

Exam Date & Time: 19-Apr-2021 (09:30 AM - 12:30 PM)



# MANIPAL ACADEMY OF HIGHER EDUCATION

## Human Anatomy and Physiology-I [PHA-BP101T]

Marks: 75

Duration: 180 mins.

### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

1) Which one of the following is FALSE about gastrin?

1) Secreted by entero-endocrine G cells	2) Promotes secretion of gastric juice	3) Decreases gastric motility	4) Causes distension of stomach
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(1)

2) Saliva contains lingual lipase that is activated in the

1) Alkaline environment	2) Acidic environment	3) Neutral environment	4) None of the above
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(1)

3) In human heart, SA node can generate 100 impulses per minute, but it is usually maintained at around 70 impulses per minute because of

1) Parasympathetic vagal tone	2) Sympathetic acceleratory tone	3) Hypothalamic tone	4) Tone from medulla oblongata
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(1)

4) Which one of the following tissues have sinusoids?

1) Intestine	2) Kidney	3) Red bone marrow	4) Tongue
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(1)

5) Which one of the following is phagocytic in nature?

1) Neutrophils	2) B-lymphocytes	3) T-lymphocytes	4) CD4-lymphocytes
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(1)

6) The inner visceral layer of the serous pericardium, is also called the

1) Myocardium	2) Epicardium	3) Endocardium	4) Fibrous pericardium
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(1)

7) . In ECG, which of the following corresponds to ventricular repolarization?

1) P-wave	2) QRS-wave	3) T-wave	4) U-wave
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(1)

8) Layer of epidermis superficial to stratum basale

1) Stratum granulosum	2) Stratum lucidum	3) Stratum spinosum	4) Stratum corneum
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9) Bone abnormalities in a bone scan may be showed as

1) Grey area	2) Dark area	3) Blue area	4) Yellow area
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(1)

10) Post-mortem examination of a victim's body revealed death during swimming. In such case

1) Rigor mortis will be delayed	2) Rigor mortis can last for days	3) Rigor mortis can set in immediately	4) Rigor mortis may not occur
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(1)

11) Forensic examination revealed fracture in a bone indicating manual strangulation. Identify the bone

1) Hyoid	2) Ribs	3) Clavicle	4) Fibula
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(1)

12) Bone building cells that synthesize and secrete collagen fibers

1) Osteogenic Cells	2) Osteoblasts	3) Osteocytes	4) Osteoclasts
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(1)

13) One of the following substance dissolves a clot by digesting fibrin threads

1) Thrombin	2) Plasmin	3) Fibrin	4) Heparin
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(1)

14) These immune cells kill a wide spectrum of microbes; however lack antigen receptors

1) Helper T cells	2) Cytotoxic T cells	3) Natural killer cells	4) Antigen presenting cells
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(1)

15) Cell mediated immunity may not be effective against

1) few cancer cells	2) intracellular pathogens	3) antigen inside the body fluid	4) tissue transplant
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(1)

16) Which one of the following is not a cause for polycythemia?

1) Epoetin use	2) Dehydration	3) Tissue hypoxia	4) Rehydration
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(1)

17) This organ is the largest single mass of lymphatic tissue in human body

1) Spleen	2) Red bone marrow	3) Thymus	4) Lymph node
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(1)

18) In the large intestine, bacteria converts bilirubin into

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(1)

19) Identify the correct sequence of fluid flow

1)	blood capillaries → interstitial spaces → lymphatic vessels → lymphatic capillaries → lymphatic ducts → subclavian veins	2)	blood capillaries → interstitial spaces → lymphatic capillaries → lymphatic ducts → lymphatic vessels → subclavian veins	3)	blood capillaries → interstitial spaces → lymphatic capillaries → lymphatic vessels → lymphatic ducts → subclavian veins	4)	blood capillaries → interstitial spaces → lymphatic ducts → lymphatic vessels → lymphatic capillaries → subclavian veins	(1)
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20) Erythropoietin increases the number of

1)	white blood cell precursors	2)	red blood cell precursors	3)	thrombocytes	4)	progenitor cells	(1)
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## II Long Answers

Answer all the questions.

- Entry and exit of molecules across the plasma membrane of a human cell is a restricted process. Explain this process with a neat, labelled diagram. Which membrane protein functions as a cell identity marker? (6+3+1) (10)
- With a neat, labelled diagram of gastric glands and cell types, summarize the digestive activities that occur in the stomach. (3+7) (10)

## III Short Answers

Answer all the questions.

- Explain the Frank-Starling law of the heart. Describe its significance on stroke volume and cardiac output (5)
- Discuss the subtypes of synovial joints with relevant examples (5)
- Describe the steps involved in platelet plug formation (5)
- What is creatine? How is creatine phosphate synthesized in muscle fibres? (5)
- How do hormones regulate blood pressure and blood flow? (5)
- Explain the functions of skin (5)
- Define homeostasis. Write a note on the regulation of normal childbirth by a feedback system (5)