Graphic Era HILL UNIVERSITY

GEHU/02[illegible]/9.1.3

End Term (Even) Semester Examination May-June 2025

Roll no.....

Name of the Program and semester: B.Pharm Second Semester
Name of the Course: B.Pharm
Course Code: BP-201T
Time: 3 hour

Maximum Marks: 75

Note:
(i) This question paper contains three sections
(ii) All the sections are compulsory
(iii) All questions should cover COs of the course as per syllabus coverage.

Section-A

MULTIPLE CHOICE QUESTION **20 X 1 = 20 MARKS**

S.N	CONTENTS	
1.	**Which of the following structures is primarily responsible for the regulation of autonomic functions such as heart rate and respiration?** A. Cerebellum B. Medulla oblongata C. Thalamus D. Hypothalamus	CO-1
2.	**In a resting neuron, the resting membrane potential is maintained mainly by which mechanism?** A. Passive diffusion of Na^+ and K^+ ions B. Active transport by Na^+/K^+ ATPase pump C. Facilitated diffusion of Cl^- ions D. Secondary active transport of Ca^{2+} ions	
3.	**Which neurotransmitter is mainly involved at the neuromuscular junction to stimulate skeletal muscle contraction?** A. Serotonin B. GABA (Gamma-Aminobutyric Acid) C. Acetylcholine D. Dopamine	
4.	**Damage to which part of the brain would most likely result in loss of voluntary motor control and muscle coordination?** A. Medulla oblongata B. Hypothalamus C. Cerebellum D. Corpus callosum	
5.	**Which enzyme is secreted in an inactive form and requires activation by enterokinase in the small intestine?** A. Pepsin B. Trypsinogen C. Amylase D. Lipase	CO-2

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6.	Which of the following statements about bile is *incorrect*? A. It is essential for the emulsification of fats. B. It contains digestive enzymes for lipid breakdown. C. It is produced by the liver and stored in the gallbladder. D. It contains bile salts, bilirubin, and cholesterol.	
7.	The primary site of absorption of nutrients in the gastrointestinal tract is: A. Stomach B. Duodenum C. Jejunum D. Colon	
8.	Which hormone stimulates the gallbladder to contract and release bile into the small intestine? A. Secretin B. Gastrin C. Cholecystokinin (CCK) D. Motilin	
9.	Which of the following factors causes a rightward shift of the oxygen-hemoglobin dissociation curve (Bohr effect)? A. Decreased temperature B. Increased pH C. Decreased pCO_2 D. Increased pCO_2	CO-3
10.	The primary respiratory center that controls the basic rhythm of breathing is located in the: A. Pons B. Medulla oblongata C. Cerebral cortex D. Hypothalamus	
11.	Which of the following cells in the alveoli are responsible for the production of pulmonary surfactant? A. Type I pneumocytes B. Type II pneumocytes C. Alveolar macrophages D. Goblet cells	
12.	During forced expiration, which of the following muscles are primarily involved? A. Diaphragm and external intercostals B. Internal intercostals and abdominal muscles C. Sternocleidomastoid and scalenes D. External oblique and serratus anterior	
13.	In the nephron, the majority of reabsorption of water, sodium, and glucose occurs at which specific segment? A. Proximal convoluted tubule (PCT) B. Distal convoluted tubule (DCT)	CO-4

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	C. Loop of Henle D. Collecting duct	
14.	**Which structure prevents the backflow of urine from the bladder into the ureters?** A. Internal urethral sphincter B. External urethral sphincter C. Ureterovesical junction D. Trigone of bladder	
15.	**Which of the following hormones primarily acts through an intracellular receptor mechanism?** A. Adrenaline B. Insulin C. Thyroid hormone (T_3) D. Glucagon	
16.	**Which of the following hormones is synthesized as a prohormone and requires enzymatic cleavage to become biologically active?** A. Insulin B. Cortisol C. Thyroxine (T_4) D. Testosterone	
17.	**Which of the following hormones is primarily responsible for the stimulation of Leydig cells in the testes to produce testosterone?** A. Follicle-stimulating hormone (FSH) B. Luteinizing hormone (LH) C. Gonadotropin-releasing hormone (GnRH) D. Inhibin	CO-5
18.	**During the menstrual cycle, the sharp rise in which hormone triggers ovulation?** A. Progesterone B. Estradiol C. Luteinizing hormone (LH) D. Follicle-stimulating hormone (FSH)	
19.	**In males, the blood-testis barrier is formed by which of the following cells?** A. Leydig cells B. Sertoli cells C. Spermatogonia D. Spermatids	
20.	**The corpus luteum secretes significant amounts of which hormone immediately after ovulation to maintain the uterine lining?** A. Estrogen B. Progesterone C. Human chorionic gonadotropin (hCG) D. Prolactin	

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Section B

Short Questions: Attempt any seven questions. 7x5 = 35 marks

SN	QUESTIONS	CO's
1.	Explain the events involved in the generation and propagation of an action potential.	CO 1
2.	Elaborate on the mechanism of nerve impulse conduction through myelinated and unmyelinated nerve fibers (Saltatory vs Continuous conduction).	CO 1
3.	Explain the neural and hormonal regulation of gastric secretion.	CO2
4.	Discuss the process of deglutition (swallowing) in detail.	CO 2
5.	Describe the mechanics of breathing. Explain the role of muscles in inspiration and expiration with pressure changes.	CO 3
6.	Explain the process of glomerular filtration and factors affecting the glomerular filtration rate (GFR).	CO 3
7.	Describe the mechanism of action of steroid hormones with examples.	CO 4
8.	Write a short note on the role of parathyroid hormone (PTH) in calcium homeostasis.	CO4
9.	Explain the phases of the menstrual cycle with emphasis on the hormonal changes and corresponding structural changes in the endometrium.	CO 5

Section C

Long questions: Attempt any two questions 2x10 = 20 marks

SN	QUESTIONS	CO's
1	Explain the structural and functional changes that occur in the ovary during the ovarian cycle.	CO 5
2	Describe the neurochemical basis of synaptic transmission, including the role of neurotransmitters and synaptic plasticity.	CO 1
3	Describe the hormones of the anterior and posterior pituitary gland along with their functions and regulation.	CO 4