



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY – APRIL 2015 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF NATURAL SCIENCES (BIOLOGY)

WEEKEND PROGRAMME

BIO 310: DEVELOPMENTAL BIOLOGY

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| Date: April 2015 | Duration: 2 Hours |
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| Instructions: Answer Question ONE and any other TWO Questions. |
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- Q1. a) Define the following terms as used in developmental Biology
- i) Genetics
 - ii) Morphogenesis
 - iii) Molecular Biology
 - iv) Cell Biology
- (4 marks)**
- b) List the six basic review remarks we know about organisms.
- (7 marks)**
- c) Explain.
- i) Inorgamy Vs. Anisogamy **(2 marks)**
 - ii) Polyspermy **(2 marks)**
- d) List and explain briefly the two differential mechanism in evolution of multicellularity and developmental mechanism.
- (4 marks)**
- e) Explain briefly the control dogma highlighting the two major processes.
- (6 marks)**
- f) List FOUR molecular techniques that would help tell information about expression of the gene.
- (4 marks)**
- g) In Research approaches list the Anatomical Approaches to Developmental Biology.
- (2 marks)**
- Q2. Explain Developmental Biology Question that arise from the major objectives.
- (7 marks)**

- Q3. Cleavage is a series of mitotic divisions whereby the enormous volume of egg cytoplasm is divided into numerous smaller, nucleated cells. Explain giving examples of each.
- a) Holoblastic cleavage (10 marks)
 - b) Meroblastic cleavage (10 marks)
- Q4. Explain the entire process of gastrulating. (20 marks)
- Q5. Describe the
- a) Circle of life, clearly explaining the different stages of development. (10 marks)
 - b) Describe the process of gametogenesis in both scenarios. (10 marks)

END