# M. SC. (BIOTECHNOLOGY) SEM-I (2012 COURSE)(CHOICE BASED CREDIT SYSTEM) : SUMMER 2018

## SUJBECT: BIOLOGICAL CHEMISTRY

Day: **Friday** Time: **10.00 am to 01.00 pm**

Date: **06/04/2018** Max. Marks: 60

**S-2018-1080**

**N.B.:**

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer book.

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## SECTION-I

**Q.1** Attempt any **TWO** of the following: **(10)**

**a)** Explain the properties of amino acids? Which amino acids are components of plant cell wall?
**b)** Describe galactose metabolism and explain in brief the physiological implications.
**c)** What is enzyme inhibition? Discuss in detail.

**Q.2** Attempt any **FOUR** of the following: **(10)**

**a)** How are micelles formed? What are their applications?
**b)** What is the fate of amino acids after protein degradation?
**c)** What are waxes? Discuss their properties and applications.
**d)** Explain the physiological significance of enzymes with reference to ethanol sensitivity.
**e)** What is substrate level phosphorylation? How is it different from respiration linked phosphorylation?

**Q.3** Answer in brief or write short notes on any **THREE** of the following: **(10)**

**a)** Write a note on structure of proteins with reference to its stability.
**b)** Write a note on genetic defects of Urea cycle.
**c)** What is β-oxidation of fatty acid? Explain briefly.
**d)** What is pernicious anemia? Describe briefly.

## SECTION-II

**Q.4** Attempt any **TWO** of the following: **(10)**

**a)** Describe the electron transport chain in detail.
**b)** Explain the Cori cycle in brief.
**c)** Discuss metabolism of glucose in detail.

**Q.5** Answer the following: **(10)**

**a)** What is peroxisomal oxidation of fatty acids?
**b)** What happens to pyruvate under aerobic and anaerobic conditions?
**c)** What are T3 and T4 hormones? What is their significance?
**d)** Draw the structures of glutamic acid, tyrosine, fructose, maltose and any tripeptide.

**Q.6** Answer in **ONE** or **TWO** sentences (Any **FIVE**) **(10)**

**a)** How does Penicillin exert its action?
**b)** What are the products of random hydrolysis of starch and glycogen?
**c)** Give four examples of biologically active peptides with their activity.
**d)** What are essential fatty acids? Give suitable examples.
**e)** What is the significance of phosphorylated intermediates in glycolysis?
**f)** Which amino acids absorb at 280nm and why?

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