June 2018

CHEMISTRY OF FOOD – II

Time Allowed: 3 Hours *Full Marks: 70*

Answer to Question No.1 is compulsory and to be answered first.
This answer is to be made in separate loose script(s) provided for the purpose.
Maximum time allowed is 45 minutes, after which the loose answer scripts will be collected and fresh answer scripts for answering the remaining part of the question will be provided.
On early submission of answer scripts of Question No.1, a student will get the remaining script earlier.

Answer any five questions from the rest.

1. Answer the following questions (any twenty): 1×20=20

i) TCA cycle stands for _____.
ii) One TCA cycle yields _____ moles of ATP.
iii) Glycogen is a Protein / Carbohydrate / Fat. [Choose correct answer]
iv) Oxidation of $FADH_2$ liberates more ATP than oxidation of $NADH_2$. [True / False]
v) What is pro-vitamin A?
vi) Full name of ATP is _____.
vii) How much energy (K Cal/mol) is liberated when ATP is converted to ADP?
viii) _____ is an essential fatty acid.
ix) PUFA is _____.
x) _____ is an essential amino acid.
xi) 1 gm fat can liberate _____ kcl energy.
xii) Oxidative phosphorylation means _____.
xiii) _____ is proteolytic enzyme.
xiv) How much protein is required for adult person?
xv) Pepsin is secreted from _____.
xvi) Table salt is fortified with _____ for goiter.
xvii) Name two micronutrients.
xviii) Iron can rectify _____ disease.
xix) Antioxidant means _____.
xx) Name a fat soluble vitamin.
xxi) Name a vitamin which is also an antioxidant.
xxii) 1 gm carbohydrate releases _____ kcl of energy.
xxiii) Name an essential sulphur-containing amino acid.
xxiv) Deficiency of iron causes _____.
xxv) Name a fat splitting enzyme.

2. Schematically describe Krebs cycle, showing the points where ATP is generated. How much energy is liberated in this process? 7+3

3. Define gluconeogenesis. Write down the steps of gluconeogenesis mentioning all the enzymes, co-enzymes and cofactors involved in each steps. 2+8

4. What do you mean by lipid digestion? Where does the digestion taken place in the body? Describe and details the digestion process. 2+2+6

5. What is nitrogen pool and nitrogen balance? How this nitrogen balance is maintained in normal adult? 2+2+6

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6. Mention the name of essential amino acids. Discuss the role of stomach and pancreas in involvement of protein digestion. 2+4=4

7. What is emulsifier? Write the name of natural and synthetic emulsifier. What is the function of emulsifier? What is antioxidant? Write the name of natural and chemical antioxidant. What is the function of antioxidant? 2+2+1+1+2+2

8. Define natural and synthetic colour with example. What are the disadvantages of using synthetic food colour? Write differences of natural and synthetic colour. Define permitted and non permitted food colour with example. 3+1+3=3

9. What is competitive inhibition? Give example. What are the characteristics of competitive inhibition? How changes in kinetics occur due to competitive inhibition? 3+2+5

10. Discussed how protein is digested in our digestive tract. Describe the function of enzyme which is involved in protein digestion. 6+4

11. Write short notes on Thickener, Clarifying agent, Flavouring agent, Non nutritive sweetener. 2½×4

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