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National Open University Of Nigeria Plot 91, Cadastral Zone, NnamdiAzikiwe Expressway, Jabi - Abuja Faculty of Science JANUARY/FEBRUARY 2018 EXAMINATIONS COURSE CODE: BIO 413 CREDIT UNITS: 2 COURSE TITLE: DEVELOPMENTAL BIOLOGY TIME ALLOWED: 2 Hours INTRUCTION: Answer question ONE (1) and any other THREE (3) questions

1a. What is differentiation? (2marks)

b. Explain the six general questions scrutinized by developmental biologists. (6marks)

c. List the five sequential stages of the first meiotic division during gametogenesis. (5marks)

d. Name the three accessory glands that contain varieties of energy substrates of the ejaculates. (6marks)

e. What are the major functions of meiosis? (4marks)

f. Define gastrulation (2marks)

2a. What are the three important approaches to studying embryology? (6marks)b. Explain sperm attraction at a distance. (9marks)

3. The penetration of the egg cell by the chromosome containing part of the sperm cell causes a reaction which prevents additional sperm cells from entering the egg. Explain how this process happen. (15marks)

4a. Explain the term organogenesis. (3marks)

b. Describe the process of gastrulation in amphibians. (12marks)

5a. Explain the following terms: i. Isolecithal ii. Telolecithaliii.Centrolecithal (6marks)

b. Discuss the function of placenta in mammals (9marks)