

AQ - 822

First Semester M. Sc. I. Zoology Examination

Paper -- IV

GENES AND DIFFERENTIATION

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) All questions are compulsory.
(2) Illustrate your answers with suitable diagrams wherever necessary.
(3) All questions carry equal marks.

1. Explain the followings :—

- (a) Cell commitment.
- (b) Germ cell determination in amphibians.
- (c) Organizers.
- (d) Germ cell migration in mammals.

OR

- (e) Characteristics of cell differentiation.
- (f) Germ cell determination in insects.
- (g) Germ cell migration in birds.
- (h) Germ cell migration in amphibians. 16

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P.T.O.

2. Describe establishment of body axes in mammals.

OR

Give an account of body axes formation in *Drosophila*. 16

3. Describe the followings :—

- (i) Hormonal methods of contraception.
- (j) Physical barriers as means of contraception.
- (k) Sperm antibody.
- (l) Surgical method of contraception in males.

OR

- (m) Surgical method of contraception in females.
- (n) Intrauterine contraceptive devices (IUCDs).
- (o) Developmental constraints.
- (p) Teratogenic effects of xenobiotics. 16

4. Give an account of differentiation of gonads.

OR

Describe the Secondary sex determination in mammals. 16

5. Give an account of the followings :—

- (q) Embryonic stem cells.
- (r) Stem cell markers.
- (s) Fanconi anemia.
- (t) Use of genetically modified stem cells in experimental gene therapies.

OR

- (u) Haematopoietic stem cells.
- (v) Cord-blood stem cells.
- (w) Hirschsprung's disease.
- (x) Stem cells and Diabetes. 16

