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B.Sc. 4th Semester (New Scheme)

Examination, May-2016

BIOTECHNOLOGY

Paper-BT-404

Mammalian Physiology

23300763

Time allowed : 3 hours]

[Maximum marks : 40

*Note : Question No. 1 is compulsory. Attempt four questions from Question No. 2 to 9 i.e. one from each unit.*

1. (i) Name bile salts and bile pigments released from liver. What is their role in digestion process ? 2
- (ii) Differentiate between fetal hemoglobin and adult hemoglobin. 2
- (iii) Write down role of various cells present in blood. 2
- (iv) Differentiate between isotonic and isometric contraction. 2
- (v) Enumerate hormones released from adrenal gland. 2

**Unit-I**

2. (i) Enumerate various salivary glands in human being and their role in digestion process. 2½
- (ii) How lipid digestion and absorption takes place in gastrointestinal tract ? 5

3. (i) How oxygen dissociation curve is affected by pH, oxygen and carbondioxide concentration. What is Bohr's effect ? 2½
- (ii) Explain the role of enzymes and hormones involved in protein and carbohydrate digestion. 5

### Unit-II

4. (i) Describe in detail the intrinsic and extrinsic mechanism of blood coagulation. 5
- (ii) What kind of defects will occur due to Iron, folic acid and vitamin B12 deficiencies during haemoposis. 2½
5. (i) What is autorhythmicity of heart. How cardiac muscle differs from skeletal muscle in repolarization. Name defects in heart functioning. 5
- (ii) Write a short note on plasma protein and their role. 2½

### Unit-III

6. (i) Describe various physical, chemical and electrical events during skeletal muscle contraction. 5
- (ii) Differentiate between cardiac, smooth and skeletal muscle. 2½

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7. (i) Explain Ornithine cycle (with diagram). What is countercurrent mechanism and what is its significance in concentrating urine? 4
- (ii) What is threshold stimulus? Differentiate between action potential and graded potential. 3½

#### Unit-IV

8. (i) Explain the mechanism of generation and propagation of nerve impulse (with diagram). 5
- (ii) Write down the mechanism of action of aldosterone, anti diuretic hormone (ADH) and testosterone. 2½
9. (i) Describe diseases/metabolic defects occurring due to hypo and hyper-secretions of thyroid, parathyroid and adrenal gland. 5
- (ii) How glucose level is maintained in body? 2½

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