

**SARDAR PATEL UNIVERSITY**  
**BSc (VI Sem.) Examination**  
**Wednesday, 10<sup>th</sup> April 2013**  
**3 – 6 pm**  
**US06CBCH03 – Biochemistry**  
**Metabolism II**

**Total Marks: 70**

**Notes:** Figures to the right indicate full marks.

- Q.1 Select proper option from following MCQs. [10]
- (1) Which complex is known as Cytochrome Oxidase.
    - (a) complex-1
    - (b) complex-2
    - (c) complex-3
    - (d) complex-4
  - (2) Which one of following is not a uncouplers
    - (a)  $\text{CN}^-$
    - (b) detergents
    - (c) DNP
    - (d) FCCP
  - (3) Site-II of ETC is inhibited by \_\_\_\_\_.
    - (a) Barbiturates
    - (b) Rotenone
    - (c) BAL
    - (d) Cyanide
  - (4) Which one of the following is more toxic?
    - (a) Urea
    - (b) Uric acid
    - (c)  $\text{NH}_3^+$
    - (d) Glutamine
  - (5) Serine is biochemically synthesized by \_\_\_\_\_.
    - (a)  $\alpha$ -Ketoglutarate
    - (b) Oxaloacetate
    - (c) PEP
    - (d) 3-phosphoglycerate
  - (6) Albinism occurs due to \_\_\_\_\_ deficiency.
    - (a) Tyrosinase
    - (b) Decarboxylase
    - (c) Cystathionine Synthase
    - (d) Phenyl alanine Hydroxylase
  - (7) Which one of following amino acid is not involved in purine biosynthesis?
    - (a) Aspartate
    - (b) Arginine
    - (c) Glycine
    - (d) Glutamine
  - (8) The metabolic defect in Gout is due to over production of \_\_\_\_\_.
    - (a) Purines
    - (b) Pyrimidines
    - (c) a and b both
    - (d) Uric acid
  - (9) \_\_\_\_\_ serves as fuel sources for peripheral tissue.
    - (a)  $\beta$ -hydroxybutyrate
    - (b)  $\alpha$ -Hydroxybutyrate
    - (c) Hydroxyphenyl
    - (d) Hydroxy methane
  - (10) Synthesis of Urea occurs in \_\_\_\_\_.
    - (a) Kidney
    - (b) Muscle
    - (c) Brain
    - (d) Liver

- Q.2 Answer in very short. **(Any Ten)** [20]
- (1) What do you know about  $\text{IF}_1$ ? Write its function.
  - (2) List names of enzymes of respiratory chain.
  - (3) Write down names and mode of action of any two inhibitors of oxidative phosphorylation.

- (4) Write reaction catalyzed by Serine Hydroxymethyl transferase.
- (5) Write clinical features of phenyl keto uria.
- (6) Write clinical manifestation of Albinism.
- (7) Write full forms of FGAM, AIR, SAICAR IMP in terms of metabolism.
- (8) What is the purpose of Co-production by Heme degradation?
- (9) Write reaction catalyzed by Imp Dehydrogenase.
- (10) Which organs play important role in starvation? Write common product produced in Starvation.
- (11) What do you know about BMI?
- (12) What do you mean by Ketoacidosis?

- Q.3 Explain in detail
- (a) Illustrate ATP synthase [04]
  - (b) Illustrate Q-cycle [06]

**OR**

- Q.3 Explain in detail
- (a) Any two regulatory mechanisms for oxidative phosphorylation. [04]
  - (b) Mechanism of action with structure of Complex-I. [06]

- Q.4 Explain:
- (a) Decarboxylation reaction [04]
  - (b) Urea cycle [06]

**OR**

- Q.4 Explain:
- (a) Non-oxidative deamination [04]
  - (b) Chorismate biosynthesis (Explain with reaction.) [06]

- Q.5 Explain in detail:
- (a) Salvage pathways [05]
  - (b) Pyrimidine degradation [05]

**OR**

- Q.5 Explain in detail:
- (a) Illustrate IMP to GMP and AMP Production [04]
  - (b) Heme degradation [06]

- Q.6 Draw integration pathway of metabolism and explain it. [10]

**OR**

- Q.6 How metabolism takes place during starvation? [10]

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