

MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND YEAR B.P.T./B.O.T./B.Sc. R.T./ B.Sc. R.R.T. & D.T
DEGREE EXAMINATION – JUNE 2018

SUBJECT: PATHOLOGY

(2010 REGULATION/BOT 209:2015 & 2011 SCHEME/2015 & 2010 SCHEME/BDT 201)

Thursday, June 21, 2018

Time: 10:00-11:30 Hrs.

Max. Marks: 40

- ✍ **Answer ALL questions.**
- ✍ **Illustrate your answers with diagrams wherever necessary.**

1. Classify anemia. Discuss the laboratory diagnosis of megaloblastic anemia.
(2+5 = 7 marks)

2. Define inflammation. Mention five cardinal signs of inflammation. Discuss phagocytosis.
(1+2+5 = 8 marks)

3. **Write short notes on:**
 - 3A. Mention the types and complications of diabetes mellitus
 - 3B. Rheumatoid arthritis
 - 3C. Etiology and clinical features of Bronchiectasis
 - 3D. Etiology and morphology of peptic ulcer
 - 3E. Gangrene

(5 marks × 5 = 25 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION**SECOND YEAR BPT/BOT/B.Sc. RT/B.Sc. CVT/B.Sc. RRT & DT
DEGREE EXAMINATION – JUNE 2018****SUBJECT: MICROBIOLOGY**

(COMMON FOR 2010 REGULATION/BOT 208:2015 & 2011 SCHEME/2010 & 2015 SCHEME/2015 SCHEME/BDT 202)

Friday, June 22, 2018

Time: 10:00-11:30 Hrs.

Max. Marks: 40

✍ **Draw diagrams wherever appropriate.**

1. Describe the pathogenesis and laboratory diagnosis of human immunodeficiency virus infection.

(4+4 = 8 marks)

2. Describe the predisposing factors in urinary tract infections (UTI). Discuss the laboratory diagnosis of UTI.

(2+5 = 7 marks)

3. **Write briefly on:**

3A. Mechanism of type IV hypersensitivity

3B. Laboratory diagnosis of tuberculosis

3C. MRSA and its importance in hospital associated infections

3D. Moist heat sterilization above 100°C

3E. Bacterial flagella

(5 marks × 5 = 25 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND YEAR B.P.T./B.O.T./B.Sc. R.T./B.Sc. R.R.T. & D.T.
DEGREE EXAMINATION – JUNE 2018

SUBJECT: PHARMACOLOGY

(COMMON FOR 2010 REGULATION/BOT 207:2015 & 2011 SCHEME/2015 SCHEME/BDT 203)

Saturday, June 23, 2018

Time: 10:00-11:30 Hrs.

Max. Marks: 40

1. **Answer the following questions:**

- 1A. Mention two each advantages and disadvantages of intravenous route of drug administration.
- 1B. Mention three types of non-receptor mediated drug actions with an example for each.
- 1C. Classify skeletal muscle relaxants with an example for each class.

(2+3+3 = 8 marks)

2. **Define the following terms:**

- 2A. Plasma half life
- 2B. Potency

(1 mark × 2 = 2 marks)

3. **Explain the mechanism of action of the following drugs:**

- 3A. Digoxin
- 3B. Warfarin

(2 marks × 2 = 4 marks)

- 4A. List three first line drugs used in tuberculosis and describe the mechanism of action of any one of them.
- 4B. List two insulin preparations and mention two adverse effects of any one of them.
- 4C. Enumerate two corticosteroids and list their two uses and two adverse effects.

(3+2+3 = 8 marks)

5. **Mention two examples and two uses of the following classes of drugs:**

- 5A. Macrolides
- 5B. Alpha blockers
- 5C. H₂ blockers
- 5D. Beta lactam antibiotics
- 5E. Opioids

(2 marks × 5 = 10 marks)

6. Explain the pharmacological basis for combining levodopa with carbidopa for the treatment of parkinsonism.

(2 marks)

7. **Mention two drugs each used in the following conditions:**

7A. Congestive cardiac failure

7B. Bronchial asthma

7C. Insomnia

7D. HIV infection

7E. Angina pectoris

7F. Gout

(1 mark × 6 = 6 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND YEAR B. Sc. R.T. DEGREE EXAMINATION – JUNE 2018

SUBJECT: RESPIRATORY DISEASE PROCESS
(2010 & 2015 SCHEME)

Monday, June 25, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Draw diagrams wherever necessary.**

1. **Describe the clinical features, X-ray findings diagnosis and drugs of choice of the following infections:**

- 1A. Pnuemocystis carinii pneumonia
- 1B. Psuedomonas Pnuemonia
- 1C. Staphylococoal Pnuemonia
- 1D. Atypical Pnuemonia

(4+4+4+4 = 16 marks)

2. Write in detail about lung cancer and lung abscess

(8+8 = 16 marks)

3. **Write short notes on:**

3A. Pathophysiology of pulmonary edema

(8 marks)

3B. Staging and management of small cell carcinoma

(4+4 = 8 marks)

3C. Pulmonary hypertension

(8 marks)

3D. Drugs used in bronchial asthma

(8 marks)

3E. Clinical features and pathophysiology of pulmonary tuberculosis

(4+4 = 8 marks)

3F. Organophosphorous effects

(8 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND YEAR B. Sc. R.T. DEGREE EXAMINATION – JUNE 2018
SUBJECT: DIAGNOSTIC TECHNIQUES
(2010 & 2015 SCHEME)

Tuesday, June 26, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Draw neat and labeled diagrams wherever necessary:**

1. Define tidal volume, vital capacity, and functional residual capacity. Mention two respiratory care manoeuvres that improve FRC. How is tidal volume measured by the bedside and in the pulmonary function laboratory? What is its clinical significance?

(2+2+2+2+6+2 = 16 marks)

2. Explain in detail the conduction system of heart. With the help of labeled diagram, describe the normal electrocardiogram. What is the normal rate of SA node and AV node?

(4+8+4 = 16 marks)

3. **Write short notes on:**

3A. Differentiation of metabolic acidosis from respiratory acidosis on the basis of an arterial blood gas report

3B. Bronchial provocation test

3C. Explain the placement of 12 lead ECG

3D. Write the chest x ray characteristics of:

i) Pneumonia ii) Pulmonary Tuberculosis

3E. Central venous pressure waveforms and its significance

3F. Preanalytical errors associated with arterial blood sampling

(8 marks × 6 = 48 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2018
SUBJECT: APPLIED CARDIOPULMONARY ANATOMY AND PHYSIOLOGY
(2010 & 2015 SCHEME)

Wednesday, June 27, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

1. Discuss the normal mechanisms of acid base balance? Add a short note on respiratory alkalosis?

(8+8 = 16 marks)

2. With appropriate diagram discuss Lung Volumes and Capacities of a healthy adult.

(8+8 = 16 marks)

3. **Write short notes on:**
 - 3A. Tracheobronchial tree
 - 3B. Blood pressure regulation
 - 3C. Arterial oxygen content
 - 3D. Anatomy of heart
 - 3E. Factors affecting cardiac output
 - 3F. Compliance and time constant

(8 marks × 6 = 48 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2018

SUBJECT: RESPIRATORY THERAPY SCIENCE II
(2010 & 2015 SCHEME)

Thursday, June 28, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

1. What do you mean by the term positive end expiratory pressure? How to decide optimum peep for a patient? What are the effects on different organ systems of body?
(5+5+6 = 16 marks)

2. With the help of diagram, explain the meaning of the term mean airway pressure. Enumerate the factors that affect mean airway pressure. Describe the beneficial and detrimental pulmonary effects of positive pressure ventilation
(4+4+8 = 16 marks)

3. **Write short notes on:**
 - 3A. High vs low tidal volumes in mechanical ventilation
 - 3B. Phase variables
 - 3C. Volume controlled vs pressure controlled modes of ventilation
 - 3D. Steps for gradual T tube weaning
 - 3E. Positive pressure ventilation
 - 3F. Tracheostomy procedure in intensive Care units

(8 marks × 6 = 48 marks)

