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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOCHEMISTRY.

**SZL 3205: DEVELOPMENTAL BIOLOGY**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. State the functional roles of the following processes associated with fertilization
2. Cortical reaction (1 mark)
3. Acrasomal reaction (1 mark)
4. Name any four (4) patterns of cleavage and animals in which they are found (4 marks)
5. Outline three steps that ensure species specificity during fertilization (3 marks)
6. State the structures on the spermatozoon formed from the following organelles and state one major function of each;
7. Nucleus (2 marks)
8. Centriole (2 marks)
9. Sketch a simple fate mat of amphioxus gastrula at early blastopore (5 marks)
10. Explain briefly the developmental significance of two major roles of melosis in gametogenesis (2 marks)
11. Name extra embryonic membranes of the chick and state one function of each (6 marks)
12. State and explain forces involved in formation of blastocoels during blastula formation (4 marks)

**QUESTION TWO (20 MARKS)**

Describe the sequence of events and mechanisms of gastrulation in sea urchin (20 marks)

**QUESTION THREE (20 MARKS)**

Describe two ways by which amnion and chorion are formed in mammals and state their functions. (20 marks)

**QUESTION FOUR (20 MARKS)**

1. Describe the process of spermiogenesis (10 marks)
2. Discuss the properties of embryonic field (10 marks)