



MUEO

# MOI UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR  
(ACADEMIC AFFAIRS, RESEARCH & EXTENSION)

## UNIVERSITY EXAMINATIONS 2017/2018 ACADEMIC YEAR THIRD YEAR FIRST SEMESTER EXAMINATION

### FOR THE DEGREE OF BACHELOR OF SCIENCE, BACHELOR OF EDUCATION SCIENCE AND BACHELOR OF SCIENCE IN BIOCHEMISTRY

**COURSE CODE:** ZOO 312

**COURSE TITLE:** CELL AND MOLECULAR BIOLOGY

**DATE:** 8<sup>TH</sup> FEBRUARY, 2018      **TIME:** 8.00 A.M. – 11.00 A.M

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• SEE INSIDE

THIS PAPER CONSISTS OF (3) PRINTED PAGES

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MOI UNIVERSITY

2017/2018 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF  
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BACHELOR SCIENCE IN BIOCHEMISTRY

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TIME: 3 HOURS

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**INSTRUCTIONS TO CANDIDATES**

1. Answer ALL questions in section A and ANY TWO in section B.
  2. Illustrate your answers with well labeled diagrams wherever necessary.
  3. Duration of the examination: 3 hours
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**SECTION A: Answer ALL questions (40 marks)**

1. Briefly discuss the function of Golgi vesicle in relation to its structure (6marks)
2. i) List any 3 properties of Ion channels (3marks)  
ii) Distinguish between carrier proteins and channel proteins (3marks)
3. i) Briefly describe the cell theory (2marks)  
ii) Briefly describe clues that led Watson and Crick to build the correct model of DNA molecule (4marks)
4. i) List any four cell adhesion Molecules (2marks)  
ii) Briefly explain the difference between tight junctions and gap junction (4marks)
5. i) Briefly explain the effect of failure of G1 check point in DNA repair mechanisms (3marks)  
ii) Briefly explain the functions of kinases and cycline in cell cycle (3marks)

6. i) Briefly explain on the fidelity of DNA replication despite addition of nucleotide by DNA polymerase only to a primer strand (3marks)
- ii) Briefly discuss the expectation accuracy of okazaki fragments and its effects on overall accuracy of DNA replication (3marks)
7. List any four consequences of incorporating porins into the plasma membrane (4marks)

**SECTION B: Answer any TWO questions in this section (2x15=30)**

8. Discuss process involved in amplification of DNA using polymerase chain reaction (PCR) (15marks)
9. Discuss the types of the phospholipids found in plasma membrane (15marks)
10. Discuss the electron transport chain in mitochondria (15marks)

11 JAN 2018  
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