

This question paper contains 3 printed pages.]

Your Roll No.

1343

A

B.Sc. (Hons.)/I

ZOOLOGY—Paper II

(Developmental Biology)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 55

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

*Attempt five questions in all including
Question No. 1 which is compulsory*

1. (a) Distinguish between the following :

- (i) Heteroplastic and Xenoplastic transplantation.
- (ii) Superficial and interstitial implantation.
- (iii) Neoteny and progenesis.
- (iv) Malformations and disruptions. 6

(b) Define the following terms :

- (i) Capacitation.
- (ii) Golgi nest.
- (iii) Heteromorphosis. 3

(c) Name the scientists :

- (i) Who first discovered the mammalian follicle.
- (ii) Father of modern embryology. 2

[P.T.O.]

- (d) Indicate the exact location of :
- (i) Latebra.
 - (ii) Cells of Rauber.
 - (iii) Amnioblast cells.
 - (iv) Hauser's layer. 2
- (e) Fill in the blanks with appropriate words :
- (i) is the hormone required for amphibian metamorphosis.
 - (ii) Neural fold make contact in the midline and fuse, beginning from the point corresponding to the region of embryo.
 - (iii) Lamp brush chromosomes can be observed in stage in amphibian oocyte. 3
- (f) Name the germ layers from which following are derived :
- (i) Adrenal Cortex.
 - (ii) Endothelium.
 - (iii) Thyroid.
 - (iv) Gonads.
 - (v) Lens of the eye.
 - (vi) Lining of stomodaeum. 3
2. (a) Describe the process of gastrulation in frog. 7
- (b) Why do you consider blastopore of frog similar to primitive streak of chick. 2

3. (a) Define Placenta. Describe the various types of placentae on histological basis. 1, 5
(b) Add a note on the functions of placenta. 3
4. (a) What is an embryonic inductor. Discuss the role of roof of archenteron in embryonic induction. 5
(b) What are transgenic animals. Why is the cloning of transgenic animal important. 4
5. (a) Define spermiogenesis. Describe the process in detail with the help of suitable diagrams. 6
(b) Distinguish between spermatogenesis and oogenesis. 3
6. (a) Give various morphological and physiological changes which take place during the metamorphosis in Amphibians. 6
(b) Discuss the fate of mesoderm during development. 3
7. (a) Write short notes on any *three* of the following :
(i) Pre formation theory.
(ii) Effect of yolk on cleavage.
(iii) Thelytoky.
(iv) IVF technique. 3, 3, 3