

(i) Printed Pages : 2

Roll No.

(ii) Questions : 9

Sub. Code :

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Exam. Code :

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B.A./B.Sc. (General) 5th Semester
(2123)

ZOOLOGY (ZOO-501)

(Development Biology)

Paper—I

Time Allowed : Three Hours]

[Maximum Marks : 36

Note :— Attempt **FIVE** questions in all, including Question No. 1 which is compulsory and selecting **ONE** question from each Unit.

I. Describe the following :

- (a) Vitellogenesis.
- (b) Spermiogenesis.
- (c) Cortical reaction.
- (d) Periblastula.
- (e) Competence.
- (f) Cytoplasmic determinants.
- (g) Nieuwkoop center and its significance.
- (h) Syncytiotrophoblast.

8×1

UNIT-I

- II. (a) Explain the process of spermatogenesis through diagram only. 5
- (b) What is spermiation ? Discuss its importance. 2
- III. (a) Discuss in detail the role of follicle and sub-testicular cells in gametogenesis. 4
- (b) Explain egg polarity. 3

UNIT-II

- IV. (a) Discuss the prerequisites for fertilization to happen. 3
- (b) Explain in detail the acrosome reaction. 4
- V. (a) Discuss briefly the types of cleavage patterns in lecithal eggs. 4
- (b) Discuss in detail various planes and patterns of cleavage. 3

UNIT-III

- VI. (a) What is fate map ? Draw fate map of bird epiblast. 3
- (b) What is an organizer ? Discuss in detail its significance with suitable example. 4
- VII. Discuss various morphogenetic movements and their role in gastrulation in chick blastodisc. 7

UNIT-IV

- VIII. (a) What is Yolk sac ? Discuss its importance. 2
- (b) What is placenta ? Discuss its structure and various types in mammals. 5
- IX. Explain in detail the metamorphic changes and their control in *Herdmania*. 7