51ST SPECIAL BCS EXAM PREPARATION

Anatomy

350 High-Yield MCQs

Questions • Answers • Explanations

সার্বিক সহযোগিতায়-

স্বপন কুমার রায়
এমবিবিএস (ঢাকা মেডিকেল কলেজ)

মোঃ সোহেল
এমবিবিএস (স্যার সলিমুল্লাহ মেডিকেল কলেজ)

অনন আফসান
এমবিবিএস (রংপুর মেডিকেল কলেজ)

Original practice questions organized around the supplied anatomy syllabus.

Continuous numbering: Question 1 to Question 350. Each question has four options and one best answer.

Correct options have a green background and white text.

Topic index and compact answer key included.

Embryology dates are counted from fertilization unless the question states otherwise.

Topic index

Select a topic title to jump to its questions.

Topic	Questions	Count
01 Anatomy of cells	1-16	16
02 Cell divisions	17-30	14
03 Elementary genetics	31-46	16
04 Epithelial tissue	47-60	14
05 Connective tissue proper	61-72	12
06 Skeletal system, bones, cartilage, ligaments and joints	73-96	24
07 Muscular tissues	97-108	12
08 Nervous tissue, central, peripheral and autonomic nervous systems	109-140	32
09 Sense organs	141-160	20
10 Dermatomes	161-170	10
11 Skin	171-180	10
12 Circulatory system: heart, arteries and veins	181-208	28
13 Respiratory system	209-228	20
14 Digestive system and associated organs	229-254	26
15 Urinary system	255-272	18
16 Male and female reproductive systems	273-292	20
17 Endocrine glands	293-306	14
18 General embryology	307-326	20
19 Special embryology of the human body	327-350	24

Anatomy of cells

Questions 1-16 • 16 MCQs

Question 1. Which organelle is the principal site of oxidative phosphorylation in a human cell?

A. Golgi apparatus	B. Lysosome
C. Nucleolus	**D. Mitochondrion**

Answer: D

Explanation: The electron transport chain and ATP synthase lie in the inner mitochondrial membrane. They generate most ATP during aerobic respiration; glycolysis occurs in the cytosol.

Question 2. Which organelle is especially abundant in a cell actively secreting protein, such as a pancreatic acinar cell?

A. Rough endoplasmic reticulum	B. Peroxisome
C. Smooth endoplasmic reticulum	D. Centriole

Answer: A

Explanation: Ribosomes attached to rough endoplasmic reticulum synthesize proteins destined for secretion, membranes or lysosomes. Pancreatic acinar cells produce large amounts of digestive enzymes.

Question 3. Which organelle modifies, sorts and packages proteins received from the endoplasmic reticulum?

A. Centrosome	**B. Golgi apparatus**
C. Mitochondrion	D. Nucleolus

Answer: B

Explanation: The Golgi apparatus processes proteins, including modification of carbohydrate groups, and sorts them into vesicles. These vesicles deliver products to the membrane, lysosomes or extracellular space.

Question 4. Acid hydrolases responsible for intracellular digestion are concentrated in which organelle?

A. Ribosome	**B. Lysosome**
C. Nucleolus	D. Peroxisome

Answer: B

Explanation: Lysosomes contain acid hydrolases that break down engulfed material and worn-out organelles. Their acidic internal environment supports the activity of these enzymes.

Question 5. Which organelle contains catalase and participates in breakdown of hydrogen peroxide?

A. Peroxisome	B. Lysosome
C. Rough endoplasmic reticulum	D. Golgi apparatus

Answer: A

Explanation: Peroxisomes contain oxidative enzymes and catalase. Catalase converts potentially harmful hydrogen peroxide into water and oxygen, while other peroxisomal enzymes participate in fatty-acid metabolism.

Question 6. Where are ribosomal RNA production and initial ribosomal subunit assembly concentrated?

A. Lysosome	B. Golgi apparatus
C. Centrosome	**D. Nucleolus**

Answer: D

Explanation: The nucleolus is a non-membranous nuclear region where much ribosomal RNA is transcribed and ribosomal subunits are assembled. The subunits subsequently pass into the cytoplasm.

Question 7. Which structure forms the basic framework of the plasma membrane?

A. Cellulose wall	**B. Phospholipid bilayer**
C. Triple layer of keratin	D. Single layer of collagen

Answer: B

Explanation: Amphipathic phospholipids form a bilayer with hydrophilic heads facing aqueous fluid and hydrophobic tails facing inward. Membrane proteins provide transport, signaling and attachment functions.

Question 8. The sodium-potassium ATPase normally transports which combination per ATP molecule hydrolyzed?

A. Two sodium ions in and two potassium ions out	**B. Three sodium ions out and two potassium ions in**
C. Two sodium ions out and three potassium ions in	D. Three sodium ions in and two potassium ions out

Answer: B

Explanation: The pump moves three sodium ions out and two potassium ions in against their gradients. This maintains ionic gradients and contributes to the negative resting membrane potential.

Question 9. Which cytoskeletal component forms the core of a typical motile cilium?

A. Microtubules	B. Keratin intermediate filaments
C. Collagen fibrils	D. Actin microfilaments

Answer: A

Explanation: Typical motile cilia have a 9+2 microtubular axoneme. Dynein-mediated sliding between microtubules produces bending; most primary sensory cilia instead have a 9+0 arrangement.

Question 10. Which cytoskeletal component principally supports intestinal microvilli?

A. Neurofilaments	B. Microtubules
C. Actin microfilaments	D. Elastin fibers

Answer: C

Explanation: Microvilli contain bundles of actin filaments and increase absorptive surface area. They differ from cilia, which contain microtubules and may actively move material over a cell surface.

Question 11. Which junction most directly seals the space between adjacent epithelial cells?

A. Gap junction	B. Desmosome
C. Tight junction	D. Hemidesmosome

Answer: C

Explanation: Tight junctions restrict passage between epithelial cells and help maintain apical-basal polarity. Gap junctions communicate, while desmosomes and hemidesmosomes primarily provide mechanical attachment.

Question 12. Direct passage of small ions between neighboring cells occurs through which junction?

A. Focal adhesion	B. Hemidesmosome
C. Gap junction	D. Tight junction

Answer: C

Explanation: Gap junction channels are formed by paired connexons. They permit ions and small molecules to move between cells and help coordinate activity in tissues such as cardiac muscle.