Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR B.P.T./B.O.T./B.Sc. R.T./ B.Sc. C.V.T./ B.Sc. R.R.T. & D.T/ FOURTH SEMESTER B. PFT DEGREE EXAMINATION – JUNE 2017

SUBJECT: PATHOLOGY

(2010 REGULATION/2011 & 2015 SCHEME/2010 & 2015 SCHEME/2011 & 2015 SCHEME/BDT 201/2015 & 2014 SCHEME)

Friday, June 02, 2017

Time: 10:00-11:30 Hrs. Max. Marks: 40

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

1. Define necrosis. Mention and explain four morphologic types of necrosis. Give one example for each.

(2+4+2 = 8 marks)

2. Define neoplasia. List five differences between benign and malignant tumors.

(2+5 = 7 marks)

3. **Write short notes on:**

3A. Etiology of atherosclerosis

3B. Peripheral blood findings of iron deficiency anaemia

3C. Clinical features and microscopy of lepromatous leprosy

3D. Complications of diabetes mellitus

3E. Definition, etiology and clinical features of chronic bronchitis

(5 marks × 5 = 25 marks)

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SECOND YEAR BPT/BOT/B.Sc. RT/B.Sc. CVT/B.Sc. RRT & DT/ FOURTH SEMESTER B. PFT DEGREE EXAMINATION – JUNE 2017

SUBJECT: MICROBIOLOGY

(COMMON FOR 2010 REGULATION/2011 & 2015 SCHEME/2010 & 2015 SCHEME/2011 & 2015 SCHEME/BDT 202/2015 & 2014 SCHEME)

Monday, June 05, 2017

Time: 10:00-11:30 Hrs. Max. Marks: 40

✍ **Draw Diagrams wherever appropriate.**

1. Define and classify hypersensitivity reactions. Discuss the mechanism of IgE mediated hypersensitivity reaction.

(1+2+5 = 8 marks)

2. Discuss the pathogenesis and laboratory diagnosis of cholera.

(3+4 = 7 marks)

3. **Write short notes on:**

3A. Bacterial growth curve
3B. Prophylaxis of poliomyelitis
3C. Autoclave
3D. Laboratory diagnosis of HIV infection
3E. Gram negative bacterial cell wall

(5 marks × 5 = 25 marks)

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SECOND YEAR B.P.T./B.O.T./B.Sc. M.I.T./B.Sc. C.V.T./B.Sc. R.T./B.Sc. R.R.T. & D.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: PHARMACOLOGY

(COMMON FOR 2010 REGULATION/2011 & 2015 SCHEME/2012 SCHEME/2011 & 2015 SCHEME/2015 SCHEME /BDT 203)

Wednesday, June 07, 2017

Time: 10:00-11:30 Hrs. Max. Marks: 40

✍ **Answer the following questions:**

1. Explain the following terms with an example:

1A. Idiosyncrasy

1B. Synergism

1C. Chemoprophylaxis

1D. Local anesthetics

(2 marks × 4 = 8 marks)

2. Mention one advantage and one disadvantage of the following routes of drug administration:

2A. Transdermal

2B. Subcutaneous

(1 mark × 2 = 2 marks)

3A. Explain the mechanism of action of chloroquine.

3B. List two classes of antiasthmatic drugs with an example for each.

3C. List two cholinergic receptors and mention two adverse effects of atropine.

(2+2+2 = 6 marks)

4. Mention two examples and two uses of the following group of drugs:

4A. Proton pump inhibitors

4B. NSAIDs

4C. ACE inhibitors

(2 marks × 3 = 6 marks)

5. List two drugs used in the following conditions:

5A. HIV infection

5B. Vomiting

5C. Parkinsonism

5D. Tuberculosis

5E. Epilepsy

(1 mark × 5 = 5 marks)

6A. List two anticoagulants and explain the mechanism of action of any one.

6B. List two beta blockers and mention their two therapeutic uses and two adverse effects.

6C. Define first order kinetics.

6D. List two aminoglycosides and mention their four common properties.

6E. List two glucocorticoids and mention their two uses and two adverse effects.

(3+3+1+3+3 = 13 marks)

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SECOND YEAR B. Sc. R.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: DIAGNOSTIC TECHNIQUES
(2010 & 2015 SCHEME)

Monday, June 12, 2017

Time: 10:00-13:00 Hrs. Max. Marks: 80

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

1. A 35 year old woman was admitted to the emergency department with a diagnosis of drug overdose. She has slow and shallow respirations. Her ABG on room air showed pH of 7.30, $PaCO_2$ of 55 mmHg, PaO_2 of 76mmHg and HCO_3^- of 27 mEq. Describe your assessment and of this ABG and manage accordingly?

(16 marks)

2. Describe your systematic assessment of basic pulmonary function test results.

(16 marks)

3. Explain the placement of Pulmonary Artery catheters with help of neat labelled diagram?

(8 marks)

4. Write the normal values of lung volumes and capacities. How do they differ between obstructive and restrictive lung disease?

(2+6 = 8 marks)

5. Methods for measuring Cardiac output.

(8 marks)

6. Describe the ECG changes in each of the following conditions:
   i) Myocardial ischemia and infraction
   ii) Ventricular tachycardia
   iii) Asystole

(4+2+2 = 8 marks)

7. Radiological feature of
   i) Emphysema
   ii) Lung abscess

(4+4 = 8 marks)

8. Write the indication, techniques and complication of Arterial Blood Gas analysis.

(2+4+2 = 8 marks)

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SECOND YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: APPLIED CARDIOPULMONARY ANATOMY AND PHYSIOLOGY

(2010 & 2015 SCHEME)

Wednesday, June 14, 2017

Time: 10:00-13:00 Hrs. Max. Marks: 80

1. Define compliance. Enumerate and briefly describe various types of compliance. Name four conditions where lung compliance is altered. Briefly describe the effects of change in compliance on respiration. How can compliance be measured? Add a note on time constant in relation to alveoli.

(2+3+2+3+2+4 = 16 marks)

2. Name the borders of the heart and what structures constitute each? Name the valves of the heart and describe the function. What are the cardiac tendinae? Where are they located and what is their function?

(16 marks)

3. **Write short notes on:**

3A. Surface Tension
3B. Functional Residual capacity
3C. Chloride Shift
3D. Equal pressure point
3E. Properties of cardiac muscles
3F. Electrical and mechanical events of cardiac cycle

(8 marks × 6 = 48 marks)

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SECOND YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: RESPIRATORY THERAPY SCIENCE II

(2010 & 2015 SCHEME)

Friday, June 16, 2017

Time: 10:00-13:00 Hrs. Max. Marks: 80

1. Write in detail ventilator management of ARDS patients. What are the different strategies for improving ventilation in a critically ill patient? With a help of a diagram write about mean airway pressure.

(6+4+6 = 16 marks)

2. Describe how ventilator support is used in the management of each of the following three conditions:

2A. Closed head injury

2B. Flail chest

2C. Obstructive lung disease

(4+6+6 = 16 marks)

3. **Write short notes on:**

3A. Causes of ventilatory dependence

3B. Mandatory Minute Ventilation

3C. Renal effects of positive pressure ventilation

3D. Different types of pressure gradients in respiratory physiology

3E. Time constant

3F. Compressed volume loss during mechanical ventilation

(8 marks × 6 = 48 marks)