



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

Admission 2018 – Dental Medicine (in English)

Sample grid test questions

BIOLOGY

Reference: *Anatomy and Physiology*, Betts, J. G., DeSaix, P., & Johnson, E., et al. (2013)

For the questions below, choose the only correct answer:

1. A tissue is:

- A. A group of many similar cells;
- B. An organ;
- C. An organelle;
- D. A cell;
- E. A flexible membrane.

R: A, pag. 11

2. Growth is:

- A. The formation of a new organism;
- B. The increase in body size;
- C. Action of the joint of the body;
- D. Anabolic reaction;
- E. Catabolic reaction.

R: B, pag. 16

3. Superior (or cranial) describes a position:

- A. In a limb that is nearer to the point of attachment or the trunk of the body;
- B. Below or lower than another part of the body;
- C. Above or higher than another part of the body;
- D. Closer to the surface of the body;
- E. Further from the surface of the body.

R: C, pag. 24

4. Metabolism can be defined as the:

- A. Adjustment by an organism to external or internal changes;
- B. Process whereby all unspecialized cells become specialized to perform distinct functions;
- C. Process whereby new cells are formed to replace worn-out cells;
- D. Sum of all chemical reactions in an organism;
- E. All of the above.

R: D, pag. 14

5. The heart is within the:

- A. Cranial cavity;
- B. Spinal cavity;
- C. Abdominopelvic cavity;
- D. Thoracic cavity;
- E. All of the above.

R: D, pag. 27



6. Human anatomy is the science of :

- A. The body's structure;
- B. The chemical level of organization;
- C. The living organisms;
- D. The bacteria;
- E. The cellular fluid.

R: A, page 8

7. Gross anatomy is the study :

- A. Microscopic anatomy;
- B. Cytology;
- C. The cells;
- D. The larger structures of the body;
- E. Tissues.

R: C, page 8

8. A cell is :

- A. A substance;
- B. Two or more atoms;
- C. A subatomic particle;
- D. The smallest independent unit of a living organism;
- E. An electron.

R: D, page 10

9. Anabolism is:

- A. A cell;
- B. A process;
- C. A molecule;
- D. A complex chemical;
- E. An organism.

R: B, page 14

10. The pleura is :

- A. The serous membrane that surrounds the lungs;
- B. The serous membrane that surrounds the heart;
- C. Peritoneum;
- D. An organ;
- E. Pericardial cavity.

R: A, page 28

11. Atmospheric air is only about :

- A. 40 percent oxygen;
- B. 60 percent oxygen;
- C. 20 percent oxygen;
- D. 30 percent oxygen;
- E. 90 percent oxygen.

R: C, page 17



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

12. The sagital plane is the plane:

- A. That divides the body vertically;
- B. That divides the body anterior;
- C. That divides the body horizontally;
- D. Front plane;
- E. Transverse plane .

R: B, page 25/26

14. Which of these organs is not considered an accessory digestive structure?

- A. Mouth;
- B. Salivary glands;
- C. Pancreas;
- D. Liver;
- E. Gallbladder.

R: A, page 1088

15. Which of these processes occurs in the mouth?

- A. Ingestion;
- B. Mechanical digestion;
- C. Chemical digestion;
- D. All of the above;
- E. None of the above.

R: D, page 1088

16. Which of these processes occurs throughout most of the alimentary canal?

- A. Ingestion;
- B. Propulsion;
- C. Segmentation;
- D. Absorption;
- E. Defecation.

R: B, page 1096

17. The basic tissue layers of the wall of the alimentary canal are:

- A. Mucosa;
- B. Submucosa;
- C. Muscularis;
- D. Serosa;
- E. All of the above.

R: E, page 1089

18. The chemical breakdown of carbohydrates begins in the:

- A. Mouth;
- B. Esophagus;
- C. Stomach;
- D. Small intestine;
- E. Large intestine.

R: A, page 1093



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

19. The main regions of the small intestine are:

- A. Duodenum;
- B. Jejunum;
- C. Ileum;
- D. All of the above;
- E. None of the above.

R: D, page 1145

20. The main regions of the large intestine are:

- A. Cecum;
- B. Colon;
- C. Rectum;
- D. All of the above;
- E. None of the above.

R: D, page 1145

21. The stomach participates in all digestive activities, except:

- A. Ingestion and defecation;
- B. Digestion of proteins;
- C. Digestion of fats;
- D. Digestion of carbohydrates;
- E. All of the above.

R: B page 1145

22. The extrinsic muscles of the tongue are:

- A. Mylohyoid;
- B. Hyoglossus;
- C. Styloglossus;
- D. Genioglossus;
- E. All of the above.

R: E, page 1098

23. The intrinsic muscles of the tongue are:

- A. Longitudinalis inferior;
- B. Longitudinalis superior;
- C. Transversus linguae;
- D. Verticalis linguae;
- E. All of the above.

R: E, page 1098

24. The major salivary glands are:

- A. Submandibular glands;
- B. Sublingual glands;
- C. Parotid glands;
- D. All of the above;
- E. None of the above.

R: D, page 1099



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

25. Which of the following statements about blood is true?

- A. Blood is about 92 percent water.
- B. Blood is slightly more acidic than water.
- C. Blood is slightly more viscous than water.
- D. Blood is slightly saltier than seawater.
- E. Blood that has released oxygen in the tissues is bright red.

R: C, pages 785-786

26. Which of the following statements about albumin is true?

- A. It draws water out of the blood vessels and into the body's tissues.
- B. It is the most abundant plasma protein.
- C. It is a minor contributor to the osmotic pressure of blood.
- D. It is produced by specialized leukocytes called plasma cells.
- E. All of the above are true.

R: B, page 786

27. Which valve separates the left atrium from the left ventricle?

- A. Mitral;
- B. Tricuspid;
- C. Pulmonary;
- D. Aortic;
- E. Semilunar.

R: A, page 836

28. Which chamber initially receives blood from the systemic circuit?

- A. Left atrium;
- B. Left ventricle;
- C. Right atrium;
- D. Right ventricle;
- E. Coronary sinus.

R: C, page 835

29. Which component of the heart conduction system has the slowest rate of firing?

- A. Atrioventricular node;
- B. Atrioventricular bundle;
- C. Bundle branches;
- D. Purkinje fibers;
- E. Sinoatrial node.

R: C, pages 848-850

30. Which of the following statements is true?

- A. The left and right common carotid arteries both branch off of the brachiocephalic trunk.
- B. The brachial artery is the distal branch of the axillary artery.
- C. The left gastric artery branches off of the common hepatic artery.
- D. The radial and ulnar arteries join to form the palmar arch.
- E. All of the above are true.

R: D, pages 930-938



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

31. Which of the following anatomical structures is not part of the conducting zone?

- A. Pharynx;
- B. Nasal cavity;
- C. Alveoli;
- D. Bronchi;
- E. Trachea.

R: C, pages 1034-1041

32. What is the function of the conchae in the nasal cavity?

- A. Increases surface area;
- B. Exchanges gases;
- C. Maintains surface tension;
- D. Maintains air pressure;
- E. Produces mucus.

R: A, pages 1035-1036

33. The fauces connects which of the following structures to the oropharynx?

- A. Nasopharynx;
- B. Laryngopharynx;
- C. Nasal cavity;
- D. Oral cavity;
- E. Lingual tonsil.

R: D, page 1038

34. Which of the following are structural features of the trachea?

- A. C-shaped cartilage;
- B. Smooth muscle fibers;
- C. Cilia;
- D. Flexible membrane;
- E. All of the above.

R: E, page 1040

35. Which of the following structures is not part of the bronchial tree?

- A. tertiary bronchi;
- B. alveoli;
- C. bronchi;
- D. terminal bronchioles;
- E. respiratory bronchioles.

R: B, page 1041



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

CHEMISTRY

Reference: *Study Guide with Solutions Manual for Hart/Craine/Hart/Hadad's Organic Chemistry: A Short Course, 13th Edition* by H.Hart, C. M. Hadad, L.E. Craine, D. J. Hart

For the questions below, choose the only correct answer:

1. Butane contains how many carbon atoms?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

R: D, page 159

2. What is the name of this compound $\text{HC}\equiv\text{CH}$

- A. Butyne
- B. Butane
- C. Ethene
- D. Ethyne
- E. Hexane

R: D, page 171

3. The organic molecules containing hydroxyl group are called:

- A. Esters
- B. Alcohols
- C. Aldehydes
- D. Ethane
- E. Carboxylic acids

R: B, page 172

4. The organic molecules containing COOH- group are called:

- A. Esters
- B. Alcohols
- C. Carboxylic acids
- D. Aldehydes
- E. Ethane

R: C, page 176

5. Which of the following overall equations represents aerobic cellular respiration?

- A. $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2 \text{ pyruvate} + 2 \text{ ATP}$
- B. $6 \text{ CO}_2 + 6 \text{ H}_2\text{O} + \text{energy} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{ O}_2$
- C. $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2 \text{ lactate} + 2 \text{ ATP}$
- D. $\text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{ O}_2 \rightarrow 6 \text{ CO}_2 + 6 \text{ H}_2\text{O} + \text{ATP}$
- E. $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2 \text{ alcohol} + 2 \text{ CO}_2 + 2 \text{ ATP}$

R: D page 197

6. The repeated units of proteins are:

- A. Glucose units
- B. Amino acids
- C. Fatty acids
- D. Peptides
- E. Esters

R: B, page 199



MINISTERUL EDUCAȚIEI NAȚIONALE

UNIVERSITATEA "TITU MAIORESCU" DIN BUCUREȘTI

Calea Văcărești nr. 187, sector 4, București, cod 040051

Tel.: 021 316 16 46, Fax: 021 311 22 97, e-mail: rectorat@utm.ro, www.utm.ro

PHYSICS

Reference: The Free High School Science Texts: Textbooks for High School Students Studying the Sciences. Physics. Grades 10-12

For the questions below, choose the only correct answer:

1. Light rays are:

- A. Straight lines with arrows to show the path of light.
- B. Curve lines with arrows to show the path of light
- C. Circles that show the path of light
- D. Diagrams that show the path of light
- E. Real

R: A

2. Light rays are used to:

- A. Show the path of light
- B. Show the path that light travels
- C. See an object when light from that object does not enter or eyes
- D. Show the diagram of light
- E. Show a circle of light

R: B

3. Objects cast shadows when:

- A. Light does not shine on them
- B. Light travels in circles
- C. Light shines on them
- D. Light does not exist
- E. Light does not travel in lines

R: C

4. Reflection occurs when:

- A. A light ray travels in straight lines
- B. A light ray bounces into water
- C. A light does not exist
- D. A light ray bounces off a surface
- E. light ray is not bouncing

R: D

5. The Law of Reflection states that:

- A. The angle of incidence are not equal to the angle of reflection
- B. The angle of incidence is equal to the angle of reflection
- C. The angle of incidence is 45^0 and the angle of refelection is 90^0
- D. An angle of incidence does not exist
- E. The angle of reflection is lower than the angle od incidence

R: B

6. Specular reflection occurs when:

- A. Rays are reflected from a smooth, shiny surface
- B. The normal to the surface is different at every point on the surface
- C. Rays are reflected from a rough surface
- D. Light travels at different speeds in different materials.
- E. None of the above

R: A