

MEDICAL SCIENCE
(Paper I)

Time Allowed : Three Hours

Maximum Marks : 300

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

The number of marks carried by a question/part is indicated against it.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

SECTION 'A'

1. Answer any three of the following in not more than 200 words each:
- (a) Describe the gross and microscopic anatomy of lung. Add a note on developmental anomalies of lung. 20
 - (b) Describe the structure and functions of ovary. 20
 - (c) Describe the role of hypothalamus in the control of secretion of pituitary hormones. How is body temperature regulated by the hypothalamus? 20
 - (d) What is Michaelis constant? How is the difference in this constant between hexokinase and glucokinase important in the utilization and regulation of blood glucose levels? What would have been the consequences if normal distribution of hexokinase and glucokinase in liver and muscles were reversed? 20
2. (a) Describe pelvic diaphragm. Add a note on supports of uterus. 20
- (b) Describe optic pathways and write a note on development of eyeball. 20
- (c) Write a short note on genotype and phenotype of Turner's syndrome. 20
3. (a) Compare with the help of a diagram the length-tension relationship for skeletal, cardiac and smooth muscles. What is the latch phenomenon in smooth muscle? 20
- (b) Describe the reflex arcs of stretch and inverse stretch reflexes. What are the differences in the properties of monosynaptic and polysynaptic reflexes? 20
- (c) How are platelets formed? Describe the properties and functions of platelets. 20
4. (a) Write a transamination reaction. How is this reaction important in amino acid metabolism? Which vitamin is required in this reaction? 20
- (b) Give a flow chart to depict synthesis of mRNA in eucaryote. State the post-transcriptional modifications. 30
- (c) With the help of a diagram depict the metabolic interlinks between chylomicron, VLDL and LDL. 20

SECTION 'B'

5. Answer any three of the following in not more than 200 words each:
- (a) Write differences between benign and malignant tumours and describe the pathways of spread of cancer. 20

	(b)	Discuss briefly basic procedure and clinical applications of polymerase chain reaction.	20
	(c)	Describe drug receptor interaction and uses of partial agonists in therapeutics.	20
	(d)	What is the medico-legal importance of “Diatom”?	20
6.	(a)	Discuss etiopathogenesis and pathology of peptic ulcer.	20
	(b)	Discuss pathogenicity and laboratory diagnosis of Herpes simplex virus infection.	20
	(c)	Write briefly about the following: (i) Tuberculous meningitis (ii) Candidiasis	20
7.	(a)	Describe indications, contraindications and adverse effects of ACE inhibitions.	20
	(b)	Write indications, contraindications and adverse effects of metronidazole.	20
	(c)	Give mechanism of action, therapeutic uses of chloroquine.	20
8.	(a)	Classify various types of injuries. How will you estimate age of “Bruise”?	20
	(b)	Enumerate insecticides used in agriculture. Describe toxic effects of organophosphorus poison in human beings.	20
	(c)	Write a note on Exhumation.	20