

- 3H. Explain the effects of damage to Broca and Wernicke area in categorical hemisphere. What is dyslexia?
- 3I. Name the sensory receptors of different parts of vestibular apparatus. How are they activated? List the functions of vestibular system.
- 3J. Give the source, target tissue and the actions of vasopressin
- 3K. Explain the clinical features of adrenocortical insufficiency.
- 3L. Draw a labeled diagram of a taste bud. Name the different chemicals that are responsible for the basic taste modalities.
- 3M. Define 'near point' of vision. Explain why near point recedes as age advances.
- 3N. Mention the actions of dihydrotestosterone. Explain the physiological basis of male pseudohermaphroditism.
- 3O. Trace and explain the pattern of secretion of estrogen, progesterone and LH during normal menstrual cycle. Mention the mechanism of action of oral contraceptive pills in women.

(4 marks × 15 = 60 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
FIRST MBBS DEGREE EXAMINATION – AUGUST 2018
SUBJECT: PHYSIOLOGY– PAPER II (ESSAY)

Tuesday, August 14, 2018

Time: 10:20 – 13:00 Hrs.

Max. Marks: 80

✍ **All questions are compulsory.**

✍ **Long Essays:**

1 A 55 year old male patient reported with severe crushing type of precordial chest pain radiating to left shoulder and arm with profuse sweating. He was found to have a blood pressure 90/60 mm of Hg and heart rate of 55 beats/minute. The attending physician made a diagnosis of Myocardial infarction.

1A. List special features of coronary circulation. How is coronary blood flow regulated based on increased myocardial O₂ demand?

1B. What electrocardiographic findings do you expect to find in this patient?

1C. What is circulatory shock? What is the type of shock that is most likely to occur in this case?

(6+2+2 = 10 marks)

2. Describe the following aspects of O₂ transport:

2A. PaO₂, total O₂ content and percentage saturation of arterial and venous blood.

2B. Factors influencing release of O₂ at tissues.

2C. Explain how arterio-venous O₂ difference is affected in stagnant hypoxia?

(6+2+2 = 10 marks)

3. **Short answer questions:**

3A. Explain primary active transport using two different examples.

3B. Explain the significance of timed vital capacity.

3C. Explain how baroreceptors mediate rapid adjustments in mean arterial blood pressure.

3D. Explain renal clearance test for estimating renal blood flow.

3E. Describe TWO different mechanisms that can be targeted to reduce gastric HCl secretion.

3F. Explain how cardiac output is regulated by changes in *preload*.

3G. Describe the role of bile salts in fat digestion and absorption. Mention TWO different conditions leading to steatorrhea.

3H. Explain the pharyngeal stage of deglutition. What is reflux esophagitis?

3I. List the functions of saliva. Explain why administration of atropine (anticholinergic drug) leads to deficient salivation.

3J. Explain the terms: Renal threshold for glucose and Transport maximum for Glucose (T_{mG})

3K. Explain how CO₂ is transported in bicarbonate form in plasma. What is Haldane effect?

3L. Explain the role of renal buffers in renal H⁺ secretion.

3M. Explain the thermoregulatory changes when the body is exposed to cold climate.

3N. Name the types and functions of: T cells and antigen presenting cells.

3O. Explain the functions of platelets.

(4 marks × 15 = 60 marks)

