Reg. No.										

MANIPAL UNIVERSITY

M.Sc. (MEDICAL) (PRELIMINARY) DEGREE EXAMINATION – JULY 2013

PAPER I: ANATOMY

Tuesday, July 02, 2013

Time: 14:00 – 17:00 Hrs. Maximum Marks: 80

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

1. Describe the temporomandibular joint under following headings:

1A. Type and articular surfaces

1B. Ligaments

1C. Movements and muscles involved

(2+4+4 = 10 marks)

2. Describe the portal vein under:

2A. Formation

2B. Course

2C. Tributaries

2D. Applied anatomy

(2+3+3+2 = 10 marks)

3. Describe the boundaries and contents of ischiorectal fossa.

(6+4 = 10 marks)

4. Describe the left lung under:

4A. Surfaces and borders

4B. Fissures

4C. Impression on mediastinal surface

(3+2+5 = 10 marks)

5. **Write short notes on:**

5A. Microscopic structure of mixed salivary gland

5B. Collateral anastomosis

5C. Superior sagittal sinus

5D. Ear ossicles

5E. Decidua

5F. Superior venacava

5G. Blood supply of suprarenal gland

5H. Axis vertebra

5I. Internal trigone of urinary bladder

5J. Chromatid

(4 × 10 = 40 marks)

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M.Sc. (MEDICAL) (PRELIMINARY) DEGREE EXAMINATION – JULY 2013

PAPER II: PHYSIOLOGY

Thursday, July 04, 2013

Time: 14:00 – 17:00 Hrs. Maximum Marks: 80

1. Draw a diagram to show the structures involved in the formation of a synapse. Explain how synaptic transmission is brought about. Add a note on properties of synaptic transmission.

(2+3+3 = 8 marks)

2. **Write briefly on:**

2A. Colloidal osmotic pressure and its importance.

2B. Dangers of blood transfusion.

2C. Factors influencing venous return.

2D. Peripheral resistance and its regulation.

(4×4 = 16 marks)

3. **Write briefly on:**

3A. Explain the mechanism of 'chloride shift' and the associated changes.

3B. Chemoreceptors in the regulation of respiration.

3C. Factors influencing GFR.

3D. Mechanism of micturition in a child.

(4×4 = 16 marks)

4. Discuss in detail the actions of parathormone. Add a note on regulation of secretion of this hormone.

(6+2 = 8 marks)

5. **Write briefly on:**

5A. The functions of the gall bladder. Add a note on CCK PZ.

(2+2 = 4 marks)

5B. Movements of the small intestine and the purpose served by these movements.

(2+2 = 4 marks)

5C. Functions of aqueous humour.

(4 marks)

5D. "Place theory" of hearing.

(4 marks)

6. **Write briefly on:**

6A. Tests to detect the day of ovulation and the significance of this test.

(4 marks)

6B. Effect of vasectomy and the changes that follow.

(4 marks)

6C. Mechanism of excitation contraction coupling.

(4 marks)

6D. With examples explain negative and positive feedback mechanism in the regulation of secretion of hormones.

(2+2 = 4 marks)

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M.Sc. (MEDICAL) (PRELIMINARY) DEGREE EXAMINATION – JULY 2013

PAPER III: BIOCHEMISTRY

Saturday, July 06, 2013

Time: 14:00 – 17:00 Hrs. Maximum Marks: 80

✍ **Illustrate your answers with neatly drawn and correctly labeled diagrams wherever appropriate.**

1. Describe the formation, biochemical functions and deficiency manifestation of Vit D.

(2+5+3 = 10 marks)

2. Describe the glycogen metabolism. Add a note on its regulation.

(7+3 = 10 marks)

3. Explain the process of translation with post translational modification. Add a note on inhibitors of translation.

(6+2+2 = 10 marks)

4. **Short notes:**

4A. Define isoenzymes and discuss their role in clinical diagnosis.

4B. Explain the process of digestion and absorption of triacyglycerol in the intestine.

4C. Describe how tyrosine is formed? Explain the synthesis of any two specialised products from tyrosine.

4D. Define and classify jaundice. Describe the biochemical investigations to differentiate different types of jaundice.

(5×4 = 20 marks)

5. **Short answer questions:**

5A. Cori cycle

5B. Enterohepatic circulation of bile slats

5C. Write the defective enzyme and their respective reactions for following conditions:

i) Von- Gierke's disease

ii) Lesch- Nyhan syndrome

iii) Alkaptonuria

5D. Write the principle and applications of polymerase chain reaction.

5E. What are uncouplers? Give any three examples.

5F. Give the clinical significance and normal values for following biochemical parameters:

i) Alanine transaminase

ii) Serum creatinine

iii) Serum bicarbonate

5G. Explain the active transport with suitable examples.

5H. Name any three iron containing proteins with their function.

5I. What is fatty liver? Write the causes for it.

5J. Write briefly about protein calorie malnutrition.

(3×10 = 30 marks)