

**2011**  
**MEDICAL SCIENCE (Optional)**  
**Paper : I**

**53003!****Standard : Degree****Total Marks : 200****Nature : Conventional (Essay) type****Duration : Three Hours****N.B. :**

- 1) *Answers must be written in **English** only.*
- 2) *Question No. 1 is **compulsory**. Of the remaining questions, attempt **any Four** selecting one question from **each Section**.*
- 3) *Figures to the **RIGHT** indicate marks of the respective question.*
- 4) *Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.*
- 5) *Credit will be given for orderly, concise and effective writing.*
- 6) *Candidates should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.*

**Marks****1. Answer any four of the following (ten marks each) :**

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|--|----|
| (a) Describe intrinsic muscles of larynx.  | 10 |
| (b) Define cardiac cycle. Describe cardiac cycle.  | 10 |
| (c) Define Atherosclerosis. Enumerate major and minor risk factors. What are clinical effects of Atherosclerosis ?                   | 10 |
| (d) Define sterilization. Enumerate the physical methods of sterilization. Mention working principle and use of autoclave.           | 10 |
| (e) Mention four major routes of drug administration. Enumerate advantages and disadvantages of intravenous route of administration. | 10 |

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**!80032****SECTION – A**

2. Answer the following sub-questions :

- (a) Describe arches of foot. 10
- (b) Describe Ulnar Nerve. 10
- (c) Describe right atrium of heart and add a note on its development. 10
- (d) Describe Karyotyping. 10

3. Answer the following sub-questions :

- (a) Describe Pelvic Diaphragm and note on its applied anatomy. 10
- (b) Describe mammary gland and add a note on its applied aspects. 10
- (c) Describe the development of placenta and add a note on its applied aspects. 10
- (d) Describe the histological layers of skin and add a note on its applied anatomy. 10

**SECTION – B**

4. Answer the following sub-questions :

- (a) What are thyroid hormones ? What are actions of thyroid hormones ? Add a note on secretion of thyroid hormones. 10
- (b) Give an account of formation of urine in human beings. 10
- (c) Describe glycolysis along with its energetics in aerobic and anaerobic condition. 10
- (d) Describe mechanism of action of protein hormones. 10

5. Answer the following sub-questions :

- |  |    |
|--|----|
| (a) Describe the structure of pancreas. Give the composition and functions of pancreatic juice.                | 10 |
| (b) What is hemoglobin ? Give its normal values, functions, synthesis and catabolism.                          | 10 |
| (c) What are enzymes ? Give classification of enzymes along with example of each class.                        | 10 |
| (d) What is Polymerase Chain Reaction (PCR) ? Describe applications of PCR for diagnosis of genetic disorders. | 10 |

### SECTION – C

6. Answer the following sub-questions :

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|---|----|
| (a) Discuss etiology and clinical features of Megaloblastic anaemia.                                | 10 |
| (b) Discuss etiology, gross and microscopic features of carcinoma cervix.                           | 10 |
| (c) Mention laboratory diagnosis of Pulmonary tuberculosis.   | 10 |
| (d) Enumerate intestinal protozoa causing infection in human. Mention lab. diagnosis of amoebiasis. | 10 |

7. Answer the following sub-questions :

- |   |    |
|---|----|
| (a) Tabulate differences between Benign and Malignant Tumours. Enumerate precancerous lesions.  | 10 |
| (b) Classify Diabetes Mellitus. Enumerate complications of Diabetes Mellitus.   | 10 |
| (c) What is hypersensitivity ? Classify hypersensitivity reaction. Describe anaphylaxis.  | 10 |
| (d) Enumerate hepatitis viruses. Mention modes of transmission of hepatitis B Virus infection. Mention lab. diagnosis of hepatitis B virus infection. | 10 |

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## SECTION – D

8. Answer the following sub-questions :

- (a) Give therapeutic rationale for the use of following :
- (i) Enalapril in congestive heart failure. 5
  - (ii) Atorvastatin and Ezetimibe combination in hyperlipidemia. 5
- (b) (i) Classify insulin preparations. Describe treatment of diabetic ketoacidosis. 5
- (ii) Describe uses and adverse effects of cephalosporins. 5
- (c) Define and classify injuries. Describe the injuries caused by 'Hard and Blunt' object; its examination, documentation and medicolegal importance. 10
- (d) What is the procedure of examination, diagnosis and certification of a patient suffering from mental illness ? Enumerate civil and criminal responsibility of mentally ill patient. 10

9. (a) (i) Describe half life of a drug. Describe various factors affecting half life. 5
- (ii) Mention various atropine substitutes. Describe their uses. 5
- (b) (i) What is meant by DOTS ? Mention its advantages and disadvantages. 5
- (ii) Enumerate various drugs used as pre-anesthetic medication. Describe rationale for their use. 5
- (c) Define 'Death' and 'Post Mortem Interval'. How will you estimate 'Post Mortem Interval' ? 10
- (d) Classify Poisons. What are the qualities of ideal homicidal and suicidal poisons ? Describe in detail the procedure of preservation of viscera in poisoning cases. 10