

2016

( 6th Semester )

ZOOLOGY

Paper : ZL-X

( **Developmental Biology** )

Full Marks : 55

Time : 2½ hours

( PART : B—DESCRIPTIVE )

( Marks : 35 )

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

1. What is the basic difference between *in vivo* and *in vitro* fertilization? Describe the gamete binding and acrosomal reaction in mammalian *in vivo* fertilization. 2+5

Or

What do you mean by cleavage? Enlist the different types of cleavage with at least one example of each. 2+5

2. What is blastula? Describe blastulation in frog. 2+5

Or

What do you mean by extra-embryonic membrane? Describe different types of extra-embryonic membranes in chick with their physiological functions. 2+5

3. Write short notes on the following :  $3\frac{1}{2} \times 2 = 7$   
(a) Involution  
(b) Invagination

Or

Discuss the concept of organizer with Spemann's experiment. 7

4. What do you understand by metamorphosis? Discuss the amphibian metamorphosis and its hormonal regulation. 2+5

Or

Define regeneration. Write a descriptive note on the regeneration in vertebrates. 2+5

5. Define stem cells. Write on different types of stem cells with at least one example of each. 2+5

Or

Write a descriptive note on the concept of transgenesis. 7

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Subject Code : ZOO/VI/10

Booklet No. **A**

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Date Stamp .....

**To be filled in by the Candidate**

DEGREE 6th Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2016**  
Subject .....  
Paper .....

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**To be filled in by the Candidate**

DEGREE 6th Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2016**

Roll No. ....

Regn. No. ....

Subject .....

Paper .....

Descriptive Type

Booklet No. B .....

**INSTRUCTIONS TO CANDIDATES**

- 1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
- 2. This paper should be ANSWERED FIRST and submitted within 45 minutes of the commencement of the Examination.**
- 3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

Signature of  
Scrutiniser(s)

Signature of  
Examiner(s)

Signature of  
Invigilator(s)

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**ZOO/VI/10**

**2 0 1 6**  
( 6th Semester )

**ZOOLOGY**

Paper : ZL-X

**( Developmental Biology )**

( PART : A—OBJECTIVE )

( Marks : 20 )

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

SECTION—A

( Marks : 5 )

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

**1.** The part of development which occurs before birth/hatching is known as

(a) prenatal development ( )

(b) embryonic development ( )

(c) postnatal development ( )

(d) Both (a) and (b) ( )

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( 2 )

2. Cleavage differs from normal cell division because cleavage does not have

(a) G1 and G2 phase ( )

(b) S phase ( )

(c) M phase ( )

(d) None of the above ( )

3. Archenteron or primitive gut is well evident in

(a) zygote ( )

(b) blastula ( )

(c) gastrula ( )

(d) adult animal ( )

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( 3 )

4. Which of the following occurs in *Hydra* regeneration?

(a) Epimorphosis ( )

(b) Morphallaxis ( )

(c) Stem cell mediated ( )

(d) Compensatory regeneration ( )

5. Juvenile hormone in insect is secreted by

(a) corpora allata ( )

(b) prothoracic gland ( )

(c) cuticle ( )

(d) rectal gland ( )

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( 4 )

SECTION—B

( Marks : 15 )

Write short notes on the following in not more than  
5 to 8 sentences each : 3×5=15

1. Parthenogenesis

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( 5 )

2. Fate maps

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( 6 )

**3. Embryonic induction**

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( 7 )

4. Complete metamorphosis

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( 8 )

5. Teratogen

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