

MSc (PRELIMINARY) DEGREE EXAMINATION

PAPER I : *ANATOMY*

Monday, 27 November 2000

Time available : 3 hours

Maximum marks : 100

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

1. Mention the differences between the large and small intestines. Give a brief account of superior mesenteric artery. (15 marks)
2. Describe the bronchopulmonary segments. Add a note on their applied aspects. (15 marks)
3. Write short notes on each of the following : (4x5=20 marks)
 - 3A. Chorion
 - 3B. Microscopic structure of large artery
 - 3C. Blood supply of bone
 - 3D. Mastoid process
4. Name the dural venous sinuses. Describe the cavernous sinus. (15 marks)
5. Describe the muscles of mastication. Add a note on their embryological origin. (15 marks)
6. Write short notes on each of the following : (4x5=20 marks)
 - 6A. Age changes in prostate
 - 6B. Microscopic structure of appendix
 - 6C. Bile duct
 - 6D. Sarcomere

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PAPER II : *PHYSIOLOGY*

Tuesday, 28 November 2000

Time available : 3 hours

Maximum marks : 100

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

1. Describe the origin course and termination of the corticospinal pathway, with the help of a diagram. Mention three characteristic features of upper motor neuron lesion. (7+3=10 marks)
2. Write short answers to each of the following :
 - 2A. Name any four functions of hypothalamus. Explain any two of these functions. (2+3=5 marks)
 - 2B. Draw and label an action potential of a nerve fibre. List the influence of any four factors affecting conduction velocity of a nerve fibre. (3+2=5 marks)
 - 2C. Define Marey's reflex. Explain the effects of stimulation of vasomotor centre and cardio-inhibitory centre. (1+3+1=5 marks)
 - 2D. In a tabular column list the agglutinogens and agglutinins present in ABO and Rh system of blood groups. Mention any two hazards of blood transfusion. (2+1+2=5 marks)
 - 2E. Classify the WBCs. Mention the function of WBCs and explain any one them in detail. (1+2+2=5 marks)
 - 2F. Mention four properties of cardiac muscle. Explain briefly any two of them. (2+3=5 marks)
 - 2G. Draw and label a diagram of normal ECG in lead II. Mention the causation of each wave and P-R interval. (3+2=5 marks)
 - 2H. Mention the primary taste sensations. Draw and label a diagram of taste pathway. (1+4=5 marks)
3. Describe the actions and control of growth hormone secretion. Mention two abnormalities due to hypersecretion of growth hormone. (5+4+1=10 marks)
- 4A. Describe four actions of glucocorticoids. What is Addison's disease ? (4+1=5 marks)
- 4B. Mention the stages involved in spermatogenesis. Describe briefly the actions of testosterone. (1½+3½=5 marks)
- 4C. Name the phases of deglutition. Describe the second phase of it. (1+4=5 marks)
- 4D. Enumerate the functions of the stomach. Mention two factors affecting gastric emptying. (4+1=5 marks)
- 4E. Name the muscles of quiet respiration. Briefly describe the mechanism of inspiration and expiration. (1+4=5 marks)
- 4F. Draw and label normal spirogram. Define vital capacity and maximum voluntary ventilation. (3+2=5 marks)
- 4G. Describe the mechanism of reabsorption of Na⁺ and glucose in the proximal convoluted tubule. Explain the terms obligatory and facultatory water reabsorption. (3+2=5 marks)
- 4H. Describe the micturition reflex. (5 marks)

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PAPER III : *BIOCHEMISTRY*

Wednesday, 29 November 2000

Time available : 3 hours

Maximum marks : 100

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

- 1A. Describe glycogenesis and glycogenolysis in liver.
1B. Describe any two glycogen storage disorders. (10+5 = 15 marks)
- 2A. Classify lipids with an example for each
2B. Low density lipoproteins
2C. Enzymes in diagnosis of myocardial infarction
2D. Significance of HMP shunt
2E. Specialized products from glycine
2F. Describe the biochemical role of pyridoxine
2G. Sequence of components in the electron transport chain (7x5 = 35 marks)
- 3A. Describe the catabolism of phenylalanine and tyrosine. Add a note on disorders associated with them.
3B. Describe the specialized products synthesized from tyrosine. (9+6 = 15 marks)
4. Write short notes on : (5x7 = 35 marks)
- 4A. Proteolytic enzymes of the gastrointestinal tract
4B. Synthesis and activation of Vitamin D
4C. Post-translational modifications
4D. Genetic code
4E. Biochemical findings in obstructive jaundice
4F. Dietary fibre
4G. Regulation of serum calcium level