



## MANIPAL UNIVERSITY

FIRST SEMESTER MASTER IN HOSPITAL ADMINISTRATION DEGREE EXAMINATION -  
JUNE 2017

SUBJECT: MHA 601 - EPIDEMIOLOGY, PUBLIC HEALTH, HEALTH ADMINISTRATION  
AND MEDIA ETHICS  
(REPEATER)

Wednesday, June 21, 2017 (10.00 - 13.00 Hrs.)

Marks: 80

Duration: 180 mins.

Answer ALL the questions.

- 1) Give an overview of study designs and explain each study design. (15)
- 2) Define occupational health. List the factors leading to occupational disease in work environment give two examples of departmental occupational hazards in the hospital setting. (15)  
(2+7+6 = 15 marks)
- 3A) Describe the various levels of prevention giving suitable examples. (10)
- 3B) A study was conducted among women to look for the association between betel quid chewing and esophageal cancer using a case-control study design. The results were computed using the 2 x 2 table as below. (10)

Exposure	Cases	Controls
Betel quid	150	50
No betel quid	50	150

Calculate the odds ratio and interpret your result.  
(7+3 = 10 marks)

- 3C) Describe the role of integrated diseases surveillance project in prevention of communicable diseases. (10)
- 3D) List out the categories of biomedical waste and discuss the treatment methods. (10)
- 3E) What are the legislations enacted to safeguard workers at work place? (10)



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FIRST SEMESTER MASTER IN HOSPITAL ADMINISTRATION DEGREE EXAMINATION - JUNE 2017  
SUBJECT: MHA 603 - BUSINESS STATISTICS, OPERATIONS RESEARCH AND RESEARCH METHODOLOGY  
(REPEATERS)

Thursday, June 22, 2017 (10.00 - 13.00 Hrs.)

Marks: 80

Duration: 180 mins.

Answer ALL the questions.

- 1A) Differentiate between qualitative and quantitative variables with examples. (2)
- 1B) Mean and standard deviation of pulse rate for a group of individuals is 70 and 2 beats per minute respectively. The mean and standard deviation of height is 64 and 3 inches respectively. Which of the two characteristics is more consistent? (3)
- 1C) The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a frequency polygon. (4)

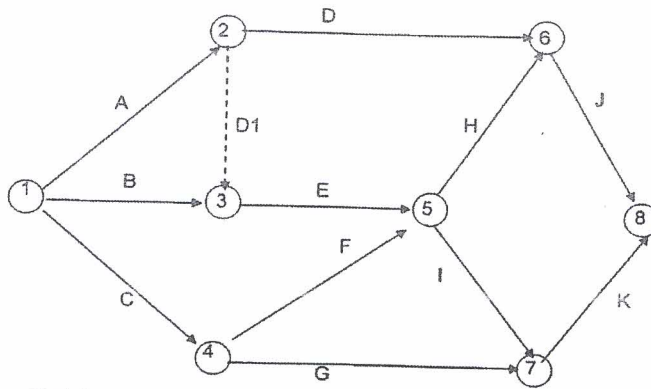
Reaction in mm	Number of persons
8 – 10	24
10 – 12	52
12 – 14	42
14 – 16	48
16 – 18	12
18 – 20	08
20 – 22	14
22 – 24	06

- 1D) Compute mean, median and variance of Erythrocyte Sedimentation Rate (ESR) readings (in mm) obtained from 12 tuberculosis patients. (6)
- 12 8 11 9 8 15 8 12 8 9 11 10
- 2A) On average, six nurses work per shift at a community hospital emergency service. Patients arrive at the emergency service according to Poisson distribution with a mean of six per hour. Service time is exponential, with a mean of thirty minutes per patient. Assume that there is one patient per nurse. Find each of the performance measures listed below: (5)
- Compute the average number of patients in a queue.
  - Compute the average waiting time for patients in a queue and in the system.
- 2B) The table given below summarizes the quantity of each nutrient available in foods and their daily requirement for good health conditions of an individual, as well as the unitary cost of these foods. Formulate an LPP to minimize the total diet cost and comply with nutritional restrictions. (5)

**Costs, nutrients and predetermined nutritional restrictions:**

Nutrient	Milk (glass)	Salad (500mg)	Minimum Nutritional Requirement
Vit. A	2 mg	50 mg	11 mg
Calcium	50 mg	10 mg	70 mg
Cost/Unit	Rs. 4.50	Rs. 3.00	

- 2C) Given the network with information of duration associated with the activities, find the critical path and the duration of the project. The activity D1 is the dummy activity. (5)



Activity	Duration
A	7
B	2
C	4
D	2
E	2
F	5
G	2
H	4
I	4
J	5
K	2

- 3A) What do you mean by a random sample? Briefly explain the characteristics of a good sample. (5)
- 3B) Differentiate between clusters and stratified random sampling techniques. (5)

**Distinguish between the following:**

- 4A) Type I error and type II error (2)
- 4B) Estimator and estimate (2)
- 4C) Interval and point estimation (2)
- 4D) Null and alternate hypothesis (2)
- 4E) Standard deviation and standard error (2)

**Answer the followings:**

- 5A) Why we conduct a pilot study? Mention its objective with an example. (5)
- 5B) What is the purpose of sample size determination? Describe how to compute the sample size for estimating population mean. (2+3 = 5 marks)
- 6A) What are the situations where we use non parametric tests? Mention its advantages and disadvantages. (2+2 = 4 marks) (4)
- 6B) To see if the nervousness elevates blood pressure, the systolic blood pressure (in mmHg) of 12 subjects were measured in a dental setting, then again in a medical setting. Data is given below: (6)

Subject	1	2	3	4	5	6	7	8	9	10	11	12
Dental	122	126	132	120	142	130	142	137	128	132	128	129
Medical	127	128	140	119	145	130	148	135	128	137	128	133

Perform a suitable parametric test.  $[\alpha = 0.05, t_{1 - \alpha/2} (11) = 2.20]$

- 7A) List any four properties of normal curve. (4)
- 7B) Explain in brief the concepts of correlation and linear regression. (6)



# MANIPAL UNIVERSITY

FIRST SEMESTER MASTER IN HOSPITAL ADMINISTRATION DEGREE EXAMINATION -  
JUNE 2017

SUBJECT: MHA 605 - GENERAL MANAGEMENT  
(REPEATERS)

Friday, June 23, 2017 (10.00 - 13.00 Hrs.)

Marks: 80

Duration: 180 mins.

**Write Long Essay on:**

- 1) What is Leadership? Write on leadership styles? Elaborate the link between Leadership and Management? (15)  
(3+7+5 = 15 marks)
- 2) What are the functions of a manager? What is controlling? Elaborate on (15)  
types, span and process of controlling.  
(3+2+3+2+5 = 15 marks)

**Write short notes on the following:**

- 3A) Elaborate on STEEPLED analysis. (10)
- 3B) Factors contributing to ineffective performance. (10)
- 3C) Process of time management in healthcare organization. (10)
- 3D) Differentiate among education, training and development. (10)
- 3E) Role of delegation, empowerment and decentralization in an organization. (10)