

**MANIPAL UNIVERSITY****FIRST YEAR B.P.T./B.O.T. DEGREE EXAMINATION – AUGUST 2013****SUBJECT: ANATOMY  
(COMMON FOR BOTH OLD & NEW REGULATIONS)**

Monday, August 26, 2013

Time: 10.00-13.00 Hours.

Max. Marks: 80

1. Describe the Radial nerve under following headings:

1A. Origin

1B. Course

1C. Branches and distribution

1D. Clinical anatomy

(1+5+10+4 = 20 marks)

2. Describe the ankle joint under following headings:

2A. Articulating parts

2B. Type and subtype

2C. Capsule and ligaments

2D. Movements and muscles producing them

2E. Applied anatomy

(2+2+7+7+2 = 20 marks)

3. Write briefly on:

3A. Circle of Willis.

3B. Facial nerve.

3C. Classification and functions of Cerebellum.

3D. Corticospinal tract.

3E. Parts and functions of basal nuclei.

(5×5 = 25 marks)

4. Write short notes on:

4A. Fibrous joints.

4B. Parts and position of uterus.

4C. Arch of aorta.

4D. Pleura.

4E. Oesophagus.

(3×5 = 15 marks)



## MANIPAL UNIVERSITY

FIRST YEAR B.P.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: PHYSIOLOGY

Tuesday, August 27, 2013

Time: 10.00-13.00 Hrs.

Max. Marks: 80

☞ Answer ALL questions. Draw diagrams and flow charts wherever appropriate.

- 1A. Define a sarcomere. Draw a neat labeled diagram to depict the same.  
 1B. Describe the mechanism of excitation contraction coupling in a skeletal muscle.  
 (1+2+7 = 10 marks)
- 2A. Define the following terms and give their normal values  
 i) Systolic blood pressure  
 ii) Diastolic blood pressure  
 iii) Pulse pressure  
 iv) Mean arterial pressure  
 2B. Explain how the blood pressure is regulated by baroreceptor mechanism.  
 (6+4 = 10 marks)
3. Write short notes on the following:
- 3A. Describe any five actions of thyroid hormones.  
 3B. Explain the mechanism of secretion of HCl.  
 3C. Describe the stages of erythropoiesis.  
 3D. Draw a labeled diagram of the nerve action potential and give its ionic basis.  
 3E. In the form of a flow chart describe the mechanism of hearing.  
 3F. Define GFR. Give the normal value. Write the factors affecting GFR.  
 3G. List the differences between upper and lower motor neuron lesions.  
 3H. Mention the differences between smooth muscle and cardiac muscle.  
 (5×8 = 40 marks)
4. Write brief answers to each of the following:
- 4A. Mention TWO functions of plasma proteins.  
 4B. List the contractile proteins in the skeletal muscle.  
 4C. Mention any TWO functions of placenta.  
 4D. List four features of Parkinson's disease.  
 4E. Mention any TWO factors that increase myocardial contractility.  
 4F. Give the normal serum calcium concentration and name the hormones that regulate its level.  
 4G. Define vital capacity and mention its normal value.  
 4H. Write TWO differences between rods and cones.  
 4I. Define tubular maximum. Give the T<sub>m</sub> for glucose.  
 4J. List TWO functions of liver.  
 (2×10 = 20 marks)



**MANIPAL UNIVERSITY****FIRST YEAR B.P.T. DEGREE EXAMINATION – AUGUST 2013****SUBJECT: BIOCHEMISTRY**

Wednesday, August 28, 2013

Time: 10.00-11.30 Hours

Max. Marks: 40

✍ **Answer ALL questions.**

✍ **Draw diagrams and flow charts wherever appropriate.**

1. Write in detail the reactions of aerobic glycolysis.

(8 marks)

2. Write the reactions of  $\beta$ -oxidation of palmitic acid.

(6 marks)

3. **Write short notes on the following:**

3A. Lactose intolerance.

3B. Effect of substrate concentration on enzyme activity with a graph.

3C. Role of vitamin C and copper in collagen biosynthesis.

3D. THREE similarities and differences each between the types of protein energy malnutrition.

(4×4 = 16 marks)

4. **Answer the following:**

4A. Define the terms replication and translation.

4B. Classify acidosis with ONE example each.

4C. Write the normal serum levels of fasting glucose, total cholesterol, creatinine and urea.

4D. Write ONE reaction each in which coenzyme forms of thiamine and niacin are required.

4E. Explain mutual supplementation of proteins with the help of an example.

(2×5 = 10 marks)



**MANIPAL UNIVERSITY**  
**FIRST YEAR B.P.T. DEGREE EXAMINATION – AUGUST 2013**  
**SUBJECT: EXERCISE THERAPY – I**  
**(NEW REGULATION)**

Thursday, August 29, 2013

Time: 10.00 – 13.00 Hours

Max. Marks: 80

**Answer ALL questions.**

**1. Essay questions:**

1A. What is a reflex arc? Explain the different types of reflexes. Add a note on the importance of reflex testing.

(3+4+3 = 10 marks)

1B. What is the parallelogram of forces? Explain the different types of Levers with two examples in the human body.

(4+6 = 10 marks)

**2. Short Notes:**

2A. Describe the types of breath sounds.

2B. Components in an ideal therapeutic gymnasium.

2C. Explain blood pressure as a vital sign.

2D. Explain the principles of relaxation.

2E. What are the merits and demerits of a home program?

2F. Effects and uses of effleurage soft tissue manipulation.

2G. Principles of Goniometry.

2H. Explain the types of inspiratory breathing exercises.

(5×8 = 40 marks)

**3. Brief answers:**

3A. What is a suspension unit?

3B. Name any two effects and two contraindications of passive movements.

3C. What is apparent limb length discrepancy?

3D. Mention the types of muscle work.

3E. What are springs in series and parallel?

3F. Name the properties of water.

3G. What is local relaxation?

3H. Name the cortical sensations.

3I. What are mass exercises?

3J. Name any four indications for postural drainage.

(2×10 = 20 marks)

