

2023

MEDICAL SCIENCE
PAPER-1

Time allowed – 3 hours

Full Marks – 200

If the questions attempted are in excess of the prescribed number, only the questions attempted first up to the prescribed number shall be valued and the remaining ones ignored

*Answers may be given either in English or in Bengali.
But all answers must be in one and the same language.*

All questions carry equal marks

1. Answer any *four* of the following:

- a) Describe the attachments of flexor retinaculum. Enumerate the structures passing deep to and superficial to the retinaculum. What is carpal tunnel syndrome? 2 + 5 + 3
- b) What is cardiac output? Describe the factors controlling cardiac output. 2 + 8
- c) Describe the mechanism of skeletal muscle contraction. What is the role of ATP in muscle contraction? 7 + 3
- d) Classify hypoxia with examples of each class. Describe the pathogenesis of carbon monoxide poisoning. 6 + 4
- e) Describe the modified Duke's criteria for diagnosis of infective endocarditis. 10
- f) Define health care-associated infections (HAI). What are the common types of HAI. Describe the pathogenesis of the most common type. 2 + 2 + 6

2. Answer any *four* of the following:

- a) Enumerate different types of porphyria and name the enzyme responsible for each. What are the causes of neurological manifestations in acute intermittent porphyria (AIP)? Why do the symptoms worsen after barbiturate administration? 6 + 2 + 2
- b) What is oedema? What are the factors responsible for formation of oedema? Explain with examples. Write the pathogenesis of cardiac oedema. 2 + 3 + 5
- c) What is post-mortem staining? How to differentiate it from bruise? Write the medicolegal importance of post-mortem staining. 1 + 6 + 3
- d) What is anion gap? Describe its role as an indicator of acidosis. Enumerate compensatory mechanism of respiratory acidosis 2 + 6 + 2
- e) Describe the ovarian cycle on a hormonal basis. 10
- f) Describe the cytogenetic basis and clinical features of Down's syndrome. 2 + 8

P.T.O.

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3. Answer any *four* of the following:

- a) What are muscle spindles? Describe the stretch reflex with a labelled diagram. 2 + 8
- b) Describe the pathogenesis of myocardial infarction. 10
- c) What is megaloblastic anaemia? Describe the laboratory diagnosis of a case of megaloblastic anaemia. 2 + 8
- d) Enumerate different types of type II hypersensitivity. Describe the pathogenesis of each type with an example. 3 + 7
- e) What is normal pH of urine? How the normalcy of pH is maintained in urine? 1 + 9
- f) Describe the expected health-related changes of climate change. 10

4. Answer any *four* of the following:

- a) What is medical negligence? Write the difference between professional misconduct and medical negligence. 2 + 8
- b) What is protein energy malnutrition (PEM). Discuss PEM with special reference to Kwashiorkor disease. 2 + 8
- c) What are reticulocytes? Discuss the role of reticulocytes in diagnosis of different types of anaemia. What is ineffective erythropoiesis? 2 + 6 + 2
- d) What is status epilepticus? Describe the management of status epilepticus. 2 + 8
- e) Describe different types of aphasia with reference to lesions in different areas of brain. 10
- f) Write down the features which help to differentiate between accidental and homicidal drowning. 10

5. Answer any *four* of the following:

- a) Discuss the MTP Act, 1971 mentioning the indications and MTP Rule (2003). 5 + 5
- b) What are the diagnostic criteria of diabetes mellitus. Describe the management of diabetic ketoacidosis. 2 + 8
- c) Describe the clinical features and management of poisonous viper bite. 4 + 6
- d) Write the pathogenesis of bronchial asthma. How do you treat a case of acute severe asthma? 5 + 5
- e) Describe the NACO guidelines for post-exposure prophylaxis after needle stick injury 10
- f) Describe the role of platelets in haemostasis. What are the causes of thrombocytopenia? 6+4

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