



Programme: D. Pharm
Course: Human Anatomy & Physiology
Course Code: ER20-14T
Enrolment No: _____

Full Marks: 80
Time: 3 Hrs.

Section I

1. Objective type questions. Answer all questions.

1 x 20 = 20

- i. Which organelle is known as the powerhouse of the cell?
a) Nucleus b) Mitochondria c) Ribosomes d) Endoplasmic Reticulum
- ii. Which of the following is an example of connective tissue?
a) Blood b) Skeletal muscle c) Skin d) Nerve
- iii. Where does hemopoiesis occur in adults?
a) Liver b) Spleen c) Bone marrow d) Lymph nodes
- iv. Which organ filters lymph and helps fight infections?
a) Lungs b) Liver c) Lymph nodes d) Spleen
- v. What is the primary function of the alveoli in the lungs?
a) Warm and moisten the air b) Transport oxygen to the blood
c) Exchange gases (oxygen and carbon dioxide) d) Filter out particles from the air
- vi. Which enzyme in the stomach aids in protein digestion?
a) Amylase b) Lipase c) Pepsin d) Trypsin
- vii. Where does the majority of nutrient absorption occur in the digestive system?
a) Stomach b) Small intestine c) Large intestine d) Liver
- viii. Which of the following organs produces bile?
a) Gallbladder b) Liver c) Pancreas d) Duodenum
- ix. Which part of the brain regulates heartbeat and respiration?
a) Cerebrum b) Medulla oblongata c) Pons d) Hypothalamus
- x. Which neurotransmitter is primarily involved in the sympathetic nervous system?
a) Acetylcholine b) Norepinephrine c) Dopamine d) Serotonin
- xi. Which part of the ear is responsible for detecting sound waves?
a) Cochlea b) Auditory canal c) Tympanic membrane d) Eustachian tube
- xii. Which hormone regulates water balance by affecting kidney function?
a) Insulin b) ADH (Antidiuretic hormone) c) Estrogen d) Cortisol
- xiii. Which of the following hormones is secreted by the adrenal glands?
a) Thyroxine b) Cortisol c) Insulin d) Estrogen
- xiv. Where does fertilization typically occur?
a) Uterus b) Ovaries c) Fallopian tubes d) Cervix
- xv. What type of blood vessel carries deoxygenated blood back to the heart?
a) Arteries b) Veins c) Capillaries d) Lymph vessels
- xvi. What is the energy molecule required for muscle contraction?
a) Glucose b) ATP c) Oxygen d) Fat
- xvii. In which phase of the cell cycle does DNA replication occur?
a) G1 phase b) S phase c) G2 phase d) M phase
- xviii. Which ion is essential for muscle contraction?
a) Sodium b) Potassium c) Calcium d) Magnesium
- xix. Which part of the female reproductive system produces eggs?
a) Ovary b) Uterus c) Fallopian tube d) Cervix

xx. What is the primary function of the nephron?

- a) Produce urine b) Filter blood c) Regulate blood pressure d) Produce hormones

Section II

2. **Short Answer type questions. Answer any ten.**

10 x 3 = 30

- a. What is the role of the endoplasmic reticulum in the cell?
- b. Describe the structure and function of squamous epithelium.
- c. What is the composition of lymph and how is it formed?
- d. Describe the mechanism of inspiration and expiration.
- e. Describe the structure and function of the spinal cord.
- f. How do thyroid hormones affect metabolism?
- g. What is the function of actin and myosin in muscle contraction?
- h. What are the stages of the cardiac cycle?
- i. What is the role of kidneys in urine formation?
- j. What are the types of joints based on movement?
- k. Describe the process of hemopoiesis.

Section III

3. **Long Answer type questions. Answer any six.**

6 x 5 = 30

- a. Draw a proper label diagram of a nervous tissue & explain its characteristic.
- b. Describe the anatomy and physiology of the heart with a labelled diagram.
- c. Write a note on the respiratory volumes and capacities with definitions.
- d. Describe the endocrine functions of the pituitary and thyroid glands.
- e. Describe the anatomy and physiology of the sympathetic and parasympathetic nervous systems.
- f. Define systole and diastole. Explain blood pressure regulation mechanisms.
- g. Describe the structure and function of the liver and pancreas.
