MEDICAL SCIENCE (PAPER-I)

QUESTION PAPER SPECIFIC INSTRUCTIONS

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

There are EIGHT questions divided in two Sections and printed both in HINDI and in ENGLISH.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, 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.

Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other than the authorized one.

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

Illustrate your answers with suitable sketches and diagrams, wherever considered necessary. Coloured pencils may be used for the purpose.

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.
1. **Answer all of the following (in about 150 words each):**

   (a) **Describe stomach under the following headings:**

   (i) Location
   (ii) External features
   (iii) Arterial supply
   (iv) Clinical anatomy

   (b) Give the sequence of events that occurs during transmission of nerve impulse through neuromuscular junction.

   (c) Differentiate between isometric and isotonic contraction in skeletal muscle.

   (d) Describe the cervical part of the sympathetic chain.

   (e) Define ‘clearance’ of a substance by kidneys. Which clearance tests provide an estimate of glomerular filtration rate (GFR)? Explain which of these is the test of choice for assessment of GFR. What is eGFR?

2. **What are the main important functions of pyridoxine (vitamin B₆)? Explain.**

   (b) What are the features of innate and acquired immunity? What is the mechanism of action of immunoglobulins?

   (c) Describe the projection fibres of cerebrum.
3. (a) Define ‘cardiac output’ and ‘cardiac index’. Describe the regulation of cardiac output in the body. 5+15=20

(b) रोग-लाभों के विवेचन अनुसार उनकी तंत्रिका आपूर्ति 
Describe in detail about the origin and distribution of the sciatic nerve. Add a note on its clinical importance. 12+3=15

(c) संस्कृत में चर्चा कीजिएः 
Discuss briefly:
(i) विटामिन D प्रतिशोधी रिकेट्स 
Vitamin D resistant rickets
(ii) लेवा (रेड्स) तत्त्व के रूप में नामित 
Chromium as a trace element
(iii) यूकूल वांडे के मूल्यांकन में पटाखा एड्जाइन की भूमिका 
Role of plasma enzymes in evaluation of liver function

4. (a) निम्नलिखित उप-शीर्षों के अधीन जीव का वर्णन कीजिएः 
Describe tongue under the following subheadings:
(i) मूस्य में विन्यास और उनकी तंत्रिका आपूर्ति 
Mucous membrane and its nerve supply 
(ii) खेती में अवाह-तंत्र 
Muscles, movements produced by them and their nerve supply
(iii) लसीका अपवाह-तंत्र 
Lymphatic drainage
(iv) रोग-लाभों के रचना 
Clinical anatomy

(b) रोग-लाभों के विवेचन अनुसार उनकी तंत्रिका आपूर्ति 
Name the hormones involved in the regulation of blood glucose level. Discuss the pathophysiology of diabetes mellitus. 5+10=15

(c) पद पीविष्का ग्रंथि के हामोनों को निम्नाधि और शरीर में उनकी क्रियाओं का वर्णन कीजिएः 
Enumerate the hormones of posterior pituitary gland and describe their actions in the body. 15
5. Answer all of the following (in about 150 words each):

(a) List the chemical mediators of acute inflammation. Give their mechanisms of action.

(b) Define and classify hypersensitivity. Describe type I hypersensitivity.

(c) Discuss the pharmacotherapy of gout. Describe the rationale of the use of colchicine during acute attack of gout.

(d) Enumerate the major etiological factors associated with carcinoma of lung. Give the gross, microscopic features and spread of squamous cell carcinoma lung.

(e) A young person of 25 years has sustained smooth barrel shotgun firearm injury on right side of chest. How will you establish on clinical examination the entry wound and distance of fire?

6. (a) Give etiopathogenesis of carcinoma cervix. What are the tests employed for diagnosis of carcinoma cervix? Give the stages of carcinoma cervix.

(b) Discuss the pharmacology of calcium channel blockers. Enumerate the reasons for combining beta blockers with amiodipine.

(c) Discuss morphology and antigenic types of dengue virus. Describe the clinical manifestations and laboratory diagnosis of dengue fever.

7. (a) Write hypothetical medicolegal report of an injured person having sustained stab wound penetrating lung deep on right side of chest.
(b) A young female has consumed aluminium phosphide. Describe the symptoms, signs and management of such poisoning. 15

(c) स्थः कीजिए कि क्यों :
Explain why :

(i) Frusemide should not be co-administered with aminoglycoside antibiotics

(ii) सल्फाडोक्साइन और पिरिमेथामिंस संयोजन का इस्तेमाल किया जाता है

(iii) विचारिती अवस्था में प्रोप्रानोलोल नुकसान पहुँच सकता है

Propranolol is contraindicated in chronic obstructive pulmonary disease

8. (a) लिखित कीजिए पर संक्षेप रिपोर्टिंग लिखिए :
Write short notes on the following :

(i) गियार्डिया लाम्बलिया की आकारिकी, जीवन चक्र, रोगजनना और प्रबृघशाला निदान

Morphology, life cycle, pathogenicity and laboratory diagnosis of *Giardia lamblia* 10

(ii) कैन्डिडा एल्बिनिस का रोगजनन और प्रबृघशाला निदान

Pathogenesis and laboratory diagnosis of *Candida albicans* 10

(b) स्थेती ज्वर की प्रमुख और अन्त-क्लोलिंग न्या है? स्थेती कांडिंटिस के निकृति-विज्ञान और अनुगम (सीकाले) को बताइए।

What are the major and minor criteria of rheumatic fever? Give the pathology and sequelae of rheumatic carditis. 15

(c) लिखित कीजिए की क्रिया के योजकत्व, उपयोग और अनुगमी प्रभाव पर संकेत में चर्चा कीजिए :
Discuss briefly the mechanism of action, uses and side effects of the following :

(i) सितालिप्टिन

Sitagliptin

(ii) क्लोनिडिन

Clonidine

(iii) इनोएनोएल

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