

# IAS Mains Medical Science 1994

## Paper I

### Section A

1. Answer any three of the following (each in about 200 words):
  - a. Describe the mode of spread of cancer (20).
  - b. Name the viruses which are sexually transmitted. What are the possible mechanisms by which HIV destroys the immune cells of the body (20)?
  - c. Define basal metabolic rate (BMR). Discuss the factors that influence the BMR of a subject (20).
  - d. What are the clinical conditions where morphine or morphine like drugs are used and state two important symptoms/signs for recognition of its overdose (20)?
  - e. Describe the main events in the development of heart and explain its common congenital anomalies (20).
  - f. Enumerate the various therapeutically useful penicillins. Write briefly on mode of action, antibacterial spectrum, therapeutic uses and common adverse effects of these antibiotics (20). (Anatomy, Physiology & Biochemistry)
2. Answer the following questions
  - a. Define cardiac output. How can it be measured? Discuss the factors controlling it (20).
  - b. What are vitamins? Name the diseases produced by the deficiency of vitamin A, vitamin C, vitamin D, vitamin B, and vitamin B<sub>12</sub>. What are the functions of vitamin E (20)?
  - c. Draw and label a cross-section (horizontal section) of abdomen passing through both the kidneys (20).
3. Answer the following questions
  - a. How is glucose homeostasis maintained in the body (20)?
  - b. What are enzymes? Discuss the factors that affect the enzyme activity (20).
  - c. Define and enumerate broncho-pulmonary segments. What is their clinical significance (20)?

### Section B

#### Pathology & Microbiology

1. Answer the following questions
  - a. Define inflammation. Describe the vascular phenomenon of the inflammation (30).
  - b. Name the bacterial diseases which are transmitted by contaminated water. Describe the laboratory diagnosis of typhoid fever and the precautions to be undertaken in the interpretation of laboratory results (30).
2. Answer the following questions

- b. Define sterilization and mention the various physical methods of sterilization and their applications (30).

## **Section C**

### Pharmacology Forensic Medicine & Toxicology

1. Discuss in detail the general principles of treatment of barbiturate poisoning (60).
2. Answer the following questions
  - a. Write in brief about the significance of DNA fingerprinting in personal identification (20).
  - b. What is the mode of action of beta-blockers in lowering blood pressure (20)?
  - c. What are clinical manifestations of organo-phosphorus poisoning and what antidote will you use in this poisoning (20)?