

MANIPAL UNIVERSITY

FIRST SEMESTER MASTER IN HOSPITAL ADMINISTRATION DEGREE EXAMINATION – JUNE 2015

SUBJECT: MHA – 601: EPIDEMIOLOGY, PUBLIC HEALTH, HEALTH ADMINISTRATION AND MEDICAL ETHICS

Monday, June 15, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Write essay on:**

1. List the indicators of health and explain mortality indicators in detail with suitable examples. (10 marks)
2. What are the elements of a prospective cohort study? (10 marks)
3. Discuss Hill's criteria of causation in detail with suitable examples. (10 marks)
4. What is the natural history of disease? Discuss the various phases in detail. (10 marks)
5. Calculate the sensitivity, specificity, positive and negative predictive values for the table below:

True Disease State	Test Result		Total
	Diseased	Healthy(-)	
Diseased (+)	44	10	54
Healthy (-)	23	60	83
Total	67	70	137

(2½ × 4 = 10 marks)

6. **Write short notes on:**

- 6A. Types of epidemics
- 6B. Matching and its relevance in case-control study
- 6C. Secular trend
- 6D. Blinding
- 6E. Spurious association
- 6F. Uses of epidemiology

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY

FIRST SEMESTER MASTER IN HOSPITAL ADMINISTRATION DEGREE EXAMINATION – JUNE 2015

SUBJECT: MHA – 603: BUSINESS STATISTICS, OPERATIONS RESEARCH AND RESEARCH METHODOLOGY

Tuesday, June 16, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL the questions.**

1A. Classify the following into different scales of measurement:

- i) Hemoglobin ii) Stages of cancer

1B. Describe the data given below with the help of a frequency polygon:

Systolic BP (mmHg)	Number of Persons
100-110	7
110-120	16
120-130	19
130-140	31
140-150	41
150-160	23
160-170	10
170-180	3

1C. What is kurtosis? List the different types.

1D. The duration of time for the first exposure to HIV infection to AIDS diagnosis is called the incubation period. The incubation periods of a random sample of 8 HIV infected individuals is given below (in years):

8.5 12.0 10.5 10.0 6.3 13.0 12.0 7.7

Calculate median and standard deviation of incubation period.

(2+4+2+(2+5) = 15 marks)

2A. Check for stability and then solve the following game:

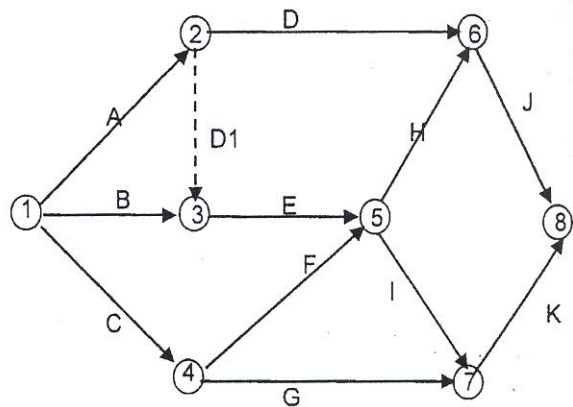
Player A	Player B				
	1	2	3	4	5
1	5	8	13	10	5
2	7	7	11	15	4
3	6	6	9	9	7

2B. One physician on duty full time works in a hospital emergency room. Previous experience has shown that emergency patients arrive according to a Poisson distribution with an average rate of three per hour. The physician can provide emergency treatment for approximately five patients per hour. The distribution of the physician's service time is approximately a negative exponential. Assume that the queue length can be infinite with FCFS discipline. Answer the following questions:

- i) Calculate the probability of the system utilization and idle time.
ii) What is the average time that a patient will spend in the queue?

- 2C. For the details of activity given below, the network is given on its right. If the critical path is given by A – D1 – E – H – J, find the expected duration of the project. Also, find the probability of completing the project on or before 23 weeks.

Activity	a	m	b
A	6	7	8
B	1	2	9
C	1	4	7
D	1	2	3
E	1	2	9
F	1	5	9
G	2	2	8
H	4	4	4
I	4	4	10
J	2	5	14
K	2	2	8



(5+5+5 = 15 marks)

- 3A. What is cluster sampling? Explain the procedure with an example. List its merits and demerits.
- 3B. Discuss the advantages and disadvantages of interviewer administered surveys over self-administered surveys.

(5+5 = 10 marks)

- 4A. How do you estimate sample size for comparing two means?
- 4B. A study was planned to find the prevalence of overweight among people in the age group of 40 to 50 years in an urban community. What is the minimum sample size required for the study if the absolute margin of error is fixed at 3% and confidence level of 95%? A similar study conducted three years before in the same population reported the prevalence of obesity as 18%.

(5+5 = 10 marks)

- 5A. Define with distinction the concepts of simple and multiple regression.
- 5B. What are the objectives of a pilot study? Explain

(5+5 = 10 marks)

- 6A. Describe the concepts of test of significance including the hypothesis and errors.
- 6B. Describe the situations for: i) Z-test ii) Paired t-test iii) ANOVA

(4+6 = 10 marks)

- 7A. Which non parametric method is used when the basic assumptions of one way ANOVA is violated. Explain the test in detail.
- 7B. Give advantages of non-parametric methods.

((1+5)+4 = 10 marks)



Reg. No.

MANIPAL UNIVERSITY

FIRST SEMESTER MASTER IN HOSPITAL ADMINISTRATION DEGREE EXAMINATION – JUNE 2015

SUBJECT: MHA – 607: ORGANISATIONAL BEHAVIOUR

Wednesday, June 17, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

1. Discuss the conclusions drawn from Elton Mayo's experiment. How is it important to manager?

(12+3 = 15 marks)

2. Define 'Management'. Enumerate the managerial skills and discuss the importance of each for a manager to be effective.

(3+12 = 15 marks)

3. **Write short notes on the following questions:**

3A. Herzberg's two factor theory

3B. What are the main components of Attitudes? Discuss

3C. Effective leadership

3D. Competencies of a 'leader'

3E. Likert Managerial style

(10 marks × 5 = 50 marks)

