



National Open University Of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
OCTOBER/NOVEMBER, 2016 EXAMINATION

COURSE CODE: BIO 413

COURSE TITLE: DEVELOPMENTAL BIOLOGY

TIME ALLOWED: 2 Hours

INSTRUCTION: Answer any four questions

1. (a) Indicate the six general questions scrutinized by developmental biologists (6 marks)
(b) Give an account of **any four** methods of assisted reproductive technology (12 marks)
(c) Enumerate and describe the types of placenta in animals based on the following:
 - i. Histology (4 marks)
 - ii. Distribution of villi (3 marks)
2. (a) Outline the germ layers that produce the basic animal tissues (3 marks)
(b) Write **short notes** on the following birth control methods:
 - (i) Copper T IUD (Intrauterine device) (4 marks)
 - (ii) Depo-provera (4 marks)
 - (iii) Contraceptive sponge (4 marks)
3. (a) List the steps involved in the interaction of sperm and egg in sea urchin (5 marks)
(b) With the help of a well labeled diagram describe the structure of a placenta (10 marks)
4. (a) Define the term fertilization (3 marks)
(b) Outline the various types of eggs based on the distribution and amount of yolk (6 marks)
(c) In a tabular form distinguish between mitotic and meiotic cell divisions (8 marks)
5. (a) List the functions of a placenta (3 marks)
(b) Write **short notes** on the following:
 - (i) Amnion (4 marks)
 - (ii) Chorion (4 marks)
 - (iii) Allantois (4 marks)
6. (a) Enumerate the functions of Sertoli cells (3 marks)
(b) Outline the patterns of embryonic cleavage (4 marks)
(c) Describe the different types of primary egg membranes you know (8 marks)