

MANIPAL UNIVERSITY**FIRST YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2015****SUBJECT: ANATOMY
(NR/2011 BATCH)**

Tuesday, June 02, 2015

Time: 10.00-13.00 Hours.

Max. Marks: 80

1. **Describe the elbow joint under the following headings:**
- 1A. Type and articular surfaces
 - 1B. Ligaments and Relations
 - 1C. Movements and muscles producing them
 - 1D. Applied anatomy
- (3+8+5+4 = 20 marks)
2. **Describe the common peroneal nerve and its terminal branches under the following headings:**
- 2A. Origin and root value
 - 2B. Course
 - 2C. Branches and distribution
 - 2D. Applied anatomy
- (3+5+8+4 = 20 marks)
3. **Write briefly on:**
- 3A. Circle of Willis
 - 3B. Gyri on the lateral surface of frontal lobe
 - 3C. Lateral ventricle
 - 3D. Lateral spinothalamic tract
 - 3E. Thalamus
- (5 marks × 5 = 25 marks)
4. **Write short notes on:**
- 4A. Structure of typical synovial joint
 - 4B. Ovary
 - 4C. Coronary sinus
 - 4D. Spermatic cord
 - 4E. Prostate gland
- (3 marks × 5 = 15 marks)



MANIPAL UNIVERSITY
FIRST YEAR B.P.T. DEGREE EXAMINATION – JUNE 2015
SUBJECT: PHYSIOLOGY
(NEW REGULATION)

Thursday, June 04, 2015

Time: 10.00-13.00 Hrs.

Max. Marks: 80

✍ **Answer ALL questions.**

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

1. In the form of a flow chart, write the steps involved in the intrinsic and extrinsic pathways of blood coagulation.
2. Describe any SIX actions of thyroid hormones. In the form of a flow chart describe the regulation of thyroid hormone secretion. Mention TWO clinical features of cretinism.

(10 marks × 2 = 20 marks)

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

- 3A. In the form of a flow chart, describe the events that occur during neuromuscular transmission in skeletal muscle.
- 3B. Name the muscles of inspiration. Describe the mechanism of inspiration.
- 3C. List the movements of small intestine. Describe any ONE.
- 3D. Define a reflex. Draw a labeled diagram of the stretch reflex arc.
- 3E. Draw and label an electrocardiogram from limb lead II. Give the cause for different waves. Give two uses of ECG.
- 3F. Describe the micturition reflex.
- 3G. Describe the various types of passive transport mechanisms in a cell membrane.
- 3H. Define spermatogenesis. Describe the stages of spermatogenesis.

(5 marks × 8 = 40 marks)

4. **Write brief answers to each of the following:**

- 4A. Mention TWO functions of blood.
- 4B. Draw a labeled diagram of a sarcomere in a skeletal muscle.
- 4C. Mention any TWO actions of estrogen.
- 4D. List FOUR clinical features of cerebellar lesion.
- 4E. Define cardiac output and mention its normal value.
- 4F. Mention the normal serum calcium level and name any TWO hormones that regulate its level.
- 4G. Define vital capacity and mention its normal value.
- 4H. Mention TWO functions of middle ear.
- 4I. List TWO functions of kidneys.
- 4J. Mention any TWO functions of gastric juice.

(2 marks × 10 = 20 marks)



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MANIPAL UNIVERSITY

FIRST YEAR BPT/BOT/B.Sc. MLT/B.Sc. NMT/B.Sc. RT/B.Sc. MIT/B.Sc. CVT /
B.Sc. RRT & DT/M.Sc. NMT DEGREE EXAMINATION – JUNE 2015

SUBJECT: BIOCHEMISTRY

Saturday, June 06, 2015

Time: 10.00-11.30 Hours

Max. Marks: 40

- ✍ Answer ALL the questions.
- ✍ Draw diagrams and flow charts wherever appropriate.

1. Explain anaerobic glycolysis and add a note on its energetics. (8 marks)

2. Give a diagrammatic representation of the processes of emulsification and absorption of lipids in the intestine. (6 marks)

3. Write short notes on the following:
 - 3A. Components of electron transport chain and order of their arrangement
 - 3B. Reactions of β -oxidation in mitochondria
 - 3C. Importance of dietary fibers
 - 3D. Secondary structure of proteins(4 marks \times 4 = 16 marks)

4. Answer the following:
 - 4A. List four differences between DNA and RNA.
 - 4B. Write two reactions where the coenzyme form of niacin is required.
 - 4C. List the four key enzymes of gluconeogenesis.
 - 4D. Name one condition in which these biochemical parameters are increased in blood: glucose, uric acid, bilirubin and urea.
 - 4E. Define buffer and write the Henderson- Hasselbalch equation.(2 marks \times 5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR B.P.T. DEGREE EXAMINATION – JUNE 2015****SUBJECT: EXERCISE THERAPY – I
(NEW REGULATION)**

Tuesday, June 09, 2015

Time: 10.00 – 13.00 Hours

Max. Marks: 80

Answer ALL questions.**1. Essay Questions:**

1A. What is a Suspension unit? Explain the types of suspension therapy. Add a note on suspension therapy for hip joint abduction.

(2+4+4 = 10 marks)

1B. Define breathing exercises. Enumerate the indications. Explain the types of inspiratory breathing exercises.

(2+3+5 = 10 marks)

2. Short Notes:

2A. Explain types of reflexes.

2B. Explain the principles of Goniometry.

2C. What are derived positions? Explain any two derived positions from standing.

2D. What is true limb length discrepancy? How is it measured?

2E. Explain the effects and uses of hydrotherapy.

2F. Describe in detail the types of levers. Give an example of each.

2G. Explain the principles of relaxed passive movements.

2H. Describe the technique of postural drainage for the right medial basal segment.

(5 marks × 8 = 40 marks)

3. Brief answers:

3A. Define Angle of pull.

3B. Name the types of resistances used in a therapeutic gymnasium.

3C. What is Bryant's triangle.

3D. Define Inertia.

3E. Name the axes and planes of movement.

3F. What are recreational exercises?

3G. What is local relaxation?

3H. Name the deep sensations.

3I. Name the normal goniometric values of subtalar joint inversion and eversion.

3J. What are pendular movements?

(2 marks × 10 = 20 marks)

