

Question Paper

Exam Date & Time: 13-May-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Human Anatomy and Physiology II [PHA-BP201T-S1]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Network of capillaries in the walls of the ventricles responsible for CSF production (1)
- [Interventricular foramina](#)
[Choroid plexus](#)
[Lateral aperture](#)
[Conus Medullaris](#)
- 2) The cytoskeleton of neuron that assist in moving materials between the cell body and axon. (1)
- [Nissl bodies](#)
[Neurofibrils](#)
[Microtubules](#)
[Axon hillock](#)
- 3) In the membrane of synaptic end bulbs, the depolarizing phase of the nerve impulse opens. (1)
- [Voltage gated calcium channel](#)
[Voltage gated sodium channel](#)
[Voltage gated potassium channel](#)
[Voltage gated magnesium channel](#)
- 4) Type of neuronal action potential which involves step-by-step depolarization and repolarization of each adjacent segment of plasma membrane. (1)
- [Saltatory conduction](#)
[Threshold conduction](#)
[Suprathreshold conduction](#)
[Continuous conduction](#)
- 5) Which among the following is NOT TRUE about parasympathetic nervous system. (1)
- [They have shorter pre-ganglionic neurons than the sympathetic system.](#)
[Some cranial nerves are parasympathetic.](#)
[Their ganglia are closer to the organs than the sympathetic ganglia](#)
[The major neurotransmitter is acetylcholine.](#)
- 6) Muscarinic receptors belong to the category of (1)
- [G-protein coupled receptors](#)
[Ligand gated ion-channels](#)
[Tyrosine kinase linked receptors](#)

- 7) [Nuclear receptors](#)
The outmost layer of the eyeball is called (1)
- [Vascular tunic](#)
[Tunica intima](#)
[Tunica media](#)
[Fibrous tunic](#)
- 8) Olfactory tract is formed by the axons of (1)
- [Olfactory receptor cells](#)
[Mitral cells](#)
[Basal cells](#)
[Gustatory cells](#)
- 9) Which of the given combinations are among the primary tastes? (1)
- [Salty, sweet, spicy](#)
[Sour, bitter, fat](#)
[Umami, sweet, spicy](#)
[Sour, sweet, umami](#)
- 10) All the following are respiratory zones except (1)
- [Respiratory bronchioles](#)
[Larynx](#)
[Alveolar ducts](#)
[Alveolar sacs](#)
- 11) The partial pressure of a specific gas in a mixture is described by. (1)
- [Henry's law](#)
[Dalton's law](#)
[Frank-Starling law](#)
[Boyle's law](#)
- 12) Which among the following stimulates absorption of Ca^{++} in DCT (1)
- [ADH](#)
[ANP](#)
[Aldosterone](#)
[Parathormone](#)
- 13) The fluid which is filtered at the glomerulus is called urine when it reaches (1)
- [Distal convoluted tubule](#)
[Ascending loop of Henle of the juxta medullary nephrons](#)
[Renal Calyx](#)
[Collecting duct](#)
- 14) Most of the iodide in the body is present in (1)
- [Pituitary gland](#)
[Pancreas](#)
[Thyroid gland](#)

Adrenal gland

- 15) Which of the following describes the primary mechanism of action of lipid-soluble hormones? (1)
- Activation of second messenger systems
Stimulation of phosphodiesterase
Direct alteration of gene expression
Opening of ion channels
- 16) The hormone that directly decreases blood calcium levels by inhibiting osteoclast activity. (1)
- Parathyroid hormone
Calcitonin
Calcitriol
Thyroid gland
- 17) The hormone which regulates body's response to stress (1)
- Aldosterone
Cortisol
Angiotensin I
Dehydroepiandrosterone
- 18) The hormone NOT secreted from anterior pituitary. (1)
- FSH
Prolactin
TSH
ADH
- 19) From the rete testis, the next segment into which the sperm moves is (1)
- Ductus epididymis
Ductus deferens
Seminal vesicle
Ejaculatory duct
- 20) The contraceptive method that has 100% chance of success rate is (1)
- Condoms
Contraceptive pills
Vaginal cups
Complete abstinence

II Long Answers

Answer all the questions.

- 1) Listing the locations and subtypes of alpha-adrenergic receptors, write any five alpha receptor mediated actions of adrenaline. Illustrate how they are useful in fight and flight response. (10)
- 2) How does insulin get released from pancreas according to the blood glucose changes. Describe the effect of human growth hormone in regulating blood glucose. (10)

III Short Answers

Answer all the questions.

- 1) Describe the anatomy of spinal cord. (5)
- 2) Explain the major factors controlling resting membrane potential of neurons. Describe the depolarising phase and propagation of action potentials in neurons. (5)

- 3) Explain the role of carbonic anhydrase in the absorption of ions in the nephron. (5)
- 4) Briefly explain the anatomy of lungs. (5)
- 5) With a diagram, explain the system of ducts in the male reproductive system. (5)
- 6) Describe the menstrual and pre-ovulatory phase of female reproductive cycle. (5)
- 7) With a neat, labelled diagram describe the structure of uterus and associated structures. (5)

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