tossed 3 times. Find the theoretical probability of getting exactly zero heads.

(2.5, 2.5, 2.5)

Group II

Q5

Explain chi-square test for testing independence of attributes.

In a family survey about smoking habits of men in four localities A, B, C and D in Delhi, the following results were found.

Habits	Number of men in locality A	Number of men in locality B	Number of men in locality C	Number of men in locality D
Smoking	143	233	135	561
Non smoking	117	137	87	352

Discuss at 1% and 5% level of significance whether there is any significant difference in smoking habits between the different localities. Use the table below for your decision.

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Degrees of freedom ν	Upper-tail critical values of chi-square distribution with ν degrees of freedom				
	Probability less than the critical value				
	0.90	0.95	0.975	0.99	0.999
3	6.251	7.815	9.348	11.345	16.266
4	7.779	9.488	11.143	13.277	18.467

(2.5, 5)

Q6

Explain the features of t Test.

The following data relates to weights of 10 persons before joining a health club and after 9 months from joining it. Test whether there is a significant change in the weights after 6 months from joining the club.

Given that: (At 1% level of significance, $t_9 = 3.25$, $t_{10} = 3.16$)

Participant No.	1	2	3	4	5	6	7	8	9	10
Weight before joining club in Kg.	65	62	65	64	62	60	62	68	60	64
Weight after 6 months in Kg.	59	60	62	55	56	60	60	65	59	60

(2.5, 5)

Q7

a) What is a statistical package? Describe SPSS and its uses. What does SPSS stand for? Illustrate the application of SPSS with the help of an example.

b) Explain ANOVA and its application. Explain the difference of the Two Way ANOVA and One-Way ANOVA? When would you use a One-Way ANOVA?

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(4, 3.5)

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Q8 -4-

What are a Research Report and its format? How do you write a preliminary page for a Research Report? Describe the main elements of report writing. Describe the graphical methods of data presentation in a Research Report.

Describe the mechanics of writing Research Report.

(7.5)

Group III

Q9

a) What are the concepts of hypothesis testing? What is meant by Confidence Interval? Describe the steps involved in testing a given hypothesis with examples stating the Type I and Type II errors.

b) Describe the roll of probability and its various distributions in business and planning. Give the various important steps and stages while selecting a particular probability distribution for a given business system.

c) Explain Coefficient of Variation and standard deviation of a statistic variable in research experiment. Following observations for the age of 8 workers of an organisation were recorded. Find the Coefficient of Variation and standard deviation of the age of the workers.

Worker No.	1	2	3	4	5	6	7	8
Age in Years	35	41	37	46	36	47	50	44

d) Explain mean median and mode as a measure of central tendency. Find the mean median and mode of the following six research data.

12, 15, 12, 13, 14 and 12

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(5X4)