2019

ZOOLOGY — HONOURS

Second Paper

(Unit – I)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***question no.*** **1** and ***any four*** from the rest.

1. Answer ***any five*** questions of the following : 2×5

(a) What is ABP? Mention its function.

(b) What is Nieuwkoop Centre? State its significance.

(c) What is Koller's Sickle cell?

(d) State the role of noggin during embryogenesis.

(e) What is resact? State its role.

(f) Differentiate between holoblastic and meroblastic cleavage.

(g) State the differences between endotheliochorial and haemoendothelial placenta.

(h) Differentiate epiboly and emboly.

2. (a) Describe the process of spermateleosis with diagram.

(b) Illustrate the pre-vitellogenic growth phase of oogenesis. (3½+1½)+5

3. (a) Mention different types of morphogenetic movements with suitable diagram.

(b) State the characteristics of embryonic stem cells. Why stem cell is considered as pleuripotent rather than totipotent? 5+(3+2)

4. (a) State the classical experiment of Spemann and Mangold on organizer-reaction. Comment on the conclusion derived from the experiment.

(b) State the advantages and disadvantages of IVF in human. (4+2)+(2+2)

5. (a) What is zona radiata? Why it is so called?

(b) State the significance of Grey-crescent area.

(c) What is subgerminal cavity? How it is formed? (2+1)+3+(2+2)

6. (a) Briefly describe the procedure of spermatozoa cryopreservation. Comment on its utility.

   (b) State the roles of β-catenine and goosecoid in the activity of embryonic organizer. (3+2)+(2½+2½)

7. (a) Classify egg on the basis of quantity and distribution of yolk with suitable examples.

   (b) Mention the significance of meiotic block and unequal cytokinesis during oogenesis. 6+(2+2)

8. (a) Classify placenta on the basis of arrangement of chorionic villi.

   (b) State the functions of allantois and yolk sac. 6+4

9. Write notes on : 2½×4

   (a) Ultrastructure of ovum

   (b) Cortical reaction in Sea-urchin

   (c) Role of primitive streak in gastrulation of chick.

   (d) Evolutionary significance of the development of amnion.
