Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2005

SUBJECT: ANATOMY

(COMMON FOR BOTH OLD & NEW REGULATIONS)

Wednesday, June 01, 2005

Time available: 3 Hours. Max. Marks: 80

All questions are compulsory. Illustrate the answers with suitable diagrams.

1. Describe the shoulder joint under the following headings:

1A. Bones taking part.

1B. Capsule and ligaments.

1C. Movements and muscles producing them.

1D. Applied anatomy.

(3+9+5+3 = 20 marks)

2. Describe the Ankle joint under the following headings:

2A. Bones taking part.

2B. Capsule and ligaments.

2C. Movements and muscles producing them.

2D. Applied anatomy.

(3+7+7+3 = 20 marks)

3. Write short notes on:

3A. Midbrain.

3B. Name all the cranial nerves.

3C. Internal capsule.

3D. Arteries supplying the superolateral surface of cerebrum.

3E. Distribution of facial nerve.

(5×5 = 25 marks)

4. Write short notes on:

4A. Fibrous joint.

4B. Thyroid gland.

4C. Deltoid muscle.

4D. Blastocyst.

4E. Stomach.

(3×5 = 15 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2005

SUBJECT: PHYSIOLOGY

(COMMON FOR BOTH OLD & NEW REGULATIONS)

Thursday, June 02, 2005

Time available: 3 Hours. Max. Marks: 80

- **Answer all questions.**
- **Draw labelled diagrams wherever appropriate.**

1. Define cardiac cycle. List the different phases of cardiac cycle. Explain pressure changes in left ventricle during different phases of cardiac cycle with the help of a graph.

(1+4+5=10 marks)

2A. Draw a normal spirogram showing:

i) vital capacity ii) functional residual capacity.

Explain the importance of each one.

2B. Explain the steps involved in neuro-muscular transmission with the help of labeled diagram.

2C. What is oxygen debt? Explain any three causes for it.

2D. Draw a labeled diagram showing innervation of muscle spindles. Explain the sequence of events during stretch of a muscle.

2E. Write a brief note on each of the following:

i) Parkinsonism ii). Hypoxia

((2+2)+4+(1+3)+(2+2)+(2+2) = 20 marks)

3A. Tabulate the agglutinogens and agglutinins present in ABO and Rh systems of blood grouping.

3B. Explain the following terms:

i) Glycosuria ii) Renal threshold for glucose.

3C. State any four functions of middle ear.

3D. Enumerate the functions of saliva.

3E. State the normal body temperature. Mention the role played by skin in maintaining body temperature, when exposed to cold.

(2×5 = 10 marks)

4. Classify receptors. Explain any four properties of receptors.

(4+6 = 10 marks)

5A. Draw a labeled diagram, depicting the conducting system of the heart. Explain pace-maker potentials in the heart.

5B. Draw a normal oxy-haemoglobin dissociation curve and explain its importance. State any two factors that shifts the curve to the right.

5C. Discuss the changes observed in a nerve during

i) Wallerian degeneration ii) Regeneration

5D. Explain any two changes observed in functioning of respiratory system and skeletal muscle during exercise.

5E. Draw a neat labeled diagram showing structure of the eye. Name the receptors involved in vision.

((2+2)+(3+1)+4+4+(3+1) = 20 marks)

6A. Define bleeding time and give its normal value. Name any two anticoagulants and their mode of action.

6B. Explain any two methods of Na^+ transport in the kidney tubules.

6C. List any two types of movements of small intestine and state the function it subserves.

6D. Briefly explain the changes seen in ovary during luteal phase of normal menstrual cycle.

6E. Define BMR and give its normal value. State any one hormone which regulates BMR.

((1+1)+2+2+2+2 = 10 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2005

SUBJECT: BIOCHEMISTRY

(COMMON FOR BOTH OLD & NEW REGULATIONS)

Friday, June 03, 2005

Time available: 3 Hours | Max. Marks: 80

Answer ALL questions.

1. Calculate the energy requirement of a person with sedentary work on a mixed diet with BMR 30 Cal/sqM/Hr and body surface area of $1.7M^2$. Mention the amounts of carbohydrate, protein and fat he has to take to meet his energy requirement.

(3+3 = 6 marks)

2. What is respiratory quotient? Mention its values for carbohydrates, proteins and fats. What is its clinical significance?

(3 marks)

3. Classify carbohydrates giving one example for each class.

(6 marks)

4. Trace how glucose is formed from non-carbohydrate sources. How this is regulated?

(8+2 = 10 marks)

5. Write the reactions of de novo synthesis of palmitic acid from acetyle coA. How this is regulated?

(7+3 = 10 marks)

6. Write the reactions of ketone body formation and it's utilization. Under which conditions they are produced? Add a note on ketoacidosis.

(5+3 = 8 marks)

7. Classify enzymes. Define each class. Give one example for each class.

(6+3 = 9 marks)

8. Discuss iron metabolism under:
   a) RDA
   b) Sources
   c) Absorption, Transport and Storage
   d) Causes of iron deficiency.

(1+1+6+2 = 10 marks)

9. Explain the various parameters used to assess the liver function.

(12 marks)

10. Explain the process of muscle contraction.

(6 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST YEAR B.P.T. DEGREE EXAMINATION – JUNE 2005

SUBJECT: EXERCISE THERAPY – I

(NEW REGULATION)

Monday, June 06, 2005

Time available: 3 Hours | Max. Marks: 80

✍ **Answer ALL the questions.**

Essay Questions:

1. Classify the kneading manipulations. Discuss the physiological and therapeutic effects of kneading manipulations.

(2+4+4 = 10 marks)

2. Discuss therapeutic gymnasium under the following headings:
   a) parallel bars b) flooring c) walking aids
   d) Mariner's wheel e) environment.

(2×5 = 10 marks)

Short notes:

3A. Newton's laws.
3B. Kneeling.
3C. Benefits of passive movements.
3D. Effleurage.
3E. Contraindications in massage.
3F. Group exercises.
3G. Springs and pulleys.
3H. Types of suspension.

(5×8 = 40 marks)

Short answers:

4A. Define progressive resisted exercises.
4B. List any four effects of free exercises.
4C. What is a third order lever?
4D. List the effects of traction during exercises.
4E. Define stable equilibrium.
4F. Define endurance.
4G. List the uses of clapping.
4H. Define mobilization.
4I. Define angle of pull of a muscle.
4J. Define eccentric contraction of a muscle.

(2×10 = 20 marks)