

(6 pages)

Reg. No. :

Code No. : 30383 E Sub. Code : CMZO 51

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2025.

Fifth Semester

Zoology — Main

Core — DEVELOPMENTAL ZOOLOGY

(For those who joined in July 2021 and 2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. At which part of male sperm structure contains microtubules?
(a) Head (b) Tail
(c) Middle piece (d) Neck
2. Yolk deposition is also known as _____.
(a) Vitellogenesis (b) Spermatogenesis
(c) Oogenesis (d) Gastrulation

3. Amniocentesis technique is used to identify _____ in embryo development.
(a) morphological abnormalities
(b) anatomical abnormalities
(c) genetic abnormalities
(d) biochemical abnormalities
4. IUI stands for
(a) Inter-uterine Insemination
(b) Intra-uterine Infertility
(c) Intra-uterine Insemination
(d) Intra-uterine Introduction
5. By the end of the 3rd day the heart of chick attains the _____. This is considered to be the first step in the development of heart in all vertebrates.
(a) S-shaped condition
(b) V-shaped condition
(c) T-shaped condition
(d) L-shaped condition

6. According to gradient theory, high metabolic rate in the animal pole region, gradually _____ towards the vegetal pole take place.

- (a) increasing (b) decreasing
(c) equalising (d) optimizing

7. The _____ is a thin membrane which eventually encloses the entire developing embryo in a fluid-filled sac.

- (a) Chorion (b) Allantois
(c) Amnion (d) Anamniotes

8. Placenta acts temporarily as an _____ since it produces certain hormones.

- (a) exocrine organ
(b) endocrine organ
(c) both endo and exocrine organ
(d) mesocrine organ

9. Acetabularia is a good example to study _____.

- (a) stabilization (b) metamorphosis
(c) segmentation (d) regeneration

10. Consumption of progesterone pill causes _____ infertility.

- (a) male
(b) female
(c) both male and female
(d) transgeni

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Define term parthenogenesis. Add note on its significances.

Or

(b) Explain the process of spermatogenesis in human beings.

12. (a) Write an account on male infertility.

Or

(b) Describe an account on artificial insemination.

13. (a) Analyze the process of formation of heart in chick.

Or

(b) Explain the term organizer and its types.

14. (a) List out extra embryonic membrane in chick.

Or

(b) Explain the formation of yolk sac and its fate in chick.

15. (a) Illustrate nuclear transplantation in Acetabularia.

Or

(b) What is Regeneration? Give types of regeneration with example.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the basic events of fertilization.

Or

(b) Explain the process of Oogenesis in human beings.

Page 5 Code No. : 30383 E

17. (a) Specify the steps involved in an in vitro fertilization (IVF).

Or

(b) Write an account on test tube baby.

18. (a) Highlight the different types of morphogenetic movements in gastrulation.

Or

(b) Analyze the process of formation of brain in chick.

19. (a) Explain different physiological functions of placenta.

Or

(b) Discuss hormonal control of amphibian metamorphosis.

20. (a) How surgical methods of contraception is used to help in birth control?

Or

(b) Enumerate different hormonal contraceptives of birth control.

Page 6 Code No. : 30383 E