**­­­­ Admission 2023 – Dental Medicine (in English)**

**Sample of multiple-choice test**

**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:**
2. A group of many similar cells;
3. An organ;
4. An organelle;
5. A cell;
6. A flexible membrane.

*Answer: A (page 11)*

1. **Growth is:**
2. The formation of a new organism;
3. The increase in body size;
4. Action of the joint of the body;
5. Anabolic reaction;
6. Catabolic reaction.

*Answer: B (page 16)*

1. **Superior (or cranial) describes a position:**
2. In a limb that is nearer to the point of attachment or the trunk of the body;
3. Below or lower than another part of the body;
4. Above or higher than another part of the body;
5. Closer to the surface of the body;
6. Further from the surface of the body.

*Answer: C (page 24***)**

1. **Metabolism can be defined as the:**
2. Adjustment by an organism to external or internal changes;
3. Process whereby all unspecialized cells become specialized to perform distinct functions;
4. Process whereby new cells are formed to replace worn-out cells;
5. Sum of all chemical reactions in an organism;
6. All of the above.

*Answer: D (page 14)*

1. **The heart is within the:**
2. Cranial cavity;
3. Spinal cavity;
4. Abdominopelvic cavity;
5. Thoracic cavity;
6. All of the above.

Answer: D (page 27)

1. **Human anatomy is the science of :**
2. The body’s structure;
3. The chemical level of organization;
4. The living organisms;
5. The bacteria;
6. The cellular fluid.

*Answer: A (page 8)*

1. **Gross anatomy is the study :**
2. Microscopic anatomy;
3. Cytology;
4. The cells:
5. The larger structures of the body;
6. Tissues.

*Answer: C (page 8)*

1. **A cell is :**
2. A substance;
3. Two or more atoms;
4. A subatomic particle;
5. The smallest independent unit of a living organism;
6. An electron.

*Answer: D (page 10)*

1. **Anabolism is:**
2. A cell;
3. A process;
4. A molecule;
5. A complex chimical;
6. An organism.

*Answer: B (page 14)*

1. **The pleura is :**
2. The serous membrane that surrounds the lungs;
3. The serous membrane that surrounds the heart;
4. Peritoneum;
5. An organ;
6. Pericardial cavity.

*Answer: A (page 28)*

1. **Atmospheric air is only about :**
2. 40 percent oxygen;
3. 60 percent oxygen;
4. 20 percent oxygen;
5. 30 percent oxygen;
6. 90 percent oxygen.

*Answer: C (page 17)*

1. **The sagital plane is the plane:**
2. That divides the body vertically;
3. That divides the body anterior;
4. That divides the body horizontally;
5. Front plane;
6. Transverse plane.

*Answer: B (pages 25-26)*

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

1. Mouth;
2. Salivary glands;
3. Pancreas;
4. Liver;
5. Gallbladder.

*Answer: A (page 1088)*

**15. Which of these processes occurs in the mouth?**

1. Ingestion;
2. Mechanical digestion;
3. Chemical digestion;
4. All of the above;
5. None of the above.

*Answer: D (page 1088)*

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

1. Ingestion;
2. Propulsion;
3. Segmentation;
4. Absorption;
5. Defecation.

*Answer: B (page 1096)*

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

1. Mucosa;
2. Submucosa;
3. Muscularis;
4. Serosa;
5. All of the above.

*Answer: E (page 1089)*

**18. The chemical breakdown of carbohydrates begins in the**:

1. Mouth;
2. Esophagus;
3. Stomach;
4. Small intestine;
5. Large intestine.

*Answer: A (page 1093)*

**19. The main regions of the small intestine are:**

1. Duodenum;
2. Jejunum;
3. Ileum;
4. All of the above;
5. None of the above.

*Answer: D (page 1145)*

**20. The main regions of the large intestine are:**

1. Cecum;
2. Colon;
3. Rectum;
4. All of the above;
5. None of the above.

*Answer: D (page 1145)*

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

1. Ingestion and defecation;
2. Digestion of proteins;
3. Digestion of fats;
4. Digestion of carbohydrates;
5. All of the above.

*Answer: B (page 1145)*

**22. The extrinsic muscles of the tongue are:**

1. Mylohyoid;
2. Hyoglossus;
3. Styloglossus;
4. Genioglossus;
5. All of the above.

*Answer: E (page 1098)*

**23. The intrinsic muscles of the tongue are:**

1. Longitudinalis inferior;
2. Longitudinalis superior;
3. Transversus linguae;
4. Verticalis linguae;
5. All of the above.

*Answer: E (page 1098)*

**24. The major salivary glands are:**

1. Submandibular glands;
2. Sublingual glands;
3. Parotid glands;
4. All of the above;
5. None of the above.

*Answer: D (page 1099)*

1. **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.

*Answer: C (pages 785-786)*

1. **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.

*Answer: B (page 786)*

1. **Which valve separates the left atrium from the left ventricle?**

A. Mitral;

B. Tricuspid;

C. Pulmonary;

D. Aortic;

E. Semilunar.

*Answer: A (page 836)*

1. **Which chamber initially receives blood from the systemic circuit?**

A. Left atrium;

B. Left ventricle;

C. Right atrium;

D. Right ventricle;

E. Coronary sinus.

*Answer: C (page 835)*

1. **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.

*Answer: C (pages 848-850)*

1. **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 branch 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.

*Answer: D (pages 930-938)*

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

A. Pharynx;

B. Nasal cavity;

C. Alveoli;

D. Bronchi;

E. Trachea.

*Answer: C (pages 1034-1041)*

1. **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.

*Answer: A (pages 1035-1036)*

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

A. Nasopharynx;

B. Laryngopharynx;

C. Nasal cavity;

D. Oral cavity;

E Lingual tonsil.

*Answer: D (page 1038)*

1. **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.

*Answer: E (page 1040)*

1. **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.

*Answer: B (page 1041)*

**CHEMISTRY**

**Reference: *Study Guide with Solutions Manual for Hart/Craine/Hart/Hadad's Organic Chemistry: A Short Course, 13th Edition*** by [H.Hart](https://www.amazon.com/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Harold+Hart&search-alias=books&field-author=Harold+Hart&sort=relevancerank), [C. M. Hadad](https://www.amazon.com/s/ref=dp_byline_sr_book_2?ie=UTF8&text=Christopher+M.+Hadad&search-alias=books&field-author=Christopher+M.+Hadad&sort=relevancerank), [L.E. Craine](https://www.amazon.com/s/ref=dp_byline_sr_book_3?ie=UTF8&text=Leslie+E.+Craine&search-alias=books&field-author=Leslie+E.+Craine&sort=relevancerank),‎ [D. J. Hart](https://www.amazon.com/s/ref=dp_byline_sr_book_4?ie=UTF8&text=David+J.+Hart&search-alias=books&field-author=David+J.+Hart&sort=relevancerank).

**For the questions below, choose the only correct answer:**

1. **Butane contains how many carbon atoms?**
2. 1
3. 2
4. 3
5. 4
6. 5

*Answer: D (page 159)*

1. **What is the name of this compound** http://global.oup.com/uk/orc/biosciences/chembio/crowe3e/student/mcqs/ch06/ch06q003.gif
2. Butyne
3. Butane
4. Ethene
5. Ethyne
6. Hexane

*Answer: D (page 171)*

1. **The organic molecules containing hydroxyl group are called:**
2. Esters
3. Alcohols
4. Aldehydes
5. Ethane
6. Carboxylic acids

*Answer: B (page 172)*

1. **The organic molecules containing COOH- group are called:**
2. Esters
3. Alcohols
4. Carboxylic acids
5. Aldehydes
6. Ethane

*Answer: C (page 176)*

1. **Which of the following overall equations represents aerobic cellular respiration?**
2. C6H12O6 -----> 2 pyruvate + 2 ATP
3. 6 CO2 + 6 H2O + energy -----> C6H12O6 + 6 O2
4. C6H12O6 -----> 2 lactate + 2 ATP
5. C6H12O6 + 6 O2 -----> 6 CO2 + 6 H2O + ATP
6. C6H12O6 -----> 2 alcohol + 2 CO2 + 2 ATP

*Answer: D (page 197)*

1. **The repeted units of proteins are:**
2. Glucose units
3. Amino acids
4. Fatty acids
5. Peptides
6. Esters

*Answer: B (page 199)*

**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:**

1. Straight lines with arrows to show the path of light.
2. Curve lines with arrows to show the path of light
3. Circles that show the path of light
4. Diagrams that show the path of light
5. Real

*Answer: A*

**2.Light rays are used to:**

1. Show the path of light
2. Show the path that light travels
3. See an object when light from that object does not enter or eyes
4. Show the diagram of light
5. Show a circle of light

*Answer: B*

**3.** **Objects cast shadows when:**

1. Light does not shine on them
2. Light travels in circles
3. Light shines on them
4. Light does not exist
5. Light does not travel in lines

*Answer: C*

**4. Reflection occurs when:**

1. A light ray travels in straight lines
2. A light ray bounces into water
3. A light does not exist
4. A light ray bounces off a surface
5. light ray is not bouncing

*Answer: D*

**5. The Law of Reflection states that:**

1. The angle of incidence are not equal to the angle of reflection
2. The angle of incidence is equal to the angle of reflection
3. The angle of incidence is 450 and the angle of reflection is 900
4. An angle of incidence does not exist
5. The angle of reflection is lower than the angle of incidence

*Answer: B*

**6. Specular reflection occurs when:**

1. Rays are reflected from a smooth, shiny surface
2. The normal to the surface is different at every point on the surface
3. Rays are reflected from a rough surface
4. Light travels at different speeds in different materials.
5. None of the above

*Answer: A*