

MANIPAL UNIVERSITY**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2016****SUBJECT: PAPER I: GENERAL PHYSIOLOGY INCLUDING HISTORY OF PHYSIOLOGY**

Monday, April 18, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Draw diagrams wherever necessary.**

✍ **Long Essay:**

1. Draw and label the electron microscopic structure of cell membrane. Describe briefly the various transport mechanisms in cell membrane.

(15 marks)

2. Discuss acid-base balance in detail. Add a note on acidosis and alkalosis.

(15 marks)

3. **Short Essay:**

3A. Plasma Proteins and their clinical significance

3B. Explain the genesis of bio-potentials and their applications

3C. Homeostasis in health and disease

3D. Neuromuscular Blocking agents and Myasthenia gravis

3E. Role of lymphocytes in Immunity

3F. Feed – back Mechanisms

3G. Acclimatization and its physiological basis of management

3H. Role of Yoga in Type 2 Diabetes

3I. Contributions of W.B.Cannon to Physiology

3J. Compare the properties of Skeletal, Cardiac and Smooth muscles

(7 marks × 10 = 70 marks)



MANIPAL UNIVERSITY**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2016****SUBJECT: PAPER II: SYSTEMIC PHYSIOLOGY (SYSTEM PROVIDING TRANSPORT, NUTRITION AND ENERGY) INCLUDING COMPARATIVE PHYSIOLOGY**

Tuesday, April 19, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Explain the cardiovascular changes that occur with muscular exercise.

(15 marks)

2. Describe the changes occurring in the body during acclimatization to high altitude. Add a note on “mountain sickness”.

(15 marks)

3. **Write on:**

3A. Mechanism of vomiting

3B. Enteric nervous system

3C. Renal medullary osmotic gradient

3D. Autorhythmicity of cardiac muscle

3E. “Set-Point” for body temperature control

3F. Bronchial circulation

3G. Central alveolar hypoventilation

3H. Orexigenic substances

3I. Gastric emptying

3J. Steatorrhea

(7 marks × 10 = 70 marks)



MANIPAL UNIVERSITY**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2016****SUBJECT: PAPER III: SYSTEMIC PHYSIOLOGY (SYSTEM CONCERNED WITH PROCREATION, REGULATION AND NEURAL CONTROL)**

Wednesday, April 20, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Describe the role of reticular formation of brain. (15 marks)

2. Describe the metabolic derangements in uncontrolled type 2 diabetes mellitus. (15 marks)

3. **Write briefly on:**

3A. Consequences of castration in a child

3B. Human placental lactogen

3C. Parturition

3D. Pineal gland

3E. Antithyroid drugs

3F. Impedance matching

3G. Mechanism of accommodation

3H. Referred pain

3I. Blood brain barrier

3J. “Morning after” pill

(7 marks × 10 = 70 marks)



MANIPAL UNIVERSITY**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2016****SUBJECT: PAPER IV: APPLIED PHYSIOLOGY INCLUDING RECENT ADVANCES**

Thursday, April 21, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Answer ALL the questions.**
- ✍ **Draw a diagrams wherever necessary.**

✍ Long Essay:

1. Define anemia. Explain the different types based on the etiology and morphology. (15 marks)
2. Explain the bleeding and clotting disorders. (15 marks)

3. Explain the following:

- 3A. Apoptosis
- 3B. Electroencephalogram
- 3C. Parkinsonism
- 3D. Graves disease
- 3E. Lung function test
- 3F. Measurement of different body fluids
- 3G. Obesity
- 3H. Student's t test
- 3I. Pathophysiology of circulatory shock
- 3J. Senescence

(7 marks × 10 = 70 marks)

