

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

M.Sc. (FINAL) MICROBIOLOGY DEGREE EXAMINATION – JULY 2006

PAPER I: GENERAL MICROBIOLOGY AND IMMUNOLOGY

Monday, July 03, 2006

Time available: 3 Hours

Maximum Marks: 100

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

1. Describe the mechanisms of gene transfer in a prokaryotic cell. Add a note on the drug resistance in bacteria.

(25 marks)

2. Classify immunity. Describe in detail the innate immunity.

(25 marks)

3. Write short notes on:

3A. Phase contrast microscope.

3B. Outer membrane.

3C. Hot-air oven.

3D. Immunodiffusion.

3E. HLA-typing.

(10×5 = 50 marks)

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M.Sc. (FINAL) MICROBIOLOGY DEGREE EXAMINATION – JULY 2006

PAPER II: SYSTEMATIC BACTERIOLOGY AND MYCOLOGY

Tuesday, July 04, 2006

Time available: 3 Hours

Maximum Marks: 100

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

1. Describe the pathogenesis, laboratory diagnosis and prophylaxis of tuberculosis. Add a note on immunity in tuberculosis.

(25 marks)

2. Classify nonsporing anaerobes. Describe the virulence factors, pathogenesis, clinical condition and laboratory diagnosis of nonsporing anaerobic infections.

(25 marks)

3. Write short notes on:

3A. Pseudomonas infections.

3B. El Tor vibrios.

3C. Candidiasis.

3D. Fungal spores.

3E. *Histoplasma capsulatum*.

(10×5 = 50 marks)

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M.Sc. (FINAL) MICROBIOLOGY DEGREE EXAMINATION – JULY 2006

PAPER III: PARASITOLOGY AND VIROLOGY

Wednesday, July 05, 2006

Time available: 3 Hours

Maximum Marks: 100

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

1. Classify Nematodes. Describe the life cycle, pathogenesis and laboratory diagnosis of *Ascaris lumbricoides*.

(25 marks)

2. Enumerate hepatitis viruses. Describe the pathogenesis and laboratory diagnosis of Hepatitis B virus infection.

(25 marks)

3. Write short notes on:

- 3A. *Cryptosporidium parvum*.
- 3B. Cultivation of *Entamoeba histolytica*.
- 3C. Oncogenic viruses.
- 3D. *Hymenolepis nana*.
- 3E. MMR vaccine.

(10×5 = 50 marks)

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

M.Sc. (FINAL) MICROBIOLOGY DEGREE EXAMINATION – DECEMBER 2006

PAPER I: GENERAL MICROBIOLOGY AND IMMUNOLOGY

Monday, December 04, 2006

Time available: 3 Hours

Maximum Marks: 100

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

1. Describe the bacteriological analysis of water.

(25 marks)

2. What are monoclonal antibodies? Describe hybridoma technology.

(25 marks)

3. Write short notes on:
 - 3A. Preservation of bacterial stock cultures.
 - 3B. Genetic mechanisms of drug resistance.
 - 3C. Passive immunity.
 - 3D. Graft- versus- host reaction.
 - 3E. Delayed hypersensitivity reactions.

(10×5 = 50 marks)

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PAPER II: SYSTEMATIC BACTERIOLOGY AND MYCOLOGY

Tuesday, December 05, 2006

Time available: 3 Hours

Maximum Marks: 100

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

1. Describe the pathogenesis, laboratory diagnosis and epidemiology of human anthrax.
(25 marks)

 2. Describe the laboratory diagnosis of fungal infections.
(25 marks)

 3. Write short notes on:
 - 3A. Bacterial vaginosis.
 - 3B. *Clostridium difficile*.
 - 3C. *Cryptococcus neoformans*.
 - 3D. *Mycobacterium avium* complex.
 - 3E. Enterotoxigenic *Escherichia coli*.
- (10×5 = 50 marks)

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M.Sc. (FINAL) MICROBIOLOGY DEGREE EXAMINATION – DECEMBER 2006

PAPER III: PARASITOLOGY AND VIROLOGY

Wednesday, December 06, 2006

Time available: 3 Hours

Maximum Marks: 100

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

1. Classify Nematodes. Describe the life cycle and laboratory diagnosis of *Ancylostoma duodenale*.

(25 marks)

2. Classify Myxovirus. Describe the pathogenesis, laboratory diagnosis and prophylaxis of measles.

(25 marks)

3. Write short notes on:

3A. Antigenic shift and drift in Influenza virus.

3B. Kyasanur forest disease.

3C. Free living amoebae.

3D. Malarial vaccines.

3E. Interferons.

(10×5 = 50 marks)