

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2010

### SUBJECT: BIostatISTICS (OLD REGULATION)

Monday, December 13, 2010

Time: 10:00-13:00 Hrs.

Max. Marks: 80

**1. Define the following:**

- 1A. Crude death rate
- 1B. Infant mortality rate
- 1C. Neonatal mortality rate
- 1D. Post neonatal mortality rate
- 1E. Perinatal mortality rate

(2×5 = 10 marks)

- 2A. What do you mean by central tendency? Define the various measure of central tendency.
- 2B. Calculate range and standard deviation for the following data.

Age of 10 subjects in years	23	27	29	20	32	25	36	31	38	33
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(5+5 = 10 marks)

- 3A. With the help of diagrams enumerate the properties of correlation coefficient.
- 3B. Hemoglobin levels (in gm%) of 1500 students follows normal distribution with mean 13 and standard deviation 3. What percentage students will have hemoglobin level?
  - i) Between 16 and 19
  - ii) Below 7

(5+5 = 10 marks)

- 4A. What is meant by hypothesis? What are the characteristics of a good hypothesis?
- 4B. Two medical colleges A & B conducted a study on addiction of alcohol among their students. Out of 1000 students in college A, 200 students reported that they are addicted to alcohol while 350 students out of 1100 from college B reported of addiction. Present this data using a multiple bar diagram.

(5+5 = 10 marks)

- 5A. Define population, sample, sampling, probability sampling and non-probability sampling.
- 5B. Briefly explain simple random sampling.

(5+5 = 10 marks)

- 6A. Discuss the various measurement scales with help of appropriate examples.
- 6B. Define epidemiology and enumerate the uses of epidemiology.

(5+5 = 10 marks)

**7. Write short notes on:**

- 7A. Role of statistics in health science research.
- 7B. Dependent and independent variables with examples.
- 7C. Health information system and its uses.
- 7D. Cross sectional studies.

(5×4 = 20 marks)



**MANIPAL UNIVERSITY****THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2010****SUBJECT: HISTOPATHOLOGICAL TECHNIQUES****(COMMON FOR BOTH OLD AND NEW REGULATION)**

Wednesday, December 15, 2010

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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

- 1A. Write in detail about handling and Embedding of tiny tissue biopsies
- 1B. Enumerate the different staining techniques used for the demonstration of fat. Write the principle, procedure and reagent preparation for fat staining.

(15×2 = 30 marks)

**2. Write detailed notes on:**

- 2A. Decalcification.
- 2B. Rotary microtome.
- 2C. Reticulin staining.
- 2D. Problems in paraffin and frozen section cutting.
- 2E. Masson's Fontana method for melanin.
- 2F. Staining and differentiation.
- 2G. Dehydration.

(5×7 = 35 marks)

**3. Write short notes on:**

- 3A. Simple fixatives.
- 3B. Van Gieson's staining method.
- 3C. Clearing.
- 3D. Chemical method for detection of end point of decalcification.
- 3E. Mordants.

(3×5 = 15 marks)



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## MANIPAL UNIVERSITY

THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2010

SUBJECT: CYTOLOGY AND CYTOGENETICS  
(COMMON FOR BOTH OLD AND NEW REGULATION)

Friday, December 17, 2010

Time: 10:00-13:00 Hrs.

Max. Marks: 80

- ✍ Answer all questions.
- ✍ Draw diagrams if necessary.

- 1A. Explain in detail about cytology of urine.
- 1B. Write in detail about cell morphology.

(15×2 = 30 marks)

**2. Write notes on:**

- 2A. Heterochromatin.
- 2B. Spray fixatives.
- 2C. Preparation of smear using membrane filter.
- 2D. Mitosis.
- 2E. Histocyte.
- 2F. Procedure for PAP staining.
- 2G. Cytology of endometrium.

(5×7 = 35 marks)

**3. Write briefly on:**

- 3A. Shorr's stain.
- 3B. Cervical scraper.
- 3C. Triple smear method.
- 3D. Down syndrome.
- 3E. Preparation of albumenized slide.

(3×5 = 15 marks)



**MANIPAL UNIVERSITY****THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2010****SUBJECT: DIAGNOSTIC BACTERIOLOGY, PARASITOLOGY AND IMMUNOLOGY****(OLD REGULATION)**

Monday, December 20, 2010

Time: 10:00-13:00 Hrs.

Max. Marks: 80

**☞ Answer ALL questions.**

1. Discuss the morphology, transmission and laboratory diagnosis of *Entamoeba histolytica*.  
Add a note on extra intestinal amoebiasis.

(2+2+8+3 = 15 marks)

2. Classify and explain hypersensitivity reaction.

(3+12 = 15 marks)

**3. Write short essay on:**3A. Classification of *Mycobacterium leprae*.

3B. Pathogenesis of tetanus.

3C. Laboratory diagnosis of malarial parasite.

3D. List five disinfectants commonly used in hospitals. Give their mode of action and uses.

3E. Morphological classification of fungi with examples.

3F. Active immunity with examples.

3G. Anaerobic culture methods.

(5×7 = 35 marks)

**4. Write short notes on:**

4A. Differences between gram positive and gram negative cell wall.

4B. Malignant pustule.

4C. NIH swab.

4D. Nagler's reaction.

4E. Properties of antigens.

(3×5 = 15 marks)



**MANIPAL UNIVERSITY****THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2010****SUBJECT: GENERAL BACTERIOLOGY, IMMUNOLOGY AND SYSTEMIC BACTERIOLOGY  
(NEW REGULATION)**

Monday, December 20, 2010

Time: 10:00-13:00 Hrs.

Max. Marks: 80

**✍ Answer the following questions:**

1. Enumerate the agents causing sexually transmitted diseases. Explain the laboratory diagnosis of syphilis.

(15 marks)

2. Define and classify immunity. Explain the mechanism of innate immunity.

(15 marks)

**3. Write short notes on:**

3A. Sterilization using filters.

3B. Complement fixation test.

3C. Gene transfer by transduction.

3D. Laboratory diagnosis of leprosy.

3E. Laboratory diagnosis of cholera.

(7×5 = 35 marks)

**4. Write short notes on:**

4A. Classification of autoimmune diseases.

4B. Castaneda's method of blood culture.

4C. ELISA.

4D. Nagler's reaction.

4E. Lancefield classification of streptococcus.

(3×5 = 15 marks)



**MANIPAL UNIVERSITY**  
**THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2010**

**SUBJECT: MYCOLOGY AND VIROLOGY**  
**(OLD REGULATION)**

Wednesday, December 22, 2010

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Answer all questions.**

✍ **Draw diagrams if necessary.**

1A. Elaborate on the general techniques used for the identification of Mycotic infections.

1B. Discuss the different stages of viral multiplication.

(15×2 = 30 marks)

**2. Write detailed notes on:**

2A. Scotch tape preparations of fungal colonies.

2B. DNA Viruses.

2C. Fungal media.

2D. Epstein Barr virus.

2E. Dermatophytes.

2F. Detection of virus growth in cell cultures.

2G. Saprophytic fungi.

(5×7 = 35 marks)

**3. Write short notes on:**

3A. Potato flakes agar.

3B. Viral transport media.

3C. Rapid growers.

3D. Tinea Nigra.

3E. Hepatitis B virus.

(3×5 = 15 marks)

