

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE I EXAMINATION
MARCH, 2003

Date :- 5th March, 2003

Time :- 1.00 p.m. - 4.00 p.m.

ESSAY PAPER

Answer all questions in Parts A, B and C.

Answer each question in separate answer books.

PART A
(ANATOMY)

1.
 - 1.1. Describe the ventricular system of the brain and its development.
 - 1.2. Describe the production and circulation of cerebro spinal fluid (CSF) in the ventricular system.
 - 1.3. Explain the anatomical basis of papilloedema.

2.
 - 2.1. Describe briefly the development of the skull.
 - 2.2. Describe the anatomical features of a skull at birth.
 - 2.3. List the paranasal sinuses in an adult.
 - 2.4. Describe the maxillary sinus.

PART B
(PHYSIOLOGY)

3. A 40 year old patient lost 1.5 liters of blood during an operation. His blood pressure was low, pulse rate 100/min. and his skin was pale and cold.
 - 3.1. What is the type of shock seen in this patient.
 - 3.2. Name three other types of shock.
 - 3.3. What is the physiological basis of the following
 - (a) Hypotension
 - (b) Increased pulse rate
 - (c) Pale cold skin

3.4 Explain the renal compensations that will occur in this patient.

3.5 What changes occur in the following

- (a) Pulse pressure
- (b) Central venous pressure
- (c) Peripheral vascular resistance
- (d) Cardiac index

3.6. Name 2 causes of shock associated with a high central venous Pressure.

4.

4.1. List the factors that affect the diffusion of gases across the alveolar capillary membrane.

4.2. Describe how oxygen is transported from lungs to the tissues.

4.3 Define hypoxia.

4.4 List four major types of hypoxia.

4.5 Describe the physiological basis for the alteration of blood gases in

- (a) pulmonary oedema
- (b) chronic obstructive airway disease

PART C (PATHOLOGY)

5.

5.1. List the differences between hyperplasia and neoplasia.

5.2. Discuss briefly the terms initiation and promotion in carcinogenesis.

5.3. Describe the role of oncogenes in carcinogenesis giving examples.

5.4. List human tumours aetiologically associated with viruses.

6. Write short notes on

6.1. Anaphylaxis

6.2. Beta blockers

6.3. Polymerase chain reaction

6.4. Inflammatory exudate in acute inflammation.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION
MARCH, 2004

Date: 3rd March, 2004

Time: 1.00 p.m. - 4.00 p.m.

ESSAY PAPER

Answer all questions in Parts A, B and C.

Answer each question in a separate answer book.

PART A
(ANATOMY)

1.
 - 1.1 Write an account of the distribution of the lymph nodes and the lymphatic drainage of the structures in the head and neck region.
 - 1.2 Give the relations and the microscopic features of the oesophagus in the cervical region.
2. Describe the cervical sympathetic chain and the distribution of its branches indicating their clinical significance.

PART B
(PHYSIOLOGY)

3.
 - 3.1 Describe the physiology of microcirculation. Discuss briefly its clinical significance.
 - 3.2 Give the physiological basis of oedema in congestive cardiac failure.
4.
 - 4.1 What is a reflex action ?
 - 4.2 Explain with a diagram the transient changes in the membrane potential that occur in a neurone in response to a threshold stimulus.
 - 4.3 Give the physiological basis of the following clinical presentation.
"A patient who is unable to move the angle of the mouth, can wrinkle his brow on the affected side".
 - 4.4 Describe the reflex pathway of the knee jerk with a note on its clinical significance.

PART C
(PATHOLOGY)

5. Describe briefly the different morphological types of cell death.

6. Write notes on :
 - 6.1 Pathogenesis of HIV (Human Immunodeficiency Virus) infection.
 - 6.2 Pathogenesis and pathology of deep vein thrombosis.
 - 6.3 Quinolones.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION
MARCH, 2005

Date :- 21st March, 2005

Time :- 1.00 p.m. - 4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, B and C.

Answer each question in a separate answer book.

PART A
(ANATOMY)

1.
 - 1.1 Draw and label a diagram of the transverse section of the mid brain at the level of the inferior colliculus.
 - 1.2 Describe the origin, course and distribution of the trochlear nerve.
 - 1.3 Discuss the anatomical basis of the clinical manifestations of a trochlear nerve lesion.
2.
 - 2.1 Describe the attachments, relations and innervation of the posterior belly of the digastric muscle.
 - 2.2 Explain why it is an excellent anatomical landmark in surgical practice.

PART B
(PHYSIOLOGY)

3.
 - 3.1 Explain how erythropoiesis occurs in a healthy adult.
 - 3.2 Explain the statement ,
"The partial pressure of oxygen is normal but the oxygen content of the blood is reduced in patients with anaemia".
 - 3.3 **List** the physiological mechanisms available to arrest haemorrhage after an injury to a blood vessel.
 - 3.4 Explain the physiological basis for the normal bleeding time and the prolonged clotting time in a Haemophilia A patient.

4.
 - 4.1. **Outline** the functions of calcium in physiologic processes.
 - 4.2. Describe the actions of **the three major** calcium regulating hormones.
 - 4.3. Give the physiological basis for the occurrence of tetany in hyperventilation.

**PART C
(PATHOLOGY)**

5.
 - 5.1. Write short notes on,
 - (a) Oncogenes
 - (b) Chemical mediators of inflammation
 - (c) Actions and side effects of glucocorticoids

6.
 - 6.1. Describe hyperplasia giving examples.
 - 6.2. List the differences between hyperplasia and neoplasia.
 - 6.3. List three other pathological processes that cause enlargement of an organ or a tissue.
 - 6.4. Describe **one** of the processes mentioned in 6.3.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION
MARCH, 2006

Date :- 20th March, 2006

Time :- 1.00 p.m. - 4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, B and C.
Answer each question in a separate answer book.

PART A
(ANATOMY)

1.
 - 1.1. Draw and label a diagram of the transverse section of the spinal cord at the upper cervical level indicating the ascending and descending tracts.
 - 1.2. Explain with the aid of a diagram, the pathway of "pin prick" from the skin over the sternocleidomastoid muscle.
2.
 - 2.1. Describe the scalenus anterior muscle and its relations.
 - 2.2. Discuss how this knowledge is applicable in clinical practice.

PART B
(PHYSIOLOGY)

3.
 - 3.1. Give the physiological mechanisms that facilitate the venous return from the extremities to the heart.
 - 3.2. Describe the following mechanisms in **vivo** –
 - (a) prevention of formation of clots.
 - (b) breakdown of clots.
 - 3.3. Explain the renal compensation in metabolic acidosis.

4. Explain the physiological basis of the following
 - 4.1. Hypertension in Cushing's syndrome
 - 4.2. "Passive immunity does not give life long protection from disease"
 - 4.3. Partial pressure of carbon dioxide in arterial blood is high in type II respiratory failure and not in type I respiratory failure.

**PART C
(PATHOLOGY)**

5. Write short notes on ,
 - 5.1. Viral oncogenesis
 - 5.2. Anaerobic wound infections
 - 5.3. Adverse reactions to antibiotics

6.
 - 6.1. Define chronic inflammation.
 - 6.2. List the differences between acute and chronic inflammation.
 - 6.3. Name three (03) infections that give rise to chronic granulomatous type of inflammation
 - 6.4. Briefly describe the process of granuloma formation.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE I EXAMINATION
MARCH 2007

Date: 26th March 2007

Time: 1.00 p.m. - 4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, Band C.

Answer each question in a separate answer book.

PART A (ANATOMY)

1.
 - 1.1. Describe the anatomy of the lateral wall of the nose, including its blood supply and innervation. (80 marks)
 - 1.2. How does this knowledge become applicable in clinical practice? (20 marks)
2.
 - 2.1. Write an account of the contents and relations of the cavernous sinus. (60 marks)
 - 2.2. Describe its tributaries and drainage. (15 marks)
 - 2.3. Discuss the clinical importance of the cavernous sinus. (25 marks)

PART B (PHYSIOLOGY)

3.
 - 3.1. Outline the mechanisms that are involved in the production of heat in the body. (15 marks)
 - 3.2. List the processes by which heat is lost from the body. (10 marks)
 - 3.3. Why is temperature regulation needed ? (05 marks)
 - 3.4. Explain the responses to temperature differences between the core and the environment. (45 marks)
 - 3.5. Explain the pathophysiology of fever. (25 marks)

4. Give the physiological basis of the following:
- 4.1. Increased blood supply to skeletal muscles during exercise (25 marks)
 - 4.2. Polyuria in diabetes mellitus (25 marks)
 - 4.3. Anaphylactic shock (25 marks)
 - 4.4. Chloride shift in erythrocytes (25 marks)

PART C (PATHOLOGY)

- 5.
- 5.1. Write short notes on :
 - 5.1.1. Growth factors (30 marks)
 - 5.1.2. Metaplasia (30 marks)
 - 5.2. Explain the term bioavailability. Discuss factors that affect it. (40 marks)
- 6.
- 6.1. Give two examples each for the following:
 - 6.1.1. Apoptosis occurring in physiological conditions (10 marks)
 - 6.1.2. Disorders associated with an increase in apoptosis (10 marks)
 - 6.1.3. Disorders associated with a decrease in apoptosis (10 marks)
 - 6.2. Describe the morphological features (light microscopic) of an apoptotic cells. (20 marks)
 - 6.3. List the differences and similarities between apoptosis and necrosis. (50 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE I EXAMINATION
MARCH 2008

Date : 19th March 2008

Time : 1.00 p.m. - 4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, Band C.

Answer each question in a separate answer book.

PART A (ANATOMY)

1.
 - 1.1 Describe the origin and course of the secretomotor pathways of the following glands.
 - 1.1.1 Parotid gland. (40 marks)
 - 1.1.2 Submandibular salivary gland. (30 marks)
 - 1.1.3 Lacrimal gland. (30 marks)
2. Describe the bones that form the following components of the orbit including their relations.
 - 2.1 Medial wall (50 marks)
 - 2.2 Floor (50 marks)

PART B (PHYSIOLOGY)

3.
 - 3.1. Outline the factors that determine the blood flow to an organ (15 marks)
 - 3.2. Explain the autoregulation of cerebral blood flow. (35 marks)
 - 3.3. Describe the baroreceptor reflex regulation of blood pressure. (50 marks)

4. Explain the physiological basis of the following
- 4.1. Haemoglobinuria in incompatible blood transfusion. (25 marks)
 - 4.2. Bone changes in chronic renal failure. (25 marks)
 - 4.3. Occurrence of acidosis in type II respiratory failure. (20 marks)
 - 4.4. Referred pain. (30 marks)

PART C (PATHOLOGY)

- 5.
- 5.1. Describe the differences between labile, stable and permanent cells in the body. (40 marks)
 - 5.2. State the different clinical situations in which resolution, regeneration and repair occur.
Explain the underlying reasons for these different processes of healing. (60 marks)
6. Write short notes on
- 6.1. Opportunistic infections. (30 marks)
 - 6.2. Principles of antimicrobial chemotherapy. (30 marks)
 - 6.3. Type III hypersensitivity. (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE I EXAMINATION
MARCH 2009

Date : 25th March 2009

Time : 1.00 p.m. - 4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, Band C.

Answer each question in a separate answer book.

PART A (ANATOMY)

1.
 - 1.1. Describe the extracranial course and distribution of the facial nerve. (75 marks)
 - 1.2. Discuss its clinical relevance (25 marks)

2.
 - 2.1. Describe the investing layer of the deep cervical fascia. (70 marks)
 - 2.2. State the relations of the internal carotid artery at its origin. (30 marks)

PART B (PHYSIOLOGY)

3.
 - 3.1. Explain the chemical regulation of respiration that occurs with an acute reduction of arterial partial pressure of oxygen to 58 mmHg. (50 marks)
 - 3.2. Explain the physiological basis of using oxygen therapy in a patient with “hypoxic hypoxia”. (50 marks)

4. Explain the physiological basis of the following :-
- 4.1. Bradycardia on stimulating the carotid sinus on one side. (40 marks)
 - 4.2. Potassium excretion in the kidney depends on acid base balance. (30 marks)
 - 4.3. Hypotonia in a lower motor neurone lesion. (30 marks)

PART C (PATHOLOGY)

- 5.
- 5.1. List four (04) main causes of vascular occlusion (20 marks)
 - 5.2. Describe briefly three (03) factors that determine the consequences of vascular occlusion (30 marks)
 - 5.3. Describe the possible consequences of vascular occlusion in different tissues giving examples. (50 marks)
- 6.
- 6.1. Define sterilization (10 marks)
 - 6.2. Define disinfection (10 marks)
 - 6.3. Describe the methods available for disinfection of instruments in surgical practice. (80 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION
MARCH /APRIL 2010

30th March 2010

Time : 1.00 p.m.-4.00p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, Band C.

Answer **each question in a separate answer book.**

PART A (ANATOMY)

1.
 - 1.1. Describe with the aid of a diagram, a transverse section through the inferior part of the pons. (50 marks)
 - 1.2. Describe the cranial nerve nuclei in the pons. (40 marks)
 - 1.3. Name a clinical syndrome associated with a unilateral lesion in the lower part of the pons and list the clinical features. (10 marks)
2.
 - 2.1. Describe the structure of the temporomandibular joint including its nerve supply and blood supply. (65 marks)
 - 2.2. Discuss its movements. (25 marks)
 - 2.3. List the medial relations of the joint. (10 marks)

PART B (PHYSIOLOGY)

3.
 - 3.1. Explain how variations in arteriolar resistance affect the arterial blood flow. (50 marks)
 - 3.2. Explain the concentrating and diluting mechanisms of urine. (50 marks)

4. Explain the physiological basis of the following:
- 4.1. A patient had presented with aphasia and weakness of the right lower half of the face. (40 marks)
 - 4.2. In a healthy adult, alveoli do not collapse during expiration. (30 marks)
 - 4.3. The beneficial effects of glucocorticoids on bronchial asthma. (30 marks)

PART C (PATHOLOGY)

- 5.
- 5.1.
 - 5.1.1. Give the definition of gangrene. (10 marks)
 - 5.1.2. Describe the differences between dry and wet gangrene giving examples. (40 marks)
 - 5.2.
 - 5.2.1. Define "chronic inflammation" (10 marks)
 - 5.2.2. Discuss the role of macrophages in chronic inflammation. (40 marks)
6. Write notes on :
- 6.1. MRSA (Methicillin Resistant Staphylococcus Aureus) infection. (35 marks)
 - 6.2. Principle and applications of the Polymerase Chain Reaction. (PCR) technique. (35 marks)
 - 6.3. Type I hypersensitivity reaction. (30 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION
MARCH /APRIL 2011

Date : 29th March 2011

Time : 1.00 p.m.-4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, B and C.

Answer each question in a separate answer book.

PART A (ANATOMY)

1.
 - 1.1. Describe the macroscopic anatomy of the pituitary gland and add a note on its histology. (60 marks)
 - 1.2. Discuss the clinical importance of the structural relations of the pituitary gland. (20 marks)
 - 1.3. State briefly the development of the pituitary gland. (20 marks)
2. Describe the venous drainage of the head and neck including the brain. (100 marks)

PART B (PHYSIOLOGY)

3. Describe the following :
 - 3.1. Effects of high altitude on the body. (60 marks)
 - 3.2. Complications of transection of the spinal cord. (40 marks)
4. Explain the physiological basis of the following :
 - 4.1 Osteomalacia in chronic renal failure. (25 marks)
 - 4.2. Tachycardia in shock. (25 marks)
 - 4.3. Low urine output in a patient who has lost 1L of blood. (25 marks)
 - 4.4. Bleeding tendency in disseminated intravascular coagulation. (25 marks)

PART C (PATHOLOGY)

5. Describe the following :
 - 5.1. The biological phases of tumour growth. (40 marks)
 - 5.2. Chemical carcinogenesis. (30 marks)
 - 5.3. Paraneoplastic syndromes. (30 marks)

6.
 - 6.1. Discuss the advantages and disadvantages of combining adrenaline with lignocaine, in local anaesthesia. (40 marks)

 - 6.2. Writes notes on
 - 6.2.1 Endotoxins. (30 marks)
 - 6.2.2. Prostaglandins. (30 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION

MARCH 2012

Date : 26th March 2012

Time : 1.00 p.m.-4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, B and C.

Answer each question in a separate answer book.

PART A (ANATOMY)

1.
 - 1.1. Name the boundaries of the infratemporal fossa. (20 % marks)
 - 1.2. Describe the gross anatomy of the lateral pterygoid muscle including its relations. (80 % marks)
2.
 - 2.1. Describe the relations of the thyroid gland. (80 % marks)
 - 2.2. List the abnormal positions of the parathyroid glands. (20 % marks)

PART B (PHYSIOLOGY)

3.
 - 3.1. Describe the process of haemostasis in a healthy adults. (60 % marks)
 - 3.2. Explain the physiological basis of the Cushing reflex. (40 % marks)
4. Explain the following:
 - 4.1. Compensatory mechanisms in metabolic acidosis. (40 % marks)
 - 4.2. Importance of Ca⁺⁺ in cardiac muscle contraction. (30 % marks)
 - 4.3. Alteration of autonomic functions in the respiratory system in organophosphate poisoning. (30 % marks)

PART C (PATHOLOGY)

5. Describe briefly the pathological processes elicited in tissues by infectious agents, giving examples. (100 % marks)
6. Write short notes on
 - 6.1. Gancyclovir (30 % marks)
 - 6.2. Telomeres (30 % marks)
 - 6.3. Nosocomial infections (40 % marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE 1 EXAMINATION
MARCH 2013

Date : 25th March 2013

Time : 1.00 p.m.-4.00 p.m.

STRUCTURED ESSAY PAPER

Answer all questions in Parts A, B and C.
Answer each question in a separate answer book.

PART A (ANATOMY)

1. Describe the relations of the Carotid Bifurcation. (100 % marks)

2.
 - 2.1. Describe the anatomy of the tongue. (70 % marks)
 - 2.2. Add a note on its development. (30 % marks)

PART B (PHYSIOLOGY)

3.
 - 3.1. Describe the physiological mechanisms involved in preventing clot formation inside blood vessels. (70 % marks)
 - 3.2. Explain ventilation / perfusion ratios in an upright normal lung. (30 % marks)

4.
 - 4.1. Describe the physiological mechanisms involved in maintaining the extracellular fluid volume in hyperosmolar dehydration.. (60 % marks)
 - 4.2. Explain the physiological determinants of ejection fraction. (40 % marks)

PART C (PATHOLOGY)

5.
 - 5.1. Define the term “ Premalignant lesion / condition “. (10 % marks)
 - 5.2. State five (05) examples of premalignant lesions / conditions. (20 % marks)
 - 5.3. Explain the pathogenesis, pathological features and the clinical significance of the above mentioned examples. (70 % marks)

6. Write notes on :
 - 6.1. Pathogenesis of Graft vs Host Disease. (35 % marks)
 - 6.2. Opportunistic infections in patients with HIV (Human Immune deficiency Virus) infection. (35 % marks)
 - 6.3. Aetiopathogenesis of Adult Respiratory Distress Syndrome (ARDS). (30 % marks)