

This question paper contains 4 printed pages]

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S. No. of Question Paper : 1855

Unique Paper Code : 223653

E

Name of the Paper : Developmental Biology and Physiology-Animals (LSPT-614)

Name of the Course : B.Sc. (Prog.) Life Science

Semester : VI

Duration : 3 Hours

Maximum Marks : 75

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

Question No. 1 is compulsory. There are two sections, Section A and Section B.

Attempt two questions from each Section. Attempt five questions in all.

Draw neat labelled diagrams wherever necessary.

1. (a) Define the following :

(i) Rigor mortis

(ii) Amphimixis

(iii) Teratology

(iv) Synapse.

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(b) Differentiate between the following :

(i) Zona pellucida and Corona radiata

(ii) Myelinated and Unmyelinated nerve fiber

P.T.O.

(iii) PCT and DCT

(iv) Morula and Blastula

(v) Depolarisation and Repolarisation.

10

(c) Expand the following Abbreviations :

(i) ACh

(ii) LH

(iii) GIP

(iv) ICM

(v) RAAS.

5

(d) Fill in the blanks :

(i) The anterior thickened end of the primitive streak is called .....

(ii) At ..... stage of meiosis oocyte is released from the ovary of mammals.

(iii) ..... hormone is secreted by Leydig cells.

(iv) Lack of or decrease of insulin hormone receptors on cells result in .....

(v) Forward propulsion of food in the digestive tract is by ..... movements.

(vi) Theory of germplasm was proposed by .....

6

(e) State Von Baer's law.

2

**Section A**

2. (a) Describe the development of frog from fertilized egg to gastrula formation with suitable diagrams. 7
- (b) Define cleavage. Discuss the different types of cleavage exhibited by various animal groups. 5
3. (a) What is a cortical reaction ? Discuss its role to block polyspermy. 7
- (b) Describe the structure of a mature sperm. 5
4. Write short notes on any *two* of the following :
- (i) Types of eggs
- (ii) Fate map
- (iii) Growth phase of oogenesis
- (iv) Acrosomal reaction. 6,6

**Section B**

5. Describe the process of digestion and absorption of carbohydrates and proteins in the gastrointestinal tract. 12

*Or*

What is cardiac cycle ? Discuss the pressure and volume changes in the cardiac cycle.

P.T.O.

6. (a) Describe the oxygen-haemoglobin dissociation curve. How does the change in pH and temperature affect the curve ? 7
- (b) Discuss the role of contractile and regulatory proteins in muscle contraction. 5
7. Write short notes on any *two* of the following :
- (i) Glomerular filtration
- (ii) Action potential
- (iii) Adenohypophysis
- (iv) Saltatory conduction. 6,6