**Admission 2023 – 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. **The frontal plane**:
   1. divide the body into right and left sides
   2. produce images referred to as cross sections
   3. divide the body into upper and lower portions
   4. divide the body into cranial and caudal portions
   5. is often referred to as a coronal plane

*Answer: E (page 26)*

1. **The nucleus and mitochondria share one of the following features:**
   1. are involved in the synthesis of proteins
   2. have a membrane that consist in two adjacent lipid bilayers membranes
   3. are organelles that produce cellular energy
   4. are used in the phagocytosis
   5. are lacking in neurons

*Answer: B (pages101, 102 and 107)*

1. **The body cavities closed to the exterior of the organism are lined by:**
   1. cutaneous membranes
   2. synovial membranes
   3. serous membranes
   4. mucosal membranes
   5. fibrous membranes

*Answer: C (page 139, 140)*

1. **Which of the following does NOT represent a layer of epidermis?**
   1. stratum lucidum
   2. stratum spinosum
   3. stratum basale
   4. stratum corneum
   5. pigmentation

*Answer: E (pages 183, 187)*

1. **Patella is:**
   1. a sesamoid bone
   2. a long bone
   3. a short bone
   4. a flat bone
   5. an irregular bone

*Answer: A (page 219)*

1. **A freely mobile joint is classified as:**
   1. asynarthrosis
   2. an amphiarthrosis
   3. a diarthrosis
   4. a cartilaginous joint
   5. a fibrous joint

*Answer: C (page 358)*

1. **The sarcoplasmicreticulum stores, releases and retrieves:**
   1. proteins
   2. actin
   3. myosin
   4. calcium ions
   5. acetylcholine

*Answer: D (page 409)*

1. **The antagonist muscle of biceps brachii is:**
   1. tricepsbrachii
   2. quadriceps femorii
   3. extensor digitorum
   4. flexor digitorumsuperficialis
   5. flexor digitorumprofundus

*Answer: A (page 447)*

1. **A group of neuron cell bodies (somata) will form in the peripheral nervous system:**
   1. a nerve
   2. a tract
   3. a nucleus
   4. a ganglion
   5. a lymph node

*Answer: D (page 508)*

1. **The pituitary gland is attached to the:**
   1. thalamus
   2. hypothalamus
   3. epithalamus
   4. subthalamus
   5. brain stem

*Answer: B (page 563)*

1. **The cranial nerve X (vagus nerve) does NOT innervate:**
   1. the heart
   2. the larynx
   3. the stomach
   4. the adrenal gland
   5. the small intestine

*Answer: D (page 662)*

1. **Which of the following hormones is NOT produced by the anterior pituitary?**
   1. adrenocorticotropichormone
   2. follicle-stimulating hormone
   3. prolactin
   4. growth hormone
   5. antidiuretic hormone

*Answer: E (pages 735, 736)*

1. **The least abundant plasma protein is represented by:**
   1. albumin
   2. alpha globulins
   3. beta globulins
   4. immunoglobulins
   5. fibrinogen

*Answer: E (page 786)*

1. **From the right ventricle, the blood flows into:**
   1. the coronary sinus
   2. the superior vena cava
   3. the aorta
   4. the pulmonary trunk
   5. the inferior vena cava

*Answer: D (page 836)*

1. **From the stomach and the intestines, the blood flows into:**
   1. the aorta
   2. the hepatic vein
   3. the portal hepatic vein
   4. the inferior vena cava
   5. the lumbar veins

*Answer: C (page 957)*

1. **The largest lymphatic trunk of the human body is:**
   1. the right lymphatic duct
   2. the right subclavian vein
   3. the left lymphatic duct
   4. the left subclavian vein
   5. the thoracic duct

*Answer: E (page 979, 980)*

1. **The respiratory zone begins where the terminal bronchioles join:**
   1. a bronchial tree
   2. a capillary vessel
   3. a respiratory bronchiole
   4. an alveolar duct
   5. a cluster of alveoli

*Answer: C (page 1041)*

1. **Which of the following does NOT represent a function of the stomach?**
   1. begins chemical breakdown of proteins
   2. lubricates food and passageways
   3. possesses antimicrobial functions
   4. absorbs some fat-soluble substances
   5. secretes intrinsic factor required for vitaminB12 absorption in small intestine

*Answer: B (page 1093)*

1. **In humans, the normal urine volume is:**
   1. < 50 mL/day
   2. 50 – 500 mL/day
   3. 300 – 500 mL/day
   4. 1 – 2 L/day
   5. > 2.5 L/day

*Answer: D (page 1204)*

1. **The blood–testis barrier is created by:**
   1. the tunica albuginea
   2. the tunica vaginalis
   3. the scrotum
   4. the Sertolli cells
   5. the spermatogonia

*Answer: D (page 1283)*

**CHEMISTRY**

**Reference: The Free High School Science Texts: Textbooks for High School Students Studying the Sciences. Chemistry. Grades 10 – 12, November 2008**

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

1. **In what form is glucose stored?**
2. Glucagon
3. Vitamins
4. Glycogen
5. Nucleotides
6. Fatty acids

*Answer: C (page* *198)*

1. **The charge on any ion depend upon the gain or loss of:**
2. Electron
3. Protons
4. Neutrons
5. Positrons
6. Atoms

*Answer:A (page 54)*

1. **Double covalent bond refers to the sharing of:**
2. One electron
3. One pair of electrons
4. Two electrons
5. Three electrons
6. Two pairs of electrons

*Answer: E (page 67)*

**4.** **Which one of the following will make a basic solution when added to water?**

1. Carbon dioxide
2. Sulphur dioxide
3. Sodium hydroxide
4. Sodium chloride
5. Potassium fluoride

*Answer: C (page 268)*

1. **Reaction HBr + KOH → H2O + KBr represents:**
2. Redox reaction
3. Acid-base reaction
4. Addition reaction
5. Polymerization reaction
6. Elimination reaction

*Answer: B (page 270)*

1. **Reaction CH4 + Cl2 → CH3Cl + HCl represents**:
2. Redox reaction
3. Acid-base reaction
4. Addition reaction
5. Substitution reaction
6. Elimination reaction

*Answer: D (page 282)*

1. **When two amino acid monomers are close together, they may be joined to each other by:**
2. Covalent bond
3. Ionic bond
4. Peptide bond
5. Hydrogen bond
6. Metallic Bond

*Answer: C (page 200)*

1. **In a 111.7-gram sample we have …. number of moles of iron (Fe):**
2. 1
3. 2
4. 3
5. 4
6. 5

*Answer: B (page 236)*

**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. **Parallel incident rays become parallel reflected rays after hitting a surface that is:**
2. with bumps
3. curved
4. flat
5. uneven
6. rough

*Answer C (page 135)*

1. **When light moves from one medium into another, it changes of:**
2. speed
3. composition
4. colour
5. surface normally
6. frequency

*Answer*: *A (page 137)*

1. **A resistor converts electrical energy into other forms of energy that are producing:**
2. rearrangements inside the ionic lattice
3. variations of the cross-selection area
4. variations of the length of the resistor
5. waves
6. heat

*Answer: E (page 202)*

1. **The force to move the charge through an electric circuit is provided by:**
2. the light bulb
3. the lens
4. the resistors
5. the potential difference
6. the connecting wires

*Answer: D (page 192)*

1. **Converging lenses are:**
2. not transparent
3. thicker at the edges than in the middle
4. spreading out the light rays after passing through
5. thicker in the middle than at the edges
6. thinner in the middle than at the edges

*Answer: D (page 327)*

1. **Considering the microscope compounds, we confirm that a microscope has:**
2. a two-lens system
3. a three-lens system
4. a convergent–divergent lens system
5. a divergent lens system
6. a four- lens system

*Answer: A (page 350)*

1. **What can you say about real electric batteries?**
2. they lighten
3. they are sources of potential difference
4. they do not possess internal resistance
5. they provide changes to the circuit
6. they do not oppose to the charge flow

*Answer:B (page 440)*

1. **There are some electric conductors we call non-ohmic conductors because they:**
2. not change resistance as their temperature changes
3. they are like nichrome wires conductors
4. have plots of voltage against current diagrams that are curved
5. have plots of voltage against current diagrams that are linear
6. are different from the light bulbs

*Answer:C (page 431)*