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**SUBJECT CODE NO: - S-6046**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**M.Sc. (Sem –IV) (Zoology (Old))**  
**Examination May / June - 2023**  
**Developmental Biology-511**

[Time: 3:00 Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

N. B

- 1) Part A is compulsory
- 2) Attempt any five questions from part B
- 3) Draw neat labelled wherever necessary

**Part –A**

Q1 Attempt the following MCQ

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- 1) How many polar bodies formed during oogenesis from single I<sup>ry</sup> oocyte?  
a) 2 b) 1 c) 3 d) 4
- 2) During spermatogenesis acrosome is formed from  
a) Mitochondria b) golgi complex c) Lysosome d) centriole
- 3) Fertilizin is glycoprotein found on the surface of -----  
a) Mature egg b) mature sperm c) on both a & b d) None
- 4) Blastopore is found in which stage of frog development  
a) Morula b) blastula c) gastrula d) Nurula
- 5) The embryo is covered by a set of membrane called  
a) Amniota b) somato pleura  
c) extra embryonic membrane d) foetal membrane
- 6) Which of the following hormone controls metamorphosis  
a) Adrenalin b) thyroxin c) oxytocin d) FSH
- 7) What is the type of human placenta  
a) Mesolecithal b) Epitheliochorial c) Haemochorial d) endotheliochorial
- 8) Apoptosis is a type of -----  
a) Cell growth b) cell death c) cell division d) cell communication
- 9) Mamma's have -----type of sex determination  
a) xx/xy b) xx/xo c) zz/zy d) Genic

- 10) Degenerative changes takes place during
- a) only in metamorphosis
  - b) in ageing only
  - c) both a & b
  - d) parthenogenesis

**Part –B**

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- Q2 Describe structure of mammalian ovum. Add a note on types of eggs
- Q3 Describe process of spermatogenesis in mammal
- Q4 Describe cleavage add a note on patterns of cleavage
- Q5 Give an account on sex determination & differentiation
- Q6 Describe Spemann’s organizer experiment
- Q7 Give an account on nuclear transplantation & cloning in mammals
- Q8 What is Apoptosis? Give its brief information