

MANIPAL UNIVERSITY

M.Sc. (PRELIMINARY) DEGREE EXAMINATION – SEPTEMBER 2011

PAPER I: ANATOMY

Monday, September 05, 2011

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 80

✍ Answer ALL the questions. Draw diagrams wherever necessary.

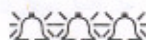
1. Describe the blood supply and nerve supply of the face.
(6+4 = 10 marks)

2. Describe the larynx under:
 - 2A. Interior
 - 2B. Blood supply
 - 2C. Nerve supply(5+2+3 = 10 marks)

3. Describe the caecum under:
 - 3A. Position and types
 - 3B. Interior
 - 3C. Relations
 - 3D. Blood supply(2+2+4+2 = 10 marks)

4. Describe the right lung under:
 - 4A. Surfaces and borders
 - 4B. Fissures
 - 4C. Mediastinal surface(3+2+5 = 10 marks)

5. Write short notes on:
 - 5A. Bare area of liver
 - 5B. Centre of ossification
 - 5C. Microscopic structure of elastic cartilage
 - 5D. Notochord
 - 5E. Thoracic duct
 - 5F. Prostatic part of urethra
 - 5G. Interatrial septum
 - 5H. Vas deferens
 - 5I. Klinefelter's syndrome
 - 5J. Tentorium cerebelli(4×10 = 40 marks)



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PAPER II: PHYSIOLOGY

Wednesday, September 07, 2011

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 80

☞ Answer ALL the questions.

1. Name the sensations carried by dorsal column tracts. Draw a diagram to trace the pathway for fine touch. Explain dissociated anaesthesia. (8 marks)

2. Define arterial blood pressure. Give the normal values for blood pressure in a young adult male. Describe the role of baroreceptors in regulating blood pressure. (8 marks)

- 3A. What is anaemia? Classify anaemia's and give a cause for each.
- 3B. Draw a normal ECG from limb lead II. Give the basis of the P wave. Name two conditions where this wave is altered.
- 3C. Describe the different phases of deglutition.
- 3D. Describe:
 - i) cystometrogram
 - ii) Micturition reflex(4×4 = 16 marks)

- 4A. Explain basis of colour vision. Give an account of colour blindness.
- 4B. Draw a diagram of strength duration curve. Define chronaxie. Give the significance of chronaxie.
- 4C. Outline the formation, circulation and functions of CSF.
- 4D. Explain the features and basis of:
 - i) Gigantism
 - ii) Acromegaly(4×4 = 16 marks)

- 5A. Name four GI hormones and describe the actions of any two hormones.
- 5B. Describe the tubular reabsorption of glucose.
- 5C. What is pulmonary surfactant? Explain its role.
- 5D. What is erythroblastosis foetalis? Give its basis and principle of treatment. (4×4 = 16 marks)

- 6A. Enumerate four clinical features of Parkinson's disease. Explain one feature.
- 6B. Name four hyperglycemic hormones. Explain the hyperglycemic actions of any one of them.
- 6C. Describe the physiological actions and control of secretion of testosterone in an adult.
- 6D. Give a brief account of chemical regulation of respiration. (4×4 = 16 marks)



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PAPER III: BIOCHEMISTRY

Friday, September 09, 2011

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 80

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

1A. Enumerate the steps of β -oxidation of Palmitic acid. Add a note on its energetics.

1B. Define saponification number and write the importance of saponification number.

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

2A. Describe the replication of DNA in prokaryotes.

2B. Explain the regulation of gene expression with *lac operon* model.

(6+4 = 10 marks)

3A. Explain the catabolism of amino acids under following: transamination, deamination, transport of ammonia and urea cycle

3B. Describe the catabolism of heme.

((1+1+1+4)+3 = 10 marks)

4. Write short notes on:

4A. Kwashiorkar and Marasmus.

4B. Normal serum calcium level and its regulation by various hormones.

4C. Chemistry, sources, daily requirements and functions of Vitamin C.

4D. Normal blood glucose level and its hormonal regulation.

(5×4 = 20 marks)

5. Write short notes on:

5A. Secondary structure of proteins.

5B. Structure and functions of immunoglobulin.

5C. Lactose intolerance.

5D. Rapoport-Luebering cycle and its importance.

5E. Competitive type of enzyme inhibition.

5F. Isoenzymes and their significance.

5G. High energy compounds.

5H. Detoxification by conjugation mechanisms.

5I. Oxygen toxicity and antioxidant defence.

5J. Regulation of glycogen metabolism.

(3×10 = 30 marks)

