



**PBC-003-1013014-A** Seat No. \_\_\_\_\_

**B. Sc. (Sem. III) (CBCS) Examination**

**November / December - 2018**

**BT - 301 : Metabolism of Biomolecules**

**Faculty Code : 003**

**Subject Code : 1013014-A**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- 1 (a) Answer the Question : (One Mark Each) 4
- (1) Lock and key model was proposed by \_\_\_\_\_
  - (2) Enzymes are made of \_\_\_\_\_
  - (3) Removal of phosphoryl group is catalyzed by \_\_\_\_\_
  - (4) The allosteric inhibitors of an enzyme participate in \_\_\_\_\_ regulation.
- (b) Answer the Question - Any **One** out of two : 2
- (1) Define cofactors and coenzyme.
  - (2) What is allosteric regulation?.
- (c) Answer the Question - Any **One** out of Two : 3
- (1) Write the properties of enzymes.
  - (2) Explain Line Wiever Burk equation.
- (d) Answer the Question - Any **One** out of Two : 5
- (1) Derive Michalis Menton equation
  - (2) Explain Irreversible and reversible enzyme inhibition mechanism.

- 2 (a) Answer the Question : (One Mark Each) 4
- (1) \_\_\_\_\_ is the central metabolic pathway of cell.
  - (2) TPP is \_\_\_\_\_
  - (3) TCA takes place in \_\_\_\_\_
  - (4) End product of odd chain fatty acid degradation is \_\_\_\_\_.
- (b) Answer the Question - Any **One** out of Two : 2
- (1) Define catabolism and anabolism.
  - (2) Draw the TCA cycle.
- (c) Answer the Question - Any **One** out of Two : 3
- (1) Write the pathways of gluconeogenesis
  - (2) Write the beta oxidation of even chain fatty acid.
- (d) Answer the Question - Any **One** out of Two : 5
- (1) Explain the mechanism of oxidative photophosphorylation
  - (2) Explain the four complexes of electron transport chain.
- 3 (a) Answer the Question : (One Mark Each) 4
- (1) Transamination means the transfer of \_\_\_\_\_ group.
  - (2) Dark reaction takes place in \_\_\_\_\_ of chloroplast.
  - (3) Urea cycle takes place with ammonia and \_\_\_\_\_
  - (4) C4 cycle takes place in \_\_\_\_\_ cell.
- (b) Answer the Question - Any **One** out of Two : 2
- (1) Define deamination
  - (2) Draw the cycle of dark reaction.

- (c) Answer the Question - Any **One** out of Two : **3**
- (1) Draw the Urea cycle and write its regulation
  - (2) Explain the light reaction of photosynthesis.
- (d) Answer the Question - Any **One** out of Two : **5**
- (1) Explain the biosynthesis pathways of purine
  - (2) Write any two disease of inborn errors.
- 4 (a) Answer the Question : (One Mark Each) **4**
- (1) Name the gland which acts as an endocrine as well as exocrine gland.
  - (2) Acetylcholine is \_\_\_\_\_.
  - (3) \_\_\_\_\_ are the groups of hormones that makes the plant root grow.
  - (4) TSH is \_\_\_\_\_.
- (b) Answer the Question - Any **One** out of Two : **2**
- (1) What are hormones ?
  - (2) Enlist plant and animal hormones.
- (c) Answer the Question - Any **One** out of Two : **3**
- (1) What are the types of hormones ?
  - (2) What are the functions of hormones ?
- (d) Answer the Question - Any **One** out of Two : **5**
- (1) Enlist the disorders due to hormonal imbalance in humans.
  - (2) Write in detail endocrine glands and their hormones.

- 5** (a) Answer the Question : (One Mark Each) **4**
- (1) Cholesterol provide\_\_\_\_\_ in the cell membrane.
  - (2) Fluid Mosaic model was proposed by
  - (3) p53 plays role in control of
  - (4) Signal transduction relies on the protein known as \_\_\_\_\_.
- (b) Answer the Question - Any **One** out of Two : **2**
- (1) What is signal transduction cascade ?
  - (2) What are primary and secondary messengers?
- (c) Answer the Question - Any **One** out of Two : **3**
- (1) Explain the process solute transfer across the membrane.
  - (2) Explain the role of protein kinase in cell cycle.
- (d) Answer the Question - Any **One** out of Two : **5**
- (1) What are the types of signal transduction pathways ?
  - (2) Explain the role of hormones in signal transduction.
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