

Question Paper

Exam Date & Time: 02-May-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Human Anatomy and Physiology [PHA-ER20-14T-S2]

Marks: 80

Duration: 180 mins.

MCQs

Answer all the questions.

Section Duration: 30 mins

20 Q x 1 mark = 20 marks

- 1) The lungs receives blood from (1)
[Pulmonary veins](#)
[Carotid arteries](#)
[Pulmonary arteries](#)
[Aorta](#)
- 2) Which among the following is voluntary muscle? (1)
[Skeletal muscle cells](#)
[Smooth muscles](#)
[Cardiac muscles](#)
[All of them](#)
- 3) Which among the following is a synovial joint? (1)
[Suture](#)
[Synchondroses](#)
[Symphyses](#)
[None of these](#)
- 4) The term which describes "in the middle" is- (1)
[Superficial](#)
[Medial](#)
[Lateral](#)
[Posterior](#)
- 5) The ECG wave which represents ventricular repolarization is (1)
[R](#)
[Q](#)
[T](#)
[P](#)
- 6) Which of the following is known as the 5th cranial nerve? (1)
[Vagus](#)
[Oculomotor](#)
[Facial](#)
[Trigeminal](#)

- 7) Which segment of the neuron that outputs the signal is (1)
- [Axon terminal](#)
[Axon hillock](#)
[Cell body](#)
[Dendrites](#)
- 8) Thyroid stimulating hormone is secreted by (1)
- [Anterior pituitary](#)
[Posterior pituitary](#)
[Hypothalamus](#)
[Gonads](#)
- 9) Which among the following is the function of corticosteroids? (1)
- [Increased glucose utilization](#)
[Stimulation of gluconeogenesis](#)
[Milk production](#)
[Increase metabolic rate](#)
- 10) Testosterone is secreted by (1)
- [Leydig cells](#)
[Seminiferous tubules](#)
[Sertoli cells](#)
[Primary spermatocytes](#)
- 11) The fovea centralis is a part of (1)
- [Iris](#)
[Retina](#)
[Lens](#)
[Cornea](#)
- 12) The hormone responsible for regulating the reabsorption of water in the kidneys is (1)
- [Renin](#)
[Aldosterone](#)
[Antidiuretic hormone \(ADH\)](#)
[Atrial natriuretic peptide \(ANP\)](#)
- 13) 13. Which of the following is the correct sequence of events in muscle contraction? (1)
- [Calcium ions bind to troponin, myosin heads bind to actin, cross-bridge formation, power stroke](#)
[Calcium ions bind to tropomyosin, myosin heads bind to actin, cross-bridge formation, power stroke](#)
[Calcium ions bind to troponin, tropomyosin moves, myosin heads bind to actin, cross-bridge formation](#)
[Calcium ions bind to tropomyosin, tropomyosin moves, myosin heads bind to actin, cross-bridge formation](#)
- 14) Which of the following is NOT a skeletal muscle disorder (1)
- [Myasthenia Gravis](#)
[Muscular dystrophy](#)
[Osteoporosis](#)
[Fibromyalgia](#)
- 15) Which part of the brain is responsible for controlling respiration? (1)

[Cerebellum](#)
[Hypothalamus](#)
[Medulla oblongata](#)
[Corpus callosum](#)

16) The sodium-potassium pump is an example of: (1)

[Simple diffusion](#)
[Facilitated diffusion](#)
[Osmosis](#)
[Active transport](#)

17) Which of the following is an example of a positive feedback loop? (1)

[Regulation of body temperature](#)
[Blood clotting](#)
[Regulation of blood sugar levels](#)
[Regulation of blood pressure](#)

18) What is the function of the endoplasmic reticulum (ER) in a cell? (1)

[Protein synthesis](#)
[Lipid synthesis](#)
[DNA replication](#)
[Energy production](#)

19) Muscle tissue found in the walls of hollow organs like the stomach and intestines is (1)

[Skeletal muscle](#)
[Cardiac muscle](#)
[Smooth muscle](#)
[Striated muscle](#)

20) Which type of epithelial tissue is found in the lining of alveoli ? (1)

[Simple squamous epithelium](#)
[Simple cuboidal epithelium](#)
[Simple columnar epithelium](#)
[Stratified squamous epithelium](#)

Long Answers

Answer all the questions.

6 Q x 5 marks = 30 marks

- 1) Explain the functions of hormones secreted by thyroid and parathyroid glands (5)
- 2) List the location of alpha-adrenergic receptors and explain the effect of their activation. (5)
- 3) Draw and label the chambers of the heart and explain the blood flow through them. (5)
- 4) Describe the physiology of hearing (5)
- 5) Outline the anatomy of lungs with a neat labelled diagram (5)
- 6) Define haemostasis and explain the process of haemostasis. (5)

Short Answers

Answer all the questions.

10 Q x 3 mark = 30 marks

- 1) Write the structural classification of joints and mention their characteristics. (3)
- 2) Write the functions of hypothalamus. (3)
- 3) List the components of female reproductive system and mention their functions. (3)
- 4) Draw and explain the difference between squamous and cuboidal epithelium (3)
- 5) Draw a synovial joint and label the parts. (3)
- 6) Describe the important histological features of small intestine responsible for absorption (3)
- 7) What is the graveyard of RBC's and mention its functions (3)
- 8) What are the important steps in urine formation. (3)
- 9) How is lung function assessed? Name two lung function tests and their application. (3)
- 10) Define phagocytosis, endocytosis and exocytosis (3)

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