

# IAS Mains Medical Science 1999

## Paper I

### Section A

#### Anatomy, Physiology & Biochemistry

1. Answer any three of the following (each in about 200 words):

- a. Describe the development of rights and left Atria. Mention the cogenital malformations associated with its development (20).
- b. Mention different ways by which enzyme activity is regulated. Describe the regulatory steps of glycolysis (20).
- c. Discuss briefly immune response to Virus Infection (20).
- d. Classify diuretics. Discuss the dosage and route of administration of Furosemide in different clinical conditions (20).
- e. A person is having 24 teeth of which 20 are milk teeth. Answer with reasons what is the age of the person (20).
- f. Describe the aetiopathogenesis of chronic hepatitis (20).

2. Answer the following questions

- a. Write short notes on:
  - i. Development of uterus and its congenital anomalies.
  - ii. Distribution of facial nerve (10 + 10 = 20).
- b. Discuss the mechanism of action of Hormones (20).
- c. Explain why toxicity of vitamins is seen mainly with respect to fat soluble vitamins only.

Describe different forms and roles of vitamin A (20).

3. Answer the following questions

- a. Write short notes on:
  - i. Broncho-pulmonary segments of lungs.
  - ii. Mechanism of locking and unlocking of knee joint (10 + 10 = 20).
- b. Answer the questions
  - i. Describe the structure and functions of muscle spindle.
  - ii. Compare the properties of monosynaptic and polysynaptic reflexes (10 + 10 = 20).
- c. Name the enzymes involved in DNA and RNA synthesis. Describe post-transcriptional modifications (20).

### Section B

1. Answer the following questions

- a. Discuss pathogenesis and pathology of ischaemic heart disease (30).
- b. Discuss pathogenesis and laboratory diagnosis of Cholera (30).

2. Answer the following questions

- a. Describe carcinoma colon. Name its pre-cancerous conditions (30).
- b. Name various parasites which may be found in the peripheral blood. Discuss briefly life cycle, pathogenicity and laboratory diagnosis of Plasmodium Falciparum (30)

## **Section C**

### **Pharmacology Forensic Medicine & Toxicology**

1. Answer the following questions

- a. Describe the mechanism of action and adverse effects of narcotic analgesics (20).
- b. Describe the mechanism of action, dosage and toxicity of ampicillin (20).
- c. Discuss adverse effects of the following drugs.
  - i. Chloroquin
  - ii. Metronidazole
  - iii. Methotrexate
  - iv. Aspirin (20)

2. Answer the following questions

- a. A skull has been sent to you for examination. How will you determine the sex and establish the individual identity (40)?
- b. How will you differentiate an entry wound from an exit wound in case of a firearm injury (20)?