

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Autumn Examinations 2015/16**

<b>Module Title:     Anatomy &amp; Physiology of the Cell (CA)</b>
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**Module Code:**                **PHOL6005**

**School:**                        Science & Informatics

**Programme Title:**        Bachelor of Science (Honours) in Herbal Science – Year 1

**Programme Code:**        **SHERB\_8\_Y1**

**External Examiner(s):**    Olivia Corcoran

**Internal Examiner(s):**    Ms Richenda Kiernan

**Instructions:**                **Answer Four Questions**  
                                      **All Questions carry equal marks**

**Duration:**                    2 Hours

**Sitting:**                        Autumn 2015 /2016

**Requirements for this examination:**

<p><b>Note to Candidates:</b> Please check the Programme Title and the Module Title to ensure that you have received the correct examination. If in doubt please contact an Invigilator.</p>
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Q1. (a) List 5 functions of Proteins (5 marks)

(b) Describe with the aid of labelled diagrams the levels of protein structure. (15 marks)

(c) Proteins are the most abundant macromolecule. Justify this statement. (5 marks)

Q2. (a) Distinguish between saturated and unsaturated lipids, in terms of their structure and characteristics. (5 marks)

(b) Write a short note on the structure and function of each of the following: (10 marks)

(i) steroids

(ii) phospholipids

(c) Discuss the structure and functions of DNA and RNA. (10 marks)

Q3.(a) Draw a clearly labelled diagram of eukaryotic animal cell. (10 marks)

(b) How do animal and plant cells differ? (5 marks)

(c) Write a detailed note on the fluid mosaic model. (10 marks)

Q4. Write descriptive notes on 5 of the following:

- (i) Nucleus
  - (ii) Chloroplast
  - (iii) Mitochondria
  - (iv) Vacuole
  - (v) Endoplasmic Reticulum
  - (vi) Vesicles
  - (vii) Golgi Apparatus
  - (viii) Ribosomes
- (25 marks)

Q5. (a) What is Homeostasis? (5 marks)

(b) Discuss the structure and function of an organ system studied by you and its role in homeostasis. (20 marks)

Q6. (a) Outline what is meant by the cell theory. (5 marks)

(b) Explain the theory of cell fractionation and outline how it is achieved. (10 marks)

(c) Write a note on the light microscope and the electron microscope. (10 marks)