# KAI-1261 Seat No._____

## B. Sc. (Sem. IV) Examination

### April / May – 2013

## CCC - I - 5 : Biotechnology : Paper - V
## (Cellular Metabolism - II)

*(Core Compulsory Course - I)*

Time : 3 Hours] [Total Marks : 70

**1 Give the answer of Multiple Choice Question** 7

1. **β-Oxidation steps are similer to which of the following process**
   - A. Fermentation of pyruvate to ethanol.
   - B. Conversion of succinate to OAA
   - C. Formation of glucose 6 phosphate.
   - D. All
2. **In C4 Plants Calvin cycle take place in**
   - A. Mesophyll cell
   - B. Bundle sheath Cell
   - C. Epidermis
   - D. None
3. **What is location of enzymes of ETC in bacteria?**
   - A. Mitochondrial inner membrane.
   - B. Mitochondrial outer membrane.
   - C. Plasma membrane.
   - D. Mitochondrial matrix
4. **The end product of purine in normal human is _____**
   - A. Urea
   - B. Creatine
   - C. Uric acid
   - D. Xanthine
5. **How many high energy bonds are present in GTP**
   - A. Two
   - B. One
   - C. Three
   - D. None
6. **Active transport .....**
   - A. concentration gradient
   - B. Opposite to concentration gradient
   - C. Uses energy.
   - D. B and C both
7. Ubiquinone of electron transport chain is
   - A. Small hydrophilic molecule.
   - B. Small hydrophobic molecule.
   - C. Can transfer only and only one electron at a time.
   - D. Uses Fe for electron transfer.

**2 Answer the followings in short (Any six)** **[18]**

1) What molecule is considred as universal energy currency of cell ?Explain its structure.
2) Explain simple diffusion.
3) Which types of nitrogenous waste are produced in living organisms?
4) Briefly explain anatomy of C4 plant leaves.
5) Secondary messengers
6) Role of proton gradient in ATP generation.
7) What are essential amino acids ? Give list of essential amino acids for human.
8) What is photo respiration?

**3 Explain in Detail (Any five)** **[35]**

1) C4 Cycle.
2) ATP synthase functioning.
3) Pyrimidine biosynthesis.
4) How does insulin induce signaling pathway?
5) How does animal generate nitrogenous waste material urea?
6) Photosynthesis in anaerobic bacteria.
7) Explain lipid catabolism using suitable example of catabolic pathway for lipid oxidation.

**4 Discuss in Detail (Any one)** **[10]**

1) Membrane transport.
2) Components of electron transport chain of mitochondria.