

MANIPAL ACADEMY OF HIGHER EDUCATION
(Deemed University)

MSc (PRELIMINARY) DEGREE EXAMINATION

PAPER I : ANATOMY

Monday, 09 July 2001

Time available: 3 Hours

Maximum Marks: 100

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- ➔ Answer all the questions.
➔ Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.
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1. Describe the formation and contents of rectus sheath. Add a note on its applied aspects. (15 Marks)
2. Describe the arterial supply and venous drainage of the heart. Give its applied importance. (15 Marks)
3. Write short notes on each of the following: (4 x 5 = 20 Marks)
 - 3A. Morula
 - 3B. Broad ligament of uterus
 - 3C. Columnar epithelium
 - 3D. Pleural recesses
4. Describe the boundaries of posterior triangle, enumerate contents. Add a note on sternocleidomastoid muscle. (15 Marks)
5. Describe the anatomy of the tongue and add a note on its development. (15 Marks)
6. Write short notes on each of the following: (4 x 5 = 20 Marks)
 - 6A. Microscopic structure of esophagus
 - 6B. Yolk sac
 - 6C. Mesentery of small intestine
 - 6D. Lymphatic drainage of stomach

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MSc (PRELIMINARY) DEGREE EXAMINATION

PAPER III : BIOCHEMISTRY

Wednesday, 11 July 2001

Time available: 3 Hours

Maximum Marks: 100

♠ **Answer all the questions.**

♠ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**

1A. Describe the *de novo* synthesis of fatty acids. (10 Marks)

1B. What is the normal serum cholesterol level? Name **four** functions of cholesterol. (5 Marks)

2. Write short notes on: (7 x 5 = 35 Marks)

2A. Recombinant DNA technology

2B. Formation of uric acid

2C. Niacin

2D. Basal metabolic rate (BMR)

2E. Galactosemia

2F. Transamination reaction

2G. Secondary structure of proteins

3. Describe the metabolism of sulfur containing amino acids. Add a note on disorders associated with them. (15 Marks)

4. Write notes on: (7 x 5 = 35 Marks)

4A. Role of vitamin A in vision

4B. Collagen structure

4C. Competitive inhibition of enzymes

4D. Role of RNA in translation

4E. Digestion of disaccharides in intestine

4F. Enzymes useful in liver diseases

4G. Classification of carbohydrates with one example for each

MANIPAL ACADEMY OF HIGHER EDUCATION
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MSc (PRELIMINARY) DEGREE EXAMINATION – DECEMBER 2001

PAPER I : ANATOMY

Monday, December 03, 2001

Time available: 3 Hours

Maximum Marks: 100

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- ➔ **Answer all the questions.**
➔ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**
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1. Describe the extrahepatic biliary apparatus. Add a note on development of Gall Bladder.
(15 Marks)

2. Describe the arch of aorta. Add a note on its microscopic structure.
(15 Marks)

3. Write short notes on each of the following:
(4 x 5 = 20 Marks)
 - 3A. Metaphysis
 - 3B. Blastocyst
 - 3C. Isthmus of thyroid gland.
 - 3D. Caecum

4. Describe the lateral wall of nasal cavity. Add a note on its blood supply.
(15 Marks)

5. Describe the anatomy of the urinary bladder. Add a note on its microscopic structure.
(15 Marks)

6. Write short notes on each of the following:
(4 x 5 = 20 Marks)
 - 6A. Elastic Cartilage.
 - 6B. Notochord.
 - 6C. Nerve supply of scalp
 - 6D. Microscopic structure of serous salivary gland



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MSc (PRELIMINARY) DEGREE EXAMINATION – DECEMBER 2001

PAPER II : PHYSIOLOGY

Tuesday, December 04, 2001

Time available: 3 Hours

Maximum Marks: 100

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- ♣ **Answer all the questions.**
♣ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**
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1. Describe the mechanism of 'Synaptic transmission' in Central Nerve System. Highlight the salient features of synaptic transmission.

(20 marks)

2A. Define stretch reflex. Explain with the help of a diagram.

2B. Explain the role of iris diaphragm in vision.

2C. Draw a labelled diagram of a Sarcomere at 'Rest' and during 'Contraction'.

2D. Mention the role of i) Neutrophil ii) Lymphocyte in immunity

2E. Classify anti coagulants. Explain their mechanisms of action with an example each.

2F. State 'Poiseuille's law'. Mention the various factors which influence blood flow to an organ in the light of this law.

(5x6 = 30 marks)

3. Enumerate hormones of Adrenal cortex. Discuss in detail the physiological action of cortisol.

(20 marks)

4A. Briefly outline hormonal control of blood calcium.

4B. Explain the physiological significance of shape of oxyhaemoglobin- dissociation curve.

4C. Define peristalsis. Explain the characteristics and functions of different movements observed in small intestine.

4D. Briefly describe a micturition reflex with the help of a diagram.

4E. Explain the changes in the endometrium during the proliferative phase of menstrual cycle. Name the hormone responsible for it.

4F. Explain the physiological changes that help to maintain body temperature when exposed to an ambient temperature of 30°C.

(5x6 = 30 marks)



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MSc (PRELIMINARY) DEGREE EXAMINATION – DECEMBER 2001

PAPER III : BIOCHEMISTRY

Wednesday, December 05, 2001

Time available: 3 Hours

Maximum Marks: 100

♠ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**

1. Give an account of the hepatic glycogenesis and glycogenolysis. What are the effects of insulin and glucagon in these processes.

(15 marks)

2. Write briefly on following:

2A. Structure of DNA

2B. Plasma lipoproteins

2C. Point mutation

2D. Iso enzymes

2E. Structure of plasma membranes

2F. Base pairing in nucleic acids

2G. High energy compounds

(7 x 5 = 35 Marks)

3. What is the normal pH of blood? Discuss various mechanisms by which body pH is maintained.

(15 Marks)

4A. Name the plasma proteins and enumerate their functions.

4B. What are the functions of normal gastric juice constituents?

4C. Write the formation of messenger RNA and its functions.

4D. Give an account of various forces which stabilize the protein structure.

4E. Write the reaction of urea cycle.

4F. What is BMR? Give the normal value and factors influencing the BMR.

4G. Enumerate the kidney function tests and explain any one of them.

(7 x 5 = 35 Marks)