

2016

ZOOLOGY

( Major )

Paper : 4-1

( **Developmental Biology** )

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Write True or False : 1×7=7

(a) The fully formed gastrula has a cavity called the archenteron, which is lined by endoderm.

(b) Aristotle is honoured as the father of embryology.

(c) The cells which are destined to develop into gametes are called primordial germ cells.

(d) The principal components of egg yolk are proteins, phospholipids and fats.

(e) Fertilizin is a glycoprotein present in the egg.

- (f) The increasing diversification of form and function in an organism is called differentiation.
- (g) Presence of excessive amount of yolk leads to meroblastic cleavage.

2. Write short notes on the following :  $2 \times 4 = 8$

- (a) Spermiogenesis
- (b) Haploid parthenogenesis
- (c) Holoblastic cleavage
- (d) Types of egg

3. Write on any *three* of the following :  $5 \times 3 = 15$

- (a) Functions of placenta
- (b) Primary organizer
- (c) Embryonic induction
- (d) Significance of artificial stimulus of parthenogenesis
- (e) Vitellogenesis

4. Discuss in brief the fertilizin and antifertilizin reaction. What is its significance in the process of fertilization?  $7 + 3 = 10$

Or

What do you mean by gametogenesis?  
Differentiate between oogenesis and spermatogenesis.  $2 + 8 = 10$

5. Describe the various stages of embryonic development of heart in vertebrates with suitable diagrams. 10

*Or*

What do you understand by foetal membranes? Describe the function of amnion and allantois with special reference to chick embryo. 3+7=10

6. What do you understand by formative movements or morphogenetic movements? Describe briefly the different types of morphogenetic movements occurring during gastrulation. 2+8=10

*Or*

What do you understand by fate map? Discuss the fate map of amphibian blastula. 2+8=10

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