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SC

(41 & A-12)

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

**SARDAR PATEL UNIVERSITY**  
**B.Sc. -VI Semester Examination 2018**  
**Saturday, 31<sup>st</sup> March**  
**10.00 AM. to 1.00 PM.**  
**Subject Code: US06CBCH03**  
**(Metabolism II).**

**Total Marks: 70**

- Q1. Choose the correct option and write it in the answer sheet: [10]
- The P:O ratio for oxidation of NADH is .....  
a) 01 b) 02 c) 03 d) 04.
  - The Tobacco smoke a, well known carcinogenic sources of .....  
a) ATP b) ROS c) GTP d) none of these.
  - ATP Synthase activity is associated with the mitochondrial enzyme complex  
a) V b) II c) IV d) III.
  - The substance that facilitates protein degradation is .....  
a) Phylloquinone b) Metaquinone c) Ubiquinone d) Ubiquitin
  - Nitrogen is a key component of .....  
a) Fatty acid b) Amino acid c) Ascorbic acid d) Pyruvic acid
  - The amino acid which acts as the storehouse of nitrogen (NH<sub>3</sub>) in the body.  
a) Arginine b) Lysine c) Alanine d) Glutamine
  - In albinism, the following substance is either absent or defective.  
a) Melanin b) Biopterine c) Noradrenaline d) Dopamine.
  - The brain energy metabolism is based wholly on .....  
a) Glucose 6 Phosphate b) Glucose c) FFA d) Amino acid
  - FADH<sub>2</sub> and NADH finally oxidized in .....  
a) ETC b) TCA c) HMP d) None of these
  - Xanthine oxidase oxidized hypoxanthine to Xanthine and Xanthine to ....  
a) Urea b) Acetate c) Xylose d) Uric acid.

(1)

[PT-0]

Q2. Answer the followings in short (any ten)

[20]

1. Define Free energy and Free radicals.
2. Draw the structure of ATP.
3. Sunlight is the ultimate source of energy in all forms of biological systems-Justify.
4. What is chemical coupling hypothesis?
5. Draw the structures of AMP, GMP, and IMP.
6. Define uricotelic, Amnotelic and ureotelic with example.
7. What are sources of Amino acid pool?
8. Urea cycle is also known as Krebs-Henseleit cycle why?
9. What are components of nucleotides?
10. What are of various Glucose transporters?
11. In a fed state, ketone bodies are almost negligible why?
12. What are biological antioxidants?

Q-3 A) Write detail essay on the structural and functional organisation of the ETC and add a notes on its site inhibitors. [07]

B) Write notes Paul Boyer's hypothesis. [03]

OR

Q-3 A) Discuss harmful effects of free radicles on Biomolecules. [06]

B) Write notes P:O ratio. [04]

Q-4 Write an essay on the biosynthesis of urea, how it is regulated? and write about its energetics. [10]

OR

Q-4 A) Write detail notes on Transamination. [05]

B) Explain about Maple syrup disease. [05]

Q-5 A) Write notes on Purine biosynthesis. [05]

B) Discuss in detail about Gout. [05]

OR

Q-5 Write notes on De novo synthesis of pyrimidine and add a note on its regulation. [10]

Q-6 Discuss metabolism during diabetes mellitus and discuss role of liver and brain during metabolism. [10]

OR

Q-6 A) Draw an overview of integration of metabolic pathways of energy metabolism. [04]

B) Discuss role of adipose tissue and skeletal muscle in metabolism of carbohydrates. [06]