

**3/EH-63 (iii) (Syllabus-2015)**

**2018**

**( October )**

**ZOOLOGY**

**( Elective/Honours )**

**THIRD PAPER**

**( Animal Physiology, Endocrinology and  
Biochemistry )**

*Marks : 56*

*Time : 3 hours*

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

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

**1. Write in brief on any three of the following :**

**4×3=12**

- (a) Double-helical structure of DNA**
- (b) Water-soluble vitamins**
- (c) Reflex action**
- (d) Cofactors and coenzymes**
- (e) Functions of blood**

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2. Discuss with suitable diagrams the role of tracheal system of vertebrate lung in gaseous exchange. Explain the mechanism of carbon dioxide and oxygen transport in mammals.  $5+6=11$

3. Describe the structure of a synapse in vertebrate neural system. Explain the mechanism of synaptic transmission through a nerve in vertebrate.  $4+7=11$

4. Describe the structure of adrenal gland. What are the hormones secreted by this gland? Mention their functions. Discuss the diseases associated with abnormal secretion of adrenal hormones.  $3+4+4=11$

5. Describe the steps involved in tricarboxylic acid cycle, and name the enzymes and coenzymes involved in each step. What is the energy gain for each acetyl CoA oxidized by this cycle?  $10+1=11$

6. What is an active site of an enzyme? Describe the mechanism of enzyme action. Add a note on the factors affecting enzyme activity.  $1+6+4=11$

7. Classify proteins with suitable examples. Add a note on the significance of proteins.  $7+4=11$

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Continued

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8. Write short notes on any two of the following :  $5\frac{1}{2}\times 2=11$

- (a) Nucleotides and polynucleotides
- (b) Ultrastructure of skeletal muscle
- (c) Functions of gonadal hormones
- (d) Structure of mammalian heart

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