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Roll No.

B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APR / MAY 2013

AGRICULTURAL AND IRRIGATION ENGINEERING BRANCH

Fourth Semester

AI 9253 – FOOD SCIENCE AND NUTRITION TECHNOLOGY

(Regulation 2008)

Time: 3 hours

Answer ALL Questions

Max Marks: 100

Part – A (10 x 2 = 20 Marks)

- 1) Expand – TVP, ATP, BHQ, PER
- 2) How is adulteration in honey detected?
- 3) Draw a flowchart for the digestion, absorption and metabolism of protein.
- 4) Differentiate soufflé and fondue.
- 5) Give the units and names by which vitamins are measured.
- 6) What are the types of rancidity?
- 7) List out some of the extruded products with their brand names.
- 8) The percentage composition of 250 ml of a fruit juice is as follows – undissolved fruit solids – 48, sugar content of fruits – 2, added sucrose – 15, pectin – 2, water – 30, preservatives and others – 3. Calculate the total sugar concentration in fruit juice.
- 9) With examples, discuss a tetrapack.
- 10) State the reasons for taking beverages. Give examples.

Part – B (5 x 16 = 80 Marks)

- 11) i) Explain the fermentation of carbohydrates, proteins and lipids. (8)
- ii) Write short notes on coffee processing. (8)
- 12) a) i) What is protein quality? List the methods of improving the same in a vegetarian diet and explain the methods of assessing it. (16)

(or)

- b) i) The 10 hour schedule of a non-vegetarian adult woman 21 years old, height 150 cms and weighing 51 kg, doing sedentary work is given in the following table.

| Activity | Time (hrs / minutes) | Energy cost of activity (kcal/hr) |
|--------------------------|----------------------|-----------------------------------|
| Walking | 45 min | 160 |
| Gym – aerobic exercises | 45 min | 500 |
| Bathing & dressing | 30 min | 160 |
| Driving a car | 30 min | 160 |
| Attending class lectures | 4 hrs | 100 |
| Attending practicals | 3 hrs | 160 |
| Having meals | 30 min | 100 |

Note that these values do not include BMR and SDA. Calculate (i) BMI (ii) the energy required for basal metabolism for this period of 10 hrs. (8)

ii) How are fats classified? (8)

13) a) i) What is adulteration? Explain its types. Tabulate the food, adulterant and the problems caused under each category with 4 examples each. (10)

ii) What are the different types of tests used in the sensory evaluation of foods? (6)

(or)

b) i) Explain the Essential Commodities Act and the orders covered. (10)

ii) Write short notes on pH and its application to food science. (6)

14) a) i) Tabulate the Recommended Dietary Allowance of important minerals for children, males and females. (10)

ii) Write short notes on Child foods. (6)

(or)

b) i) Write short notes on Vitamin B to our body. (10)

ii) Discuss the importance of Calcium to our body. (6)

15) a) i) What is extrusion processing? With a neat sketch of an extruder, explain the steps involved in the development of extruded products. (16)

(or)

b) i) List at least 20 tools / equipments required in a fruit / vegetable processing industry with its use. (10)

ii) What are the ingredients required for preparing a mixed fruit jam? Explain the process. (6)