

UNIVERSITY OF RUHUNA

BACHELOR OF SCIENCE IN FISHERIES AND MARINE SCIENCES DEGREE

Level IV Semester I Examination, July/August 2017

FAQ 1131 – Cell Biology

Time – 1 ½ hours

Answer all questions. Underline the correct answer in Part I. Use the given space for answering Part II questions

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Part I

1. Which statement about eukaryotic chromosomes is *not* true?
 - a. Sometimes consist of two chromatids
 - b. Sometimes consist of a single chromatid
 - c. Normally possess a single centromere
 - d. Consist of proteins
 - e. Clearly visible as defined bodies under the light microscope.

2. Which statement about cytokinesis is true?
 - a. In animals, a cell plate is formed
 - b. In plants, it is initiated by furrowing of the cell membrane
 - c. Generally, it immediately follows mitosis
 - d. In plant cells, actin and myosin play an important role
 - e. It is the division of the nucleus.

3. Apoptosis
 - a. Occurs in all cells
 - b. Involves the dissolution of the cell membrane
 - c. Does not occur in an embryo
 - d. Involves a series of programmed events associated with ultimate death of a cell
 - e. Is not involved with cancer.

4. In meiosis,
 - a. meiosis II reduces the chromosome number from diploid to haploid
 - b. DNA replicates between meiosis I and II
 - c. The chromatids that make up a chromosome in meiosis II are identical
 - d. Each chromosome in prophase I consists of four chromatids
 - e. Homologous chromosomes separate from one another in anaphase I

5. A plant has 12 diploid chromosomes while an egg cell of that plant has 5 chromosomes. The most probable explanation of this observation is
- Normal mitosis
 - Normal meiosis
 - Nondisjunction in meiosis I
 - Nondisjunction in meiosis I and II
 - Nondisjunction in mitosis

Part II

6. What are the major organizational patterns of cells?
7. Briefly describe the role of the plasma membrane of a cell.
8. What is the importance of cell fractionation in studying the cell organelles?

9. Mention six differences between an animal cell and a plant cell

10. What are the four events that occur during cell division?

11. Describe the sub phases of interphase

12. What are major features that can be observed during prophase?

13. What is meant by cytokinesis?

14. What is the importance of Chiasmata during cell division?

15. Give three examples for meiotic errors in cell division

16. "Meiosis leads to genetic diversity". Give reasons

17. Indicate the major difference between meiotic and mitotic cell divisions

18. Describe the methods of cell death