

EASTERN UNIVERSITY, SRI LANKA

EXTERNAL DEGREE

FIRST EXAMINATION IN SCIENCE 1996/97 (June 2004) Repeat

EXZL 101 CELL BIOLOGY AND BIOCHEMISTRY

Time: 02 hours

Answer the **first** and any **three** questions only.

(Illustrate your answers with clear, labelled diagrams where necessary)

1.
  - a. State the cell theory.
  - b. Name three bio-organic molecules that are found in the plasma membrane.
  - c. What is meant by the bioelectric point of aminoacids?
  - d. What happens when an enzyme is heated at 55°C?
  - e. Name the stain that is commonly used for staining ectoplasm.
  - f. What is meant by the amphipathic property of lipid molecule?
  - g. Name the phase at which chromatids are arranged at the middle of the cell.
  - h. List the main functions of protein.
  - i. What is saponification number?
  - j. Name the storage material in an animal cell and indicate the organ in which it is stored.
2.
  - a. Explain the term 'metabolism'.
  - b. Comment briefly on the glucose metabolism in an animal cell.

Contd/2

3. Write briefly on any **two** of the following:

- a. Fluid mosaic model
- b. Mitosis
- c. Active molecular transport.

4.

- a. Draw a clear labelled diagram of an animal cell illustrating the following organelles.
  - i. Mitochondria
  - ii. Nucleus
  - iii. Golgi complex
  - iv. Endoplasmic reticulum
  - v. Lysosomes

b. Describe the structure and function of **three** of the above organelles.

5. Write short notes any **two** of the following:

- a. DNA structure
- b. Protein synthesis
- c. Enzyme specificity

6.

- a. Define the terms: magnification and resolving power of a light microscope.
- b. List the differences between light and electron microscope.