

MEDICAL SCIENCE
(Paper I)

Time Allowed : Three Hours

Maximum Marks : 250

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.

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

SECTION 'A'

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| 1. | (a) | Describe the shoulder joint under the following headings:– (i) Type (ii) Movements (iii) Muscles (iv) Applied anatomy. | 10 |
| | (b) | Describe the thyroid gland under the following headings:– (i) Lobes (ii) Relations (iii) Surgical anatomy. | 10 |
| | (c) | Define synapse, enumerate the steps of synaptic transmission. What is the significance of synaptic delay? | 10 |
| | (d) | What is the mechanism of accommodation in eye? Why near point recedes in old age? | 10 |
| | (e) | Avidin an egg protein has great affinity to a vitamin. Discuss the biochemical role of that vitamin. | 10 |
| 2. | (a) | Describe the morphological features of kidney. Add a note on relations of right kidney. | 10 |
| | (b) | Describe the steps in development of uterus. Name any four congenital malformations of uterus. | 10 |
| | (c) | Define a dermatome. Illustrate by means of labelled diagram(s) dermatomes of lower limb. | 10 |
| | (d) | Name the functions of placenta. List any four malformations of placenta. | 10 |
| | (e) | Describe the structures forming floor of fourth ventricle of brain. | 10 |
| 3. | (a) | Enumerate the factors required for normal erythropoiesis. Why polycythaemia occurs at high altitude? | 15 |
| | (b) | Describe the role of baroreceptors in regulation of B.P. Why this is effective only in short term regulation of blood pressure (B.P.)? | 15 |
| | (c) | Discuss the physiological basis of signs and symptoms seen in insulin deficiency, explain the saying starvation in the midst of plenty. | 20 |
| 4. | (a) | Name the folate antagonists used in treatment of bacterial infections and malignancy. Discuss their mechanism of action also. | 20 |
| | (b) | Which mineral irreversibly inhibits glycolysis? Discuss clinical manifestations due to its deficiency and toxicity. | 20 |
| | (c) | Write in brief:– (i) Reverse transcriptase–P.C.R. (ii) Significance of S. enzymes in liver diseases. | 10 |

SECTION 'B'

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|----|----------|--|-----|
| 5. | (a) | Discuss differentiating features of primary and metastatic malignancies. | 10 |
| | (b) | Briefly describe various cells of immune system. Discuss classification systems to differentiate lymphocytes. | 10 |
| | (c) | Explain why:– | |
| | | 2½×4=10 | |
| | (c)(i) | Aspirin should not be administered around the full-term pregnancy period. | 2.5 |
| | (c)(ii) | Thiazide diuretics alone are first-line drugs for treating mild (stage I) essential hypertension and also potentiate other antihypertensive drugs' effect when used in combination with them to treat stage II and III hypertension. | 2.5 |
| | (c)(iii) | Low molecular weight heparin (LMWH) preparations are preferred over conventional heparin for anticoagulant indication. | 2.5 |
| | (c)(iv) | Metformin is a first-line orally effective drug for treating Type II diabetes mellitus. | 2.5 |
| | (d) | Describe different types of injuries sustained by a victim of gang rape. How will you proceed to examine and opine in such a situation? | 10 |
| | (e) | Discuss role of mediators in different reactions of inflammation. | 10 |
| 6. | (a) | Discuss pathogenesis of oral cancer. Briefly describe the malignant lesions that are likely to affect the oral cavity. | 15 |
| | (b) | Discuss etiopathogenesis of alcoholic cirrhosis. Describe its gross and microscopic appearance. | 15 |
| | (c)(i) | Discuss pathogenicity and laboratory diagnosis of amoebiasis. | 10 |
| | (c)(ii) | Discuss pathogenicity and laboratory diagnosis of Herpes simplex virus. | 10 |
| 7. | (a) | Discuss morphology, pathogenicity and laboratory diagnosis of Candidiasis. | 15 |
| | (b) | Write notes on:– | |
| | | 7½×2=15 | |
| | (b)(i) | Discuss the pharmacological strategies available for the post-myocardial infarction management. | 7.5 |
| | (b)(ii) | Discuss the first-line antimycobacterial drugs with special reference to their mechanism of action, side effects and development of resistance. | 7.5 |
| | (c) | What are the possible contributing factors in pathogenesis of carcinoma breast? Describe briefly histopathology of different types of breast carcinoma. | 20 |
| 8. | (a) | Enumerate the drugs of abuse among young population in India. Describe the long term effects of drug abuse on health and personality of the drug abuser. | 20 |
| | (b) | What are various tests to detect semen? Describe the confirmatory tests for seminal stains. | 15 |
| | (c) | Enumerate types of injuries caused by a sharp weapon. Describe how you will correlate the weapon of offence with injuries. | 15 |