

Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – AUGUST/SEPTEMBER 2005

SUBJECT: GENERAL ANATOMY AND OCULAR ANATOMY

Monday, August 29, 2005

Time: 1½ Hrs.

Max. Marks: 40

Answer all questions

1. Describe oculomotor nerve under origin, course and distribution.

(2+2+6 = 10 marks)

2. Write short notes on:

2A. Right lung.

2B. Oblique muscles of the eye ball.

2C. Neuron.

2D. Pancreas.

2E. Supra renal gland.

2F. Ovary.

(5×6 = 30 marks)



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FIRST YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION –AUGUST/SEPTEMBER 2005

SUBJECT: GENERAL PHYSIOLOGY AND OCULAR PHYSIOLOGY

Tuesday, August 30, 2005

Time: 1½ Hrs.

Max. Marks: 40

☞ Answer all questions.

- 1A. Draw a diagram to show the visual pathway. With the help of diagram explain the type of visual defects that would occur due to lesions at various levels in this pathway.
- 1B. With the help of diagram describe the structure of eye.
- 1C. Name the receptors for vision. Name any two errors of refraction in the eye and give cause and correction for each.
- (5×3 = 15 marks)
- 2A. Define bleeding time. Give the normal value. List two conditions which lead to prolongation of bleeding time.
- (3 marks)
- 2B. Define blood pressure. Give normal value of it. Name two factors maintaining blood pressure.
- (3 marks)
- 2C. Define and give normal values for
- i) Tidal volume ii) Vital Capacity iii) Residual volume
- (3 marks)
- 2D. List three functions of stomach.
- (3 marks)
- 2E. Name four hyperglycaemic hormones. Name the condition that results due to insulin deficiency.
- (2+1 = 3 marks)
- 2F. Define GFR. Give its normal value. Normally how much of urine is formed per day.
- (1+1+1 = 3 marks)
- 2G. List three functions of cerebellum.
- (3 marks)
- 3A. Explain adaptation of sensory receptors.
- (2 marks)
- 3B. Define ovulation. Name two tests for ovulation.
- (1+1 = 2 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – AUGUST 2005

SUBJECT: GENERAL BIOCHEMISTRY AND OCULAR BIOCHEMISTRY

Wednesday, August 31, 2005

Time: 3 Hrs.

Max. Marks: 80

- ANSWER SECTION 'A' AND SECTION 'B' IN TWO SEPARATE ANSWER BOOKS.
 Draw diagrams wherever necessary

SECTION – A: GENERAL BIOCHEMISTRY: 40 MARKS

1. Choose the **SINGLE BEST** response to each of the following:
 - 1A. Which of the following is NOT a deficiency of vitamin A?
 - a) Bitot's spots b) Night blindness c) Osteomalacia d) Keratomalacia
 - 1B. The glycosidic bond present in cellulose is
 - a) β 1-4 b) α 1-4 c) α 1-6 d) β 1-2
 - 1C. In RBC, 2, 3 bisphosphoglycerate is derived from which intermediate of the glycolytic pathway
 - a) Glyceraldehyde 3-phosphate b) 2-phosphoglycerate c) 3-phosphoglycerate
 - d) 1,3 bis phosphoglycerate
 - 1D. The conversion of fumarate to malate is an example for
 - a) Lyase b) Hydrolase c) Ligase
 - d) Oxidoreductase

(1×4 = 4 marks)
2. State whether the following statements are **TRUE/FALSE**
 - 2A. Under anaerobic conditions, NADH formed in glycolysis is used for lactate formation.
 - 2B. Deficiency of iodine causes hyperthyroidism.
 - 2C. All the enzymes of the urea cycle are present in the mitochondria.
 - 2D. α -helix of proteins is stabilized by H_2 bonds.

(1×4 = 4 marks)
3. Fill in the blanks
 - 3A. ___ is the power house of the cell.
 - 3B. At an isoelectric pH, the net charge on a protein is ___.

(1×2 = 2 marks)
4. Answer any **SIX** of the following:
 - 4A. Write short note on hormonal regulation of blood glucose.

(3 marks)
 - 4B. Name the vitamin/mineral causing the following disorder.
 - i) Tetany ii) Pellagra iii) Scurvy

(3 marks)
 - 4C. Name any two renal function tests. Mention any one chemical condition in which these tests are done.

(2+1 = 3 marks)

- 4D. Write short note on jaundice. (3 marks)
- 4E. Name three specialized products of tyrosine. (3 marks)
- 4F. What is competitive inhibition? Give 2 examples to indicate its importance in clinical medicine. (3 marks)
- 4G. Write any two functions for each of the following:
i) Vitamin A ii) Vitamin C iii) Iron (3 marks)
5. Answer any **TWO** of the following:
- 5A. Discuss the following aspects of β -oxidation of palmitic acid.
i) Activation ii) Reactions iii) Energetics (1+3+2 = 6 marks)
- 5B. Write the site and the reactions involved in the detoxification of ammonia in the body. (1+5 = 6 marks)
- 5C. Describe the metabolism of calcium under the following headings:
i) Normal serum level ii) Homeostasis iii) Any four functions. (1+3+2 = 6 marks)

SECTION – B : OCULAR BIOCHEMISTRY: 40 MARKS

6. Discuss the biochemical composition of vitreous and aging changes in vitreous. (10 marks)
7. Answer any **SIX** of the following:
- 7A. Eicosanoids.
- 7B. Blood aqueous Barrier.
- 7C. Transport function in lens.
- 7D. Visual pigments.
- 7E. G.A.B.A.
- 7F. Secretory IgA.
- 7G. Biochemical mechanism of corneal endothelial pump. (5×6 = 30 marks)

