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**J 1801**

M.B.A. DEGREE EXAMINATION, FEBRUARY 2008.

First Semester

DBA 1601 --- MANAGEMENT CONCEPTS

(Regulation 2007)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Is Management a science or art?
2. List the functions of management.
3. Define Managerial planning.
4. Distinguish strategies and policies.
5. Define a virtual organization.
6. What are the different kinds of centralization?
7. Distinguish selection from recruitment.
8. List the barriers of communication.
9. Distinguish planning and control.
10. List the steps in control process.

PART B : (5 × 16 = 80 marks)

11. (a) Why has Frederick Taylor been called “The father of scientific management” and Henri Fayol “The father of modern management theory”? Elaborate.

Or

- (b) Identify the various approaches to management analysis. Discuss their characteristics and contributions as well as their limitations.
12. (a) Explain the steps in planning and the various types of plans.

Or

- (b) Compare the nature of problems against the programmed or non-programmed type of decisions. In a decision problem, how and where would you apply the principle of the limiting factor?
13. (a) Explain matrix organization. Highlight its advantages. What are the guidelines for making a matrix organization effective?

Or

- (b) What is delegation of authority? How do you decide span of control in an organization? And discuss the pros and cons of Decentralization and Centralization with suitable example.
14. (a) Explain any four theories of motivation.

Or

- (b) Define leadership. Discuss any three theories of motivation.
15. (a) Explain the various types of control techniques.

Or

- (b) Highlight the role of computers in management controls?

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**J 1802**

M.B.A DEGREE EXAMINATION, FEBRUARY 2008.

First Semester

DBA 1602 — STATISTICS FOR MANAGEMENT

(Regulation 2007)

Time : Three hours

Maximum : 100 marks

(Statistical tables are not required)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is conditional probability?
2. Define a random variable?
3. Why are samples taken?
4. What is central limit theorem?
5. What is a hypothesis?
6. What is the difference between t–distribution and normal distribution?
7. What is the advantage of non parametric tests over parametric tests?
8. What are the conditions for using Kruskal Walis test?
9. What is strong correlation?
10. How is accuracy of regression equation ascertained?

PART B — (5 × 16 = 80 marks)

11. (a) (i) A doctor has decided to prescribe two new heart drugs to 200 heart patients as follows : 50 get drug A, 50 get drug B and 100 get both. The 200 patients were chosen so that each had an 80% chance of having a heart attack if given neither drug. Drug A reduces the probability of a heart attack by 35%, drug B reduces the probability by 20% and the two drugs work independently when taken together. If a randomly selected patient gets a heart attack, what is the probability that he was given both drugs? (8)

- (ii) Assuming that half the population is vegetarian so that the chance of an individual being a vegetarian is  $\frac{1}{2}$  and assuming that 100 investigators can take sample of 10 individuals to see whether they are vegetarian, how many investigators would you expect to report that 3 people or less were vegetarian? (8)

Or

- (b) (i) A problem in statistics is given to five students A, B, C, D and E. Whose chances of solving it are  $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}$  and  $\frac{1}{6}$  respectively. What is the probability that the problem will be solved? (8)
- (ii) A study of past participants of a training program shows a mean time of 500 hours being spent with a standard deviation of 100 hours. What is the probability that
- (1) A candidate will take more than 600 hours
  - (2) A candidate will take less than 400 hours
  - (3) A candidate will take less than 600 hours
  - (4) A candidate will take between 400 and 600 hours.
- (Assume area between  $z = +1$  to  $z = -1$  as 0.683)
- (2 marks each) (8)
12. (a) Explain the different types of sampling based on probabilistic methods.

Or

- (b) (i) Mary Bartel, an auditor for a large credit card company, knows that, on average, the monthly balance of any given customer is \$112, and the standard deviation is \$56. If Mary audits 50 randomly selected accounts, what is the standard error of the measurement? What should be the sample size if she wants to have a measurement of error  $\pm \$5$ ? (Assume  $z = 1.96$  for 5% significance level). If the population is a finite 1000 customers, what will the sample size be? (8)
- (ii) Discuss the applications of central limit theorem. (8)
13. (a) (i) Two independent samples were collected. The first sample contained 42 elements, and had a mean of 32.3 with a variance of 9. The second sample of 57 elements had a mean of 34 and variance of 16

- (1) Compare the standard error of difference between the two sample means. (4)
- (2) Using  $\alpha = 0.05$ , test whether there is sufficient evidence to show that the second population has a higher mean. (4)

Assume  $z = 2.57$  for 1% significance level.

- (ii) The manufacturer of a certain make of electric bulbs claims that his bulbs have a mean life of 25 months with a standard deviation of 5 months. A random sample of 6 such bulbs give the following values :

Life in month : 24, 26, 30, 20, 20 18.

Can you regard the producer's claim to be valid at 1% level of significance? (Given that the table values of the appropriate test statistic at the said level are 4.032, 3.707 and 3.499 for 5, 6 and 7 degrees of freedom respectively). (8)

Or

- (b) National health care company samples its employee attitudes in 4 regions N, S, C, and W for preference of job review method. The contingency table is as follows.

	N	S	C	W	
Number preferring present method	68	75	57	79	279
Number preferring new method	<u>32</u>	<u>45</u>	<u>33</u>	<u>31</u>	<u>141</u>
	100	120	90	110	420

Test whether region influences the preference towards job review method at 10% significance (Assume cutoff  $\chi^2 = 6.251$  for  $\gamma = 3$ ).

14. (a) (i) The following data show employees' rates of defective work before and after a change in wage incentive plan. Compare the following two sets of data to see whether the change lowered the defective units produced. Use 0.10 level of significance.

Before 8 7 6 9 7 10 8 5 5 8 10 8

After 6 5 8 6 9 8 10 7 5 6 9 8

Use sign test (8)

- (ii) Two judges at a college homecoming parade rank 8 floats in the following order :

Float 1 2 3 4 5 6 7 8

Judge A 5 8 4 3 6 2 7 1

Judge B 7 5 4 2 8 1 6 3

Calculate the rank correlation coefficient. (8)

Or

- (b) A large hospital hires most of its nurses from two major universities in the area. Over the last year they have started giving a test to the newly graduated nurses entering the hospital, to determine which school seems to educate nurses better. Based on the following scores (Max. 100) determine using Mann-Whitney test whether the two schools have differing quality of students.

School A 97 69 73 84 76 92 90 88 84 87 93

School B 88 99 65 69 97 84 85 89 91 90 87 91 72

(Assume at 10% significance level,  $z = 1.645$ )

15. (a) For the following data set
- Plot the scatter diagram
  - Develop the estimating equation that best describes the data
  - Predict Y for  $X = 10, 15, 20$

X	13	16	14	11	17	9	13	17	18	12
Y	6.2	8.6	7.2	4.5	9.0	8.5	6.5	9.3	9.5	5.7

Or

- (b) The western natural gas company has supplied 18, 20, 21, 25 and 26 billion cubic feet of gas respectively for the years 1991-95 :
- Find the linear trend representing the data
  - Calculate the percent trend for the data
  - Calculate cyclical residual for the data
  - In which years does the largest fluctuation of sales from trend occur.