



**CRAWFORD UNIVERSITY**  
**FAITH CITY IGBESA, OGUN STATE**

**COLLEGE OF NATURAL AND APPLIED SCIENCES.**

**2016/2017 HARMATTAN SEMESTER EXAMINATIONS**

**DEPARTMENT: BIOLOGICAL SCIENCES**

**UNIT: BIOCHEMISTRY**

**COURSE CODE: BCH 213 COURSE UNITS: 2 TIME ALLOWED: 2 HOURS**

**COURSE TITLE: INTRODUCTION TO CELLULAR BIOCHEMISTRY**

**INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO (2) IN SECTION B**

**SECTION B**

1. Fill in the gaps or blank spaces with the correct answers
  - (i) The \_\_\_\_\_ are fluid and move about rapidly by diffusion in their own layers.
  - (ii) \_\_\_\_\_ act as cell identity markers or 'name tags'
  - (iii) The more \_\_\_\_\_ the fatty acid tails are, the more fluid the membrane is.
  - (iv) In the nuclear envelope, there are two (2) membranes: (i) the outer and (ii) the inner membranes, which enclose the \_\_\_\_\_.
  - (v) Golgi apparatus acts as sites for the synthesis of \_\_\_\_\_ and \_\_\_\_\_
  - (vi) Steroid hormone synthesizing cells have mitochondria with \_\_\_\_\_ or \_\_\_\_\_ cristae.
  - (vii) The outer mitochondrial membrane contain more \_\_\_\_\_ fatty acid and less \_\_\_\_\_
  - (viii) The inner membrane of the mitochondrion is rich in one type of phospholipid called \_\_\_\_\_
  - (ix) \_\_\_\_\_ contain oxidative enzyme called catalase.
  - (x) \_\_\_\_\_ are short fibrous, rod-shaped organnels.
  
2. Write True or 'T' if the statement is True, and False or 'F' if the statement is not true or is false.
  - (i) spindles originate from the centrosphere or pericentriolar satellites.
  - (ii) Melanin are membrane – bound granules present in some cells
  - (iii) Fine granules inside melanocytes represent the binding site for calcium ions ( $Ca^{++}$ ).
  - (iv) The fine granules contain RNA, DNA and enzymes for Krebs cycle.
  - (v) Glycogen particles are very scarce in muscle cells, plant cells etc.
  - (vi) Microtubules function as cellular cytoskeleton.
  - (vii) Golgi apparatus acts as sites for synthesis of fats and lipids.
  - (viii) The golgi apparatus is involved in the packaging activity of the cell
  - (ix) Nucleolus is involved in DNA synthesis
  - (x) Agranular or smooth endoplasmic reticulum contains enzymes for fat metabolism.

3. Put a circle round the most appropriate or correct answer.

- (i) The nucleus in most somatic cells is normally in the
- (a) Metaphase stage
  - (b) diakinesis stage
  - (c) interphase stage
  - (d) Prophase stage
- (ii) The nuclear pores are about
- (a)  $200-500\text{\AA}$  in diameter
  - (b)  $500-700\text{\AA}$  diameter
  - (c)  $60-80\text{\AA}$  in diameter
  - (d)  $70-80\text{\AA}$  diameter
- (iii) The nucleolus is made up of
- (a) heterochromatin
  - (b) euchromatin
  - (c) Margination chromatin
  - (d) nucleolar associated chromatin
- (iv) Nucleolonema is the
- (a) dark (electron dense) area of the nucleolus
  - (b) clear (electron lucent) area of the nucleolus
  - (c) diffuse area of the nucleolus
  - (d) nucleolar associated chromatin of the nucleolus
- (v) The type of rough endoplasmic reticulum (RER) that denote pathologic (disease) condition is.
- (a) antibody
  - (b) transfer vessicle
  - (c) multiregulated
  - (d) microsome
- (vi) Lipids are resynthesized at
- (a) Golgi apparatus
  - (b) Smooth endoplasmic reticulum
  - (c) rough endoplasmic reticulum
  - (d) lysosomes

- (vii) During staining, especially of the golgi apparatus, basophilia is usually caused by the presence of
- (a) glycogen
  - (b) lipids
  - (c) ribosomes
  - (d) multivesicular bodies
- (viii) The membrane-bound organelle comprising of three units is.
- (a) golgi apparatus
  - (b) lysosome
  - (c) Mitochondrion
  - (d) Chloroplast
- (ix) This enzyme is found in the mitochondrial matrix
- (a) nicotinamide adenine dicucleotide
  - (b) adenylate kinase
  - (c) monoamine oxidase
  - (d) malatede dehydrogenase
- (x) The primary lysosome functions in
- (a) detoxification of hydrogen peroxide ( $H_2O_2$ )
  - (b) internal digestion
  - (c) digestion of own products
  - (d) breakdown of red blood cells