GLOBAL COLLEGE OF MANAGEMENT

Final Term Examination 2071

Subject: Research Methodology and Statistical Methods

Program: M.B.S. First Year F.M.: 100
Time: 4:00 hrs. P.M.: 35

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group A
Research Methodology

Short Answer Questions

Attempt any **THREE** Questions. (3x10=30)

1. Explain the scientific research process. What are the main purposes of undertaking business research?

2. Define hypothesis. What are the characteristics of a good hypothesis?

3. What is causal relationship? Explain the difference between causal-comparative and correlational research.

4. What is questionnaire? What are the most critical problems or concerns in questionnaire design?

5. What is the purpose of a research report? Why is reporting of research study important?

Comprehensive Answer Questions

Attempt any **ONE** Question. (1x20=20)

6, Explain the meaning of parametric test. What is the difference between parametric and non-parametric statistical tests? What are the assumptions on which the uses of non-parametric tests are based?

7 List and lebel the variables in the following situation. Explain the relationship among these variables and diagram them. What might be the problem statement for the situation?

The manager of Kathmandu Bakery observes that the morale of employees in his company is low. He thinks that if working conditions are improved, pay scales raised and the vacation benefits made attractive the morale will be boosted. He doubts however if an increase of pay scales would raise the morale of all the employees. His conjecture is that those that have supplemental incomes would just not be "turned on" by higher pay and only without side income will be happy with increased pay with resultant boost of morale.

Group B

Attempt any Five Questions [5x10=50]

1 (a). An MBA applies for a job in two firms X and Y. The probability of his being selected at firm X is 0.7 and being rejected at Y is 0.5. The probability of at least one of his applications being rejected is 0.6. What is the probability that he will be
(i) selected in one of the firms
(ii) not selected in both the firms?

(b). The independent probability of a passenger arriving for a booked flight on a flight is 0.8. The airline books 225 passengers and there are 195 seats available on flight. Use a normal approximation to binomial distribution to find the probability that for a given flight more booked passengers arrive than there are seats available.

2 (a). Out of 20000 customer ledger accounts, a sample of 1500 accounts was taken to test the accuracy of posting and balancing wherein 90 mistakes were found. Assign limits within which the number of defective cases can be expected at 95% level.

(b). The average outstanding balance of loan issued by a bank varies from month to month. From past experience it is known that the amounts are normally distributed with a standard deviation of Rs. 5000. The bank wishes to estimate the average by drawing a random sample such that the probability is 0.95 that the mean of the sample will not deviate by more than Rs.600 form the universe mean. What should be the sample size?

3 (a). A company produce automobile tyre. the average tread life of these tires is normally distributed with an average of 40000 miles and a standard deviation of 3000 miles. The Plant has been updated with new machinery and the new production process is believed to resolution better tyre. A test sample of 64 new tyres was taken and a test run showed the average tread life of 41000 miles. Can we conclude at 95% confidence level, that new product is significantly better than the previous are?

(b). On one of island the hotel chain had facilities at two different locations. In tabulation the response to the single question "Are you likely to choose this hotel again? 163 of 227 at A responded yes, and 154 of 262 guest at b responded yes At 0.05 level of significance, is there evidence of significant difference in guest satisfaction (as measured by likelihood to return to the hotel) between two hotels?

4. The average rate of return recorded by an investor is as follows:

Finacial sector	6	5	7	10	12
Manufacturing sector	2	3	1	5	4
Hotels	1	2	3	1	3

Is there any significant difference in the average return due to the sectors? Test the hypothesis at 1% level of significance?

5. The sales pattern due to trained and fresh salesmen was recorded as follows:

	Sales Rs			Total
	0-500	500-1000	Above 1000	
Trained Salesmen	15	25	30	70
Fresh salesmen	15	10	5	30
Total	30	35	35	100

Is there any evidence to conclude the training of statement and the sales revenue are associated?

6. The promotion rate of 5MBS in a company as against their job performance and training recived were as follows:

Promotion rate of year	6	7	8	9	10
Job performance in 000 Rs.	20	22	25	26	27
Training received in months	2	2	4	6	6

i) Find the estimation equation of promotion rate on job performance and training received.

ii) Estimate how long it will take a MBS whose score on job performance is 12 and 5 month training