

B SC BIOTECHNOLOGY
Third Semester
Developmental Biology
(BBT- 303)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8
Question no. 1 is compulsory.

1. Describe the process of previtellogenesis of growth phase of ovum. 10
2. What is acrosomal reaction? Describe with the help of diagram. 10
3. What do you mean by blastulation? Write about the blastulation in different types of eggs on the basis of amount of yolk. 10
4. Draw the structure of sperm of human and describe all its parts. 10
5. Describe the process of germination of pollen and course of pollen tube. How the fertilization occurs after that, write briefly. 10
6. What do you understand by germination of seeds? What are the factor that affect in germinaton of seeds. 10
7. What is parthenogenesis? Describe briefly about different types of artificial parthenogenesis. 10
8. Describe molecular basis of cell differentiation. 10

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Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. Choose the correct answer:

1×10=10

1. Fertilization process that occurs inside the female is known as

- a) external fertilization
- b) internal fertilization
- c) amphimixis
- d) none of the above

2. Formation of sperms is known as

- a) oogenesis
- b) spermatogenesis
- c) spermatophytes
- d) oogonia

3. Which of the following is secreted by egg?

- a) fertilizing
- b) antifertilizin
- c) auxin
- d) none of the above

4. Which of the following is a phase of oogenesis?

- a) multiplication phase
- b) growth phase
- c) maturation phase
- d) all of the above

5. Amphimixis is

- a) The fusion of male and female pronuclei
- b) movement sperm towards the egg
- c) secretion of fertilizin by sperm
- d) secretion of antifertilizin by egg

6. When more than one sperm fertilizes the ovum then it is known as

- a) polygamy
- b) polyclonal
- c) polyspermy
- d) none of the above

7. Zonapellucida is a membrane of the

- a) egg b) sperm c) zygote d) none of the above

8. Which of the following is the correct order of different stages of development

- a) zygote-embryo-morula-blastula-gastrula
b) embryo-zygote-morula-blastula-gastrula
c) embryo-zygote-morula-gastrula-blastula
d) zygote-embryo-blastula-morula-gastrula

9. macromere is present in _____ half of the zygote

- a) animal b) vegetal
c) both of the above d) none of the above

10. Nervous system is formed from

- a) ectoderm b) mesoderm c) endoderm d) none of the above

II. Match the following

1X5=5

- | | |
|-------------------|------------------|
| 1) helobial type | a) plants |
| 2) apomixis | b) mitosis |
| 3) antifertilizin | c) skin |
| 4) cleavage | d) endosperm |
| 5) ectoderm | e) female gamete |

III. State true or false

1X5=5

- a) Primary endosperm nucleus is triploid.
b) sperms and eggs are diploid
c) During seed germination seed coat becomes permeable to gases like oxygen and carbon di oxide.
d) Excretory system is formed from mesoderm
e) Pollen tubes are formed from pollen grain
