

B.Sc. DEGREE EXAMINATION - NOVEMBER 2016
BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY
THIRD SEMESTER

COURSE : MAJOR CORE
PAPER : DEVELOPMENTAL BIOLOGY
TIME : 3 HOURS

MAX. MARKS: 100

SECTION A

ANSWER ALL THE QUESTIONS.

(10 x 3 = 30)

1. Differentiate between
 - a. Epigenesis and Pangenesis
 - b. Gradual and Complete metamorphosis
2. What is meant by totipotency?
3. Fill up the blanks
 - a. ----- type of eggs are found in Insects
 - b. -----ions play a major role in egg activation
 - c. ----- hormone of the human placenta has immune suppressive activity
4. Define the following: a) Amphimixis b) Vitellogenesis
5. Give example for each of the following:
 - a. Vital stain
 - b. Amphitoky
 - c. Spiral cleavage
6. What is meant by cell lineage? Comment on the outcome of cell lineage studies
7. Differentiate between notogenesis and mesogenesis
8. What are the following?
 - a) GIFT
 - b) Organizer
 - c) Discoidal meroblastic cleavage
9. Comment on the significance of grafts and transplants.
10. Write the features of the following
 - a) Metadiscoidal placenta
 - b) Stereoblastula
 - c) Arrhenotokous parthenogenesis

SECTION B

ANSWER ANY FIVE QUESTIONS.

(5 x 6 = 30)

11. Describe the process of metamorphosis in Frog.
12. Classify eggs based on the amount of yolk.
13. Write notes on the extra embryonic membranes of Chick. Comment on their functions.
14. Elaborate the different methods of fate map construction.
15. Give an illustrated account of the development of heart in frog.
16. Comment on surrogate motherhood.
17. Write short notes on:
 - a) Spermiogenesis
 - b) Induced ovulation

SECTION C

ANSWER ANY TWO QUESTIONS.

(2 x 20 = 40)

18. What is regeneration? Explain the types and mechanism of regeneration in *Amphibia* with suitable illustrations.
19. Describe with diagrams the major events that occur in the process of fertilization.
20. Give an account of morphogenetic movements in chordate embryos.
21. With the help of suitable diagrams describe the development of eye in Frog.
