

M.Sc. (Sem.-II) Examination

407

Food Sciences & Nutrition

May-2017

Time : 3 Hours]

[Max. Marks : 70

Instructions:

All Questions are compulsory and carry equal marks
Draw neat and labelled diagram wherever necessary

1. A) Explain the absorption of carbohydrates with relation to body fitness in brief. 07
OR
A) What are non-nutritive components? Discuss its disadvantages in human body with examples. .
B) Discuss the factors controlling metabolism of water. 07
OR
B) What is Lactose intolerance? Discuss in detail.
2. A) Discuss the factors that influence the dietary intake of various population groups. 07
OR
A) What are the factors that affect health and fitness of an individual?
B) Define health and fitness. Discuss the component of health and categories of physical fitness in detail.. 07
OR
B) What are the major chronic effects of aerobic training?
3. A) A half marathon runner needs energy for event. Discuss how he will get this energy from carbohydrates. 07
OR
A) Give general guidelines for sports performance and discuss needs for macronutrients for a sports person.
B) Discuss carbohydrate loading in detail. 07
OR
B) Discuss the five main components of fitness. Also give flow chart to develop an active lifestyle.
4. A) A male marathon runner , age 35 years and weight 65 kg. wants to plan a pre-game and post-game meal. His event is at 8.00am, suggest a sample meal plan for him. Also give requirements for macronutrients. 07
OR
A) Define Burns and give the classification of burns.
B) Which nutrigenic aids and supplements will you plan for a badminton player? 07
OR
B) Discuss Yoga and Ayurveda as the alternative system for health and fitness.
5. **Write in brief** 14
1 What are macrobiotic diets?
2 Define RHR and how will you calculate it?
3 Define Cori's cycle.
4 Give formula for Broca's index.
5 Name the asana to be done after taking meals and its benefits.
6 Discuss Pellagra.
7 Define ovo-vegeterianism

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- 1 A) Explain the mechanism of Muscle contraction with suitable diagram. 07
OR
 A) Discuss the mechanism of Nerve conduction and generation of action potential. 07
 B) Describe importance of Eicosanoids in detail. 07
OR
 B) Explain mechanism of action of Steroid hormones in detail.
- 2 A) Describe the role of Gastric juice and Pancreatic juice in digestion. 07
OR
 A) Discuss mechanical digestion of Carbohydrates in detail. Add a note on its regulation. 07
 B) Explain the Chloride shift and backshift in transport of CO₂. Add its significance. 07
OR
 B) Give a detailed account on: Regulation of Respiration.
- 3 A) Explain the Extrinsic pathway of blood clotting using flow diagram. 07
OR
 A) Describe different stages of Cardiac cycle and add its significance. 07
 B) Give a detailed account on: Types of Immunity 07
OR
 B) Explain the Host response to foreign antigens in detail.
4. A) Explain Internal structure of Nephron. Elucidate its role in Osmoregulation. 07
OR
 A) Explain Counter current mechanism for Concentration of urine in human. 07
 B) Explain the role of Free radical generated oxidative stress in diseases. 07
OR
 B) Describe the stages of Spermatogenesis in male reproductive system.
5. **Answer in Brief:** 14
 A Explain: Resting Membrane Potential
 B Enlist important Peptide hormones.
 C Mention the significance of Bile salts in the digestion.
 D State the location and functions of SA node and AV node.
 E Expand the terms : ADH , CKD , CRRT , CPK
 F Explain: Detoxification
 G Define Isoenzyme and give examples.

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1. A) Discuss the stages of product lifecycle in brief. 07
OR
 A) Mr. Samuel wants to develop a new variety of instant noodles. Discuss a research design for him to launch this product in the market.
 B) What is NDP? Explain its five phases. 07
OR
 B) Discuss in detail choosing a primary research method.
2. A) What are the recent trends in marketing strategies? Discuss the changing trends in consumer behaviour 07
OR
 A) What are the advanced technologies used in food processing? Discuss its uses in food industry.
 B) Discuss the factors that affect the consumer behaviour. 07
OR
 B) Discuss pressure agglomeration.
3. A) Differentiate between paper, paperboard and fibreboard. Give details of different paperboard and advantages and disadvantages of paperboard in food packaging. 07
OR
 A) What is modified atmospheric packaging? How is it different from vacuum packaging?
 B) What are primary, secondary and tertiary containers? Also differentiate between hermetic and non-hermetic closures.
4. B) Why mandatory fortification of oil is difficult in India?
 A) Mr. Ajay is launching tomato ketchup in the market. What chemical, technological and toxicological aspects he will consider with respect to food additives? 07
OR
 A) Discuss any five spices used in food industry and their flavouring agents.
 B) Enlist the major categories of food additives giving examples in each category and its use in food industry.. 07
OR
 B) What are the core marketing concepts? Explain at least five of them.
5. **Answer Briefly:** 14
 1 Give the advantages of sensory evaluation in NPD.
 2 What is the common name for red colour and the number used for it?
 3 What is Stevia?
 4 Differentiate between LDPE and HDPE
 5 Define freebies.
 6 What is air classification?
 7 Write in short about marketing mix.