

SECTION A

- 1. (a)** Discuss the Functional Components, Nucleus, Course, Distribution of Seventh Cranial Nerve **10**
- 1. (b)** A 52-year-old chronic alcoholic man has difficulty in his gait with imbalance and tendency to fall. Elaborate the underlying physiology of motor coordination and features of cerebellar dysfunction. **10**
- 1. (c)** A 35-year-old man presented with complaints of generalized weakness, loss of appetite and yellowish discoloration of eyes. The liver function test was done and the report is as follows:
- | | |
|-------------------------------|----------------------------|
| Total bilirubin: | 10 mg/dL (0.1 – 1.2 mg/dL) |
| Direct transaminase: | 9 mg/dL (<0.3 mg/dL) |
| Alanine transaminase (ALT): | 31 IU/L (<35 IU/L) |
| Aspartate transaminase (AST): | 33 IU/L (<40 IU/L) |
| Alkaline phosphatase (ALP): | 800 IU/L (45-150 IU/L) |
- (i)** What is the most likely diagnosis and why?
- (ii)** What will be the expected findings in urine and stool? **5+5 = 10**
- 1. (d) (i)** Enumerate palmar spaces of Hand. **5**
- (ii)** Enumerate and developmental components of thoraco Abdominal Diaphragm. **5**
- 1. (e)** Describe Bronchopulmonary segment of lungs. Add a note on the importance of organ transplantation. **10**
- 2. (a)** Describe the knee joint under the following headings:
1. Types Articular surface
 2. Ligaments
 3. Relations
 4. Blood supply and nerve supply
 5. Movements
- 20**
- 2. (b) (i)** Enumerate various hormones secreted by pituitary gland with their cell types **5**
- 2. (b) (ii)** A 28-year-old man noticed marked enlargement of bones of his hands and feet along with coarsening of facial features and prognathism. He was diagnosed as a case of pituitary adenoma. What ailment he is suffering from and its features? Describe physiological status of anterior pituitary hormones of this patient and its control mechanism. **10**
- 2. (c) (i)** Discuss the principle and the steps involved in real time PCR. Enlist any five applications of PCR in medicine. **5+5 = 10**
- 2. (c) (ii)** Explain the significance of selenium in biochemical processes **5**
- 3. (a) (i)** Describe the physiological mechanism involved in control and maintenance of tone, posture and equilibrium and its various anatomical structures and pathways **10**
- 3. (a) (ii)** Elaborate types and stages of sleep along with EEG findings. Describe neuronal and neurohumoral mechanism causing sleep with possible role of serotonin in it **10**

- 3. (b)** Discuss in detail the hormonal regulation of calcium and phosphate homeostasis. Add a note on the causes and clinical manifestations of hypocalcemia. **10+5 = 15**
- 3. (c)** Describe stomach under the following headings:
1. Position
 2. Gross features
 3. Peritoneal and visceral relation
 4. Blood supply and lymphatic drainage
 5. Clinical anatomy **15**
- 4. (a) (i)** Explain in detail the absorption and biochemical role of Vitamin K in the body. Add a note on the deficiency manifestations of Vitamin K along with relevant laboratory investigations for confirmation **10**
- 4. (a) (ii)** Define Clearance. Explain its significance and enumerate the methods available for its determination. **10**
- 4. (b) (i)** Illustrate a diagram of Neuromuscular function elaborating neuromuscular transmission and muscular contraction. **5**
- 4. (b) (ii)** Describe various Cardiovascular changes during physical exercises. **10**
- 4. (c) (i)** Describe the gross anatomy, blood supply and applied importance of Thyroid gland. **8**
- 4. (c) (ii)** Enumerate the different types of myelinated fibres in the cerebral white matter **4**
- 4. (c) (iii)** Enumerate the Developmental Components of Inferior vena cava. **3**

SECTION B

- 5. (a)** What are the major cell derived mediations of inflammation? Describe their role in acute Inflammation. **10**
- 5. (b) (i)** Discuss the laboratory diagnosis of acute meningococcal meningitis. **5**
- 5. (b) (ii)** Discuss the laboratory diagnosis of HIV in an asymptomatic individual. **5**
- 5. (c)** Discuss general toxicity associated with the use of cytotoxic drugs. **10**
- 5. (d)** What are the growth factors involved in Regeneration and repair of tissues? **10**
- 5. (e)** Explain violent asphyxia death. Write about various types of violent asphyxia death. **5+5 = 10**
- 6. (a) (i)** Give the laboratory findings in a case of Acute Myeloid leukemia (PML/RARA) fusion gene type. **10**
- 6. (a) (ii)** Give the etiopathogenesis, Gross and microscopic picture picture of Acute bacterial osteomyelitis. **10**

- 6. (b)** What are the different classes of oral hypoglycaemic drugs used in the management of diabetes mellitus? Discuss the mechanism of action, side effects and clinical uses of sulphonyl urea. **15**
- 6. (c) (i)** Discuss epidemiology, pathogenesis and laboratory diagnosis of Polio virus infection. **7.5**
- 6. (c) (ii)** Enumerate infections caused species. Suggest a laboratory approach for the diagnosis of invasive candidial infections. **7.5**
- 7. (a)** What is DNA finger printing? What precautions should be taken while collecting various samples from living human being for this test? What is DNA Bill? **5+10+5 = 20**
- 7. (b)** Discuss the process of wound healing. What is the significance of stages of wound healing in Medico-legal cases? **5+10 = 15**
- 7. (c)** Explain why:
- 7. (c) (i)** Fungal infections have been on the rise over the past few decades. **5**
- 7. (c) (ii)** Sudden withdrawal of Clonidine causes rebound hypertension. **5**
- 7. (c) (iii)** Artemether-Lumefantrine combination for treatment of malaria should be administered with fatty food. **5**
- 8. (a) (i)** Briefly describe the pathogenesis and laboratory diagnosis of enteric fever. **10**
- 8. (a) (ii)** Describe in brief the life cycle of Plasmodium vivax. How will you make a laboratory diagnosis of malaria? **10**
- 8. (b)** Give the pathogenesis, Urinary findings and Immunofluorescence picture in Acute Post infection glomerulonephritis. **20**
- 8. (c)** Discuss precisely the mechanism of action, side effects and medical uses of the following: **5×2 = 10**
- 8. (c) (i)** Allopurinol
- 8. (c) (ii)** Telmisartan