

57

Total No. of Printed Pages—6

4 SEM TDC ZOO M 3 (N/O)

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(May)

ZOOLOGY

(Major)

Course : 403

(Developmental Biology)

(New Course)

Full Marks : 48

Pass Marks : 14

Time : 2 hours

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

Answer Question No. **1** and *any three* from the rest

1. (a) Choose the correct answer :

1×4=4

(i) Mitochondria of the spermatozoa are concentrated in

(1) acrosome

(2) head

(3) neck

(4) tail

(2)

- (ii) Cortical granules are chemically
- (1) mucopolysaccharide
 - (2) phospholipid
 - (3) protein
 - (4) nucleic acid
- (iii) In epithelio-chorial placenta, chorionic trophoblast is in direct contact with
- (1) uterine connective tissue
 - (2) uterine epithelium
 - (3) uterine endothelium
 - (4) uterine blood
- (iv) Superficial cleavage is found in
- (1) isolecithal egg
 - (2) centrolecithal egg
 - (3) telolecithal egg
 - (4) None of the above

(3)

- (b) Distinguish between the following pairs (any four) : $2 \times 4 = 8$
- (i) Spermatozoa and Spermatid
 - (ii) Spiral and Radial cleavage
 - (iii) Pre-vitellogenesis and Post-vitellogenesis
 - (iv) Invagination and Involution
 - (v) Morula and Blastula
2. Define fertilization. Explain the mechanism of fertilization. What do you know about polyspermy? $2+6+4=12$
3. What do you mean by cleavage or segmentation and blastulation? Write a note on different cleavage plane with suitable diagram. $2+2+6+2=12$
4. What is organogenesis? Discuss the process of development of eye with suitable diagram. $2+7+3=12$
5. What do you mean by extraembryonic membrane? Discuss the structure and functions of different extraembryonic membranes of birds with suitable diagram. $2+6+4=12$

(Turn Over)