

IAS Mains Medical Sciences 2004

Paper-I

Section A

1. Attempt any three of the following in about 200 words for each:

- a. Describe microscopic anatomy and fine structure of NEPHRON. Add a note on its applied anatomy (20).
- b. Discuss boundaries and contents of superficial and deep perineal spaces (pouches). Add a note on their applied Anatomy (20).
- c. What is the role of middle ear in hearing? Why there is need for two ears (20).
- d. The DNA is the bearer of hereditary information was demonstrated long time back by scientists Avery Macleod and McCarty. Describe briefly how did they do it (20).

2. Answer the following questions

- a. Write in brief anatomy of RIGHT ATRIUM. Discuss errors in development leading to various congenital malformations of heart (20).
- b. How sympathetic stimulation prepares the person for flight and fight reaction (20)?
- c. Describe functional components, origin, course and distribution of THIRD CRANIAL nerve (20).

3. Answer the following questions

- a. List anterior pituitary hormones and their main actions in brief. What will happen in the deficiency of growth hormone (20)?
- b. What are the steps of homeostasis? Why blood clotting is abnormal in patients with Vitamin K deficiency (20)?
- c. What is Puberty? Summarise the changes that occur at Puberty in females (20).

4. Answer the following questions

- a. As per the latest knowledge of the Biochemistry, how do you define a Gene? Discuss the changes that have taken place in this definition over the years (20).
- b. Describe and explain the ventilatory changes in acid-base balance (20).
- c. It is said that fatty deposits in the body represent concentrated storage forms of energy. From your knowledge of metabolic pathways, explain and substantiate the above statement (20).

Section B

5. Answer any three of the following in about 200 words for each:

- a. What is the current histopathological classification and grading system applied in meningiomas (20)?
- b. Define and classify bacterial food poisoning; give examples. Describe in detail the method of investigating a suspected outbreak of food poisoning in a school having mid-day meal programme to find the cause and source (20).

- c. What is drug? How are they absorbed and distributed in the body? Describe the factors that modify the absorption of drug (20).
- d. What are the parts of 'Medicolegal report' Describe how will you examine and prepare a medicolegal report of an injured person (20).

6. Answer the following questions

- a. Discuss the histopathological features that play a role in the prognosis of breast carcinomas (20).
- b. Name the STD's and their causative agents. Describe the various modes of spread of HIV. Describe the functions of VCTC and PPTCT programme (20).
- c. Classify fungi morphologically. Name the opportunistic fungi and the organ commonly affected by them. Write the general approach to the Lab diagnosis of fungal infections (20).

7. Answer the following questions

- a. Classify barbiturates according to their onset and duration of action. Discuss about their pharmacological actions, uses and side affects (20).
- b. Give an account of mechanism of action, therapeutic uses and side affects of antifungal drugs with special reference to griseofulvin ointment (20).
- c. Critically discuss about the pharmacological actions, uses and side affects of Ibuprofen, Furosemide and Chloro-quine (20).

8. Answer the following questions

- a. Enumerate the various screening tests for blood stains. Describe the tests to establish the blood group of the blood stain (20).
- b. Describe the procedures of medical examination and methods of preserve trace evidences to detect semen as a proof of sexual offence of a 18 year's old female (20).
- c. Describe how will you differentiate between suicidal and homicidal injuries on medical examination (20).