LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – **FOOD CHEMISTRY AND FOOD PROCESSING**

SECOND SEMESTER – **APRIL 2022**

PFP 2502 – HUMAN NUTRITION AND BIOCHEMISTRY

Date: 17-06-2022 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A **(10×3 = 30 Marks)**

Q. No Answer ALL the Questions

1 Mention any six signs of good nutrition.

2 Calculate the BMR for Ms. Vinodhini aged 46 years measuring 160 cm and weighs 65 kg.

3 Differentiate Picky eaters and Food Jags and their nutritional implications in children.

4 Expand and define the following:
   a. DIASS
   b. PER

5 What is the physiology of lactation?

6 Define Electron transport chain.

7 Write the energetics of TCA cycle.

8 Mention the by-pass system adopted by gluconeogenic pathway to generate energy from pyruvate.

9 What are codons and anticodons?

10 Define deamination.

PART – B **(5×8= 40 Marks)**

Answer ALL the Questions

11 (a) Calculate the TDEE for Ms. Aishwarya aged 45 years working as a lecturer in a private college. She weighs 55kg and measures 160cm. On an average she consumes 1800 Kcal per day. Evaluate her BMI and energy balance. (8)

(OR)

(b) Give an account on the phosphagen and aerobic system of energy production. (8)

12 (a) Justify the complementary nature of proteins with suitable examples. Illustrate the digestive pathway of proteins highlighting the enzymes involved in the process. (8)

(OR)

(b) Classify the different stages of adulthood. What are the additional nutritional requirements for the elderly? (8)

13 (a) Give an account on the anthropometric measurements of nutritional assessment. (8)

(OR)

(b) Comment on Translation mechanism in prokaryotes. (8)

14 (a) Explain the types of membrane transport process. (8)

(OR)

(b) Enumerate the glycogenesis pathway highlighting its hormonal regulation. (8)

15 (a) Discuss TCA cycle. (8)

(OR)

(b) Elaborate on the Watson – crick model of DNA with suitable illustrations. Discuss the types of nucleotide base pair sequences along with structural elucidations. (8)

PART – C **(2×15 = 30 Marks)**

Answer any TWO Questions

16 What are the complications encountered during pregnancy and enumerate the additional nutritional requirements for a pregnant woman. (15)

17 Explain in detail the different eating disorders during the phases of preschoolers, school goers and adolescents. How can one overcome the disorders encountered during each phase? (15)

18 Explain the reactions involved in respiratory chain with the site and complexes involved. Also illustrate the F0F1 ATP synthase complex. (15)

19 Explain the mechanisms of molecular sequences involved in protein biosynthesis from the replication, transcription and translation routes. (15)

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