

2014

ZOOLOGY

(Major)

Paper : 4.1

Full Marks : 60

Time : 2½ hours

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

1. Write True or False : 1×7=7

- (a) The process by which the zygote develops into a multicellular and well organized being is called embryogenesis.
- (b) In oogenesis, 2 polar bodies are formed at the end of the meiotic division.
- (c) The interstitial cells in testes secrete estrogens.
- (d) The formation and deposition of yolk is called spermiogenesis.
- (e) The vegetal pole of the ovum marks the anterior end of the embryo.

(2)

- (f) In centrolecithal eggs, cleavages are spiral.
- (g) The process by which an embryonic tissue influences other tissues to differentiate is called activation.

2. Write short notes on : 2×4=8

- (a) Primordial germ cells
- (b) Corpus luteum
- (c) Chemotaxis
- (d) Neural induction

3. Write on any *three* of the following : 5×3=15

- (a) Blastulation
- (b) Vitellogenesis
- (c) Cyclic parthenogenesis
- (d) Functions of yolk
- (e) Fate map construction in chick

4. Describe the process of spermatogenesis with the help of suitable diagrams. What factors control spermatogenesis? 8+2=10

Or

Discuss how the ovum is activated during the process of fertilization. 10

(3)

5. Discuss the physiological and biochemical changes during cleavage. 10

Or

What is gastrulation? Describe the different morphogenetic movements which occur during gastrulation. 2+8=10

6. Describe the various stages of embryonic development of heart in vertebrates with suitable illustrations. 10

Or

What is placenta? Write an account on physiology and functions of placenta. 2+(4+4)=10
