

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019  
(First Semester)

Branch - **CLINICAL NUTRITION AND DIETETICS**

**HUMAN PHYSIOLOGY**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 1 = 10)

- 1 Which of the following is broken down from carbohydrates in the presence of salivary amylase?  
(i) Fatty acids (ii) Polypeptides  
(iii) Amino acids (iv) Simple sugars
- 2 Which of the following is a link between nervous system and endocrine system?  
(i) Midbrain (ii) Hindbrain  
(iii) Hypothalamus (iv) Thalamus
- 3 Which of the following statements is true regarding the pulmonary circulation?  
(i) It carries oxygenated blood away from the heart  
(ii) It carries deoxygenated blood away from the heart  
(iii) It carries oxygenated blood away from the lungs  
(iv) It carries deoxygenated blood away from the lungs
- 4 Indicate the lining of the heart.  
(i) Endocardium (ii) Epicardium  
(iii) Pericardium (iv) Myocardium
- 5 Which one of the following pair mean one and the same thing?  
(i) Leucocytes - Lymphocytes (ii) SA node - Pacemaker  
(iii) Malleus - naevil (iv) Hemophilia - blood cancer
- 6 Which of the following reflexes disappear in the absence of functional connections between spinal cord and brain?  
(i) Swallowing reflex (ii) Seating reflex  
(iii) Withdrawal reflex (iv) Erection of penis
- 7 Which one of the following statement is true about the proximal tubule?  
(i)  $\text{Na}^+/\text{K}^+$  ATPase drives sodium into the cell from proximal side of the tubule  
(ii)  $\text{Na}^+/\text{H}^+$  exchange is largely the mechanism by which hydrogen ion secretion occurs  
(iii) bicarbonate reabsorption is independent of carbonic anydrase activity  
(iv) pH in the lumen of the proximal tubule can reach as low as about 5.0
- 8 Where is protein digestion accomplished?  
(i) Stomach (ii) Ileum  
(iii) Rectum (iv) Duodenum

**Cont...**

- 9 Which of the following is referred to as the volume of air breathed in and breathed out during respiration?
- (i) Tidal volume (ii) Vital volume  
(iii) Vital capacity (iv) Ideal volume
- 10 Find the two types of immunity present in humans.
- (i) Overt and covert (ii) Innate and acquired  
(iii) Intrinsic and extrinsic (iv) Internal and external

**SECTION-B (35 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks ( 5 x 7 = 35)

- 11 a Explain the role of lymphocytes in immune system.  
OR  
b Discuss on the hypersensitivity responses of human body.
- 12 a Describe ECG and its interpretations.  
OR  
b Explain the gaseous transport in lungs and tissues.
- 13 a Discuss on the digestion and absorption of proteins.  
OR  
b Evaluate the role of hemodialysis in renal failure subjects.
- 14 a Describe the significance of menstrual cycle.  
OR  
b Explain any 2 disorders of muscular system.
- 15 a Discuss on the reflexes involved in nerve conduction.  
OR  
b Illustrate the structure of an ear and mechanism of hearing.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Compare the roles of innate and cell mediate immunity in the human body.
- 17 Elucidate the anatomical description of the heart and discuss about hypertension.
- 18 Evaluate the process of digestion, regulation and functions of digestive system.
- 19 Analyze the structure and functions of thyroid gland and compare between hypo and hyperthyroidism.
- 20 Compare and differentiate between autonomic and central nervous system.