

MANIPAL UNIVERSITY**THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009****SUBJECT: BIOSTATISTICS**

Monday, June 08, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

1. Define:
- a) Population b) Sample c) Sampling
d) Probability Sampling e) Non Probability Sampling
- (2×5 = 10 marks)
2. What is Health Information System? What are the requirements and uses of Health Information System?
- (2+4+4 = 10 marks)
- 3A. Define descriptive epidemiology and enumerate its uses.
- 3B. The estimated mid-year population for a city in 1990 was 761,335. During the year, the total new cases of tuberculosis reported from this city were 912 and the total cases of tuberculosis reported during the year were 23,000. Calculate the incidence rate and period prevalence rate for tuberculosis in the year 1990.
- (5+5 = 10 marks)
- 4A. List the properties of normal distribution with the help of a neat diagram.
- 4B. It is observed that the time taken to complete a functional reach test by a group of people is normally distributed with a mean of 12 minutes and a standard deviation of 2 minutes. How many do you expect in a sample of 300 to have a task completion time
- i) Less than 14 minutes ii) Between 8 and 16 minutes
- (5+5 = 10 marks)
5. Explain different measurement scales with examples.
- (5 marks)
6. Write short notes on:
- 6A. Steps involved in research process.
6B. Skewness.
6C. Independent and dependent variables.
6D. Reliability and validity.
6E. Crude birth rate and general fertility rate.
- (5×5 = 25 marks)

7. Total serum proteins (in gm percent) of 10 subjects are given below.
7.8, 7.2, 7.0, 6.8, 7.4, 6.6, 7.1, 7.5, 5.8, 6.6
Calculate mean and median.

(5 marks)

8. The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a frequency polygon on a histogram.

Reaction in mm.	No. 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

(5 marks)



MANIPAL UNIVERSITY**THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009****SUBJECT: HISTOPATHOLOGICAL TECHNIQUES**

Tuesday, June 09, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

✍ Answer all questions.**1. Answer the following:**

- 1A. List the different types of microtome. Explain the parts and mode of operation of each microtome.
- 1B. Write the classification of haematoxylin and discuss the different types of Haematoxylin. Write the procedure for H and E staining.

(15×2 = 30 marks)

2. Write detailed notes on:

- 2A. Dehydration
- 2B. Staining techniques used for collagen fibres
- 2C. Mordants
- 2D. Decalcification
- 2E. Amyloid staining
- 2F. Fixatives
- 2G. Staining for reticulin fibres.

(5×7 = 35 marks)

3. Write short notes on:

- 3A. Tissue embedding using Lukhart's L pieces.
- 3B. Microtome knife sharpening.
- 3C. Role of chelating agents in decalcification.
- 3D. Ziehl Neelsen Technique.
- 3E. Staining and impregnation.

(3×5 = 15 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: CYTOLOGY AND CYTOGENETICS

Wednesday, June 10, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

✍ Answer all questions. Draw diagram if necessary.

- 1A. Explain the cytology of respiratory tract.
1B. Write in detail the morphologic characteristics of malignant cell.

(15×2 = 30 marks)

2. Write notes on:

- 2A. Preservation of fluid specimen in cytology.
2B. Giemsa chromosome banding technique.
2C. Stratified squamous epithelia.
2D. Barr body.
2E. Histocyte.
2F. Preparation of Cytocentrifuge slides.
2G. Procedure for PAP staining.

(5×7 = 35 marks)

3. Write briefly on:

- 3A. Klinefelter's syndrome
3B. Mayer's albumin
3C. Ayer's spatula
3D. Squamous metaplasia
3E. Asbestosis.

(3×5 = 15 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: DIAGNOSTIC BACTERIOLOGY, PARASITOLOGY AND IMMUNOLOGY

Thursday, June 11, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

✍ Answer ALL questions.

1. Define and classify sterilization. Explain in detail autoclave.
(2+3+10 = 15 marks)
2. Enumerate antigen – antibody reactions in the laboratory and discuss agglutination reaction in detail.
(4+11 = 15 marks)
3. Write short essay on:
 - 3A. Morphological classification of bacteria.
 - 3B. Mechanism of innate immunity.
 - 3C. Laboratory diagnosis of anaerobic infections.
 - 3D. Classification of the diarrheogenic E.coli.
 - 3E. Laboratory diagnosis of enteric fever.
 - 3F. Laboratory diagnosis of pulmonary tuberculosis.
 - 3G. Life cycle of *Plasmodium vivax*.(5×7 = 35 marks)
4. Write short notes on:
 - 4A. CAMP test.
 - 4B. Weil – Felix test.
 - 4C. Differences between gram positive and gram negative cell wall.
 - 4D. Cutaneous larva migrans.
 - 4E. Laboratory diagnosis of Strongyloidiasis.(3×5 = 15 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: MYCOLOGY AND VIROLOGY

Friday, June 12, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

✍ Answer all questions. Draw diagrams if necessary.

1A. Elaborate on superficial fungal infections and its Lab diagnosis.

1B. Discuss the transportation and processing of different virological specimens.

(15×2 = 30 marks)

2. Write detailed notes on:

2A. Mycetoma

2B. Herpes virus

2C. ELISA

2D. Slide culture technique

2E. Rabies

2F. Saprophytic fungi

2G. Piedras

(5×7 = 35 marks)

3. Write Short notes on:

3A. India ink preparation

3B. Explant culture

3C. Aspergilosis

3D. Hepatitis B virus

3E. BHIA.

(3×5 = 15 marks)

