

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. Attempt any three of the following:

3×20=60

- (a) Describe the development of FACE with the help of a diagram. Mention the anomalies associated with it.
- (b) Describe the gross anatomy of caecum and vermiform appendix. Add a brief note on its applied anatomy.
- (c) List the features of cerebellar lesions and their physiological basis.
- (d) The protein molecular ultimately needed by a cell often differs from the polypeptide chain synthesised. How is the chain modified to impart biological activity? Describe with suitable examples.

2. (a) Give an account of blood supply of heart. Add a brief note on its applied anatomy. **20**

(b) What is accommodation of eye? How is the eye accommodated for near vision? Why does a person start having difficulty in reading after the age of 40 years though the visual acuity is 6/6? **20**

(c) Describe the lymphatic drainage of Mammary Gland (Breast). Give an account of its applied anatomy. **20**

3. (a) Name the hormones of posterior pituitary and their function. What will happen in the deficiency of them? **20**

(b) Describe normal menstruation. Why is it absent during the first few months of lactation? **20**

(c) What will be the consequences if a Rh -ve mother carries a Rh +ve fetus and how can they be prevented? **20**

4. (a) Enumerate with suitable examples vitamin coenzymes involved in oxidation-reduction reactions. Describe at least three vitamins. **20**

(b) Define sinus arrhythmia. How is it produced and what is its clinical significance? **20**

(c) Non-essential amino acid tyrosine is formed from phenylalanine. How does the conversion take place and how is tyrosine utilised for the formation of hormones? **30**

SECTION 'B'

5. Answer any three of the following:

3×20=60

- (a) What is carcinogenesis? Classify carcinogens. Write in short about important carcinogens.
- (b) Name various methods of acquisition of new genes in bacteria. Discuss in detail mechanism of drug resistance in bacteria.
- (c) Describe drug-receptor interactions. Discuss G-protein coupled receptor mediated actions of drugs with suitable examples.
- (d) How will you determine the range of a firearm in case of fire from a shotgun?
6. (a) Describe aetiopathogenesis of glomerulonephritis in brief. Describe different types of glomerulonephritis in short. **20**
- (b) Discuss virus-host cell interactions and immunity in infection caused by viruses. **20**
- (c) Name various parasites causing anaemia. Discuss morphology, life cycle, pathogenicity and laboratory diagnosis of *Ancylostoma duodenale*. **20**
7. (a) Give examples of non-steroidal anti-inflammatory agents. Mention the advantages and adverse effects of selective COX-2 inhibitors as anti-inflammatory agents. **20**
- (b) Discuss the therapeutic applications of immunosuppressive therapy. Compare the actions of cyclosporine with glucocorticoids as immunosuppressive drug. **20**
- (c) Discuss the mechanism of action and therapeutic uses of calcium channel blockers. Mention the advantages of dihydropyridines in the treatment of angina pectoris. **20**
8. (a) How do you determine the extent of burn? What is the difference between ante-mortem and postmortem burns? **20**
- (b) How can you differentiate between hanging and strangulation? Discuss in detail. **20**
- (c) Discuss in detail various examinations done in the laboratory to identify a blood stain. **20**