

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER M.Sc. MEDICAL (ANATOMY, PHYSIOLOGY, BIOCHEMISTRY,
PHARMACOLOGY, MICROBIOLOGY) DEGREE EXAMINATION – AUGUST 2020

SUBJECT: INTRODUCTION TO RESEARCH – COMMON CORE (MCC 602)

Wednesday, August 12, 2020

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Long answer questions:

1. Explain the different components in a research proposal.

(10 marks)

2A. Define Skewness and Kurtosis. Discuss different measures of Skewness and Kurtosis.

2B. Assume that the age at onset Disease X is distributed normally with mean of 50 years and standard deviation of 12 years. What is the probability that an individual affiliated with X had developed it before age 35 years? (Given: Cumulative area under normal curve $Z=-1.25$ is 0.1056)

(10 marks)

3. Short answer questions:

3A. Find the range, standard deviation and coefficient of variation for the following values of birth weight(kg): 2.5, 2.8, 2.5, 2.8, 3.3, 3.5, 3.2, 3.0, 2.9, 3.5

3B. What is Probability Sampling? Discuss in brief the procedure of any two probability sampling techniques.

3C. A group of 15 normal children in a study had a mean serum iron level of 148 $\mu\text{g}\%$ and standard deviation of 44.03. Another group of 15 children with infantile cirrhosis of liver had mean serum iron level of 151 $\mu\text{g}\%$ and standard deviation of 49.04. Is the difference between the two serum means statistically significant? [Given: $t_{0.05, 28} = 2.05$]

3D. Explain cohort study design, with a suitable example. Add a note on its advantages and disadvantages.

3E. What is reliability of diagnostic tests? What are the methods to check reliability of diagnostic tests?

3F. What are the four principles of bioethics? Explain any one in detail.

(5 marks \times 6 = 30 marks)



Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND SEMESTER M.Sc. (MEDICAL MICROBIOLOGY) DEGREE
EXAMINATION – AUGUST 2020

SUBJECT: SYSTEMATIC BACTERIOLOGY - 1 (MIC 604)

Thursday, August 13, 2020

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Long Essays:

1. Describe the pathogenesis and laboratory diagnosis of pulmonary tuberculosis. (10 marks)

2. Describe the pathogenesis and laboratory diagnosis of *Neisseria meningitidis*. (10 marks)

3. Write short notes on:

3A. *Bacillus cereus*

3B. MRSA

3C. Prophylactic measures for Tetanus.

3D. Laboratory diagnosis of bacillary dysentery

3E. Group B Streptococci

3F. Diphtheroid species of medical importance

(5 marks × 6 = 30 marks)



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SECOND SEMESTER M.Sc. (MEDICAL MICROBIOLOGY) DEGREE
EXAMINATION – AUGUST 2020

SUBJECT: SYSTEMATIC BACTERIOLOGY - 2 (MIC 606)

Friday, August 14, 2020

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

- ✍ Answer ALL the questions. Write answers that are clear, relevant and legible.
- ✍ Illustrate your answer with neatly drawn and correctly labelled diagrams wherever appropriate.

✍ **Long Essays:**

1. Describe the Clinical Stages, Complications and Laboratory Diagnosis of Syphilis. (10 marks)

2. Classify Rickettsiae. Discuss the pathogenesis and laboratory diagnosis of typhus fever. (10 marks)

3. **Write short notes on:**

3A. Pathogenesis and Laboratory Diagnosis of Nocardiosis

3B. Laboratory Diagnosis of Brucellosis

3C. Atypical pneumonia

3D. Non-sporing anaerobic infections

3E. Lyme disease

3F. Role of Non-fermenters in Hospital Acquired Infection

(5 marks × 6 = 30 marks)

