

Model Answer Paper

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION
B.Sc. (Hons.) Horticulture

Semester	: III (New)	Term	: 1	Academic year:	2022-23
Course No.	: H/PHT 231	Title	: Fundamentals of Food and Nutrition		
Credits	: 2 (1+1)				
Day & Date	:	Time	: 2 Hours	Total marks	: 40

- Note:
1. Solve ANY EIGHT questions from SECTION 'A'.
 2. All questions from SECTION 'B' are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

Model Answer Paper
SECTION 'A'

- Q. 1 Enlist different food groups and explain any one of them. 4 marks
(Following points to be covered)
- Basic four
 - Basic five
 - Basic seven
- Q. 2 Explain in detail the function of food. 4 Marks
(Following points to be covered. $\frac{1}{2}$ marks for each point)
- Physiological function
 - Social function
 - Psychological function
- Q. 3 Explain how food nutrients sources useful for in relation to good health 4 Marks
with example.
- To maintain good health
 - Ingesting a diet containing the nutrients in correct amount is essential
 - A balanced diet is one which contains different type of food, which made need for calories, fats, mineral and vitamin
 - Food has not only nutrients but also nutraceuticals which prevent degenerative diseases.
 - The nutrients helps to maintain deficiencies
 - Energy and Protein maintain underweight
 - Calcium, Vitamin D- Rickets and Osteomalacia
 - Iron-Anaemia
 - Vitamin A- Night blindness
 - Thiamin- Weakness of heart muscles
 - Niacin-Diarrhoea and dermatitis etc.

Q. 4 Enlist different moist heat methods of cooking and explain any one of them with its advantages and disadvantages.

Moist heat methods of cooking

2 Marks

- Boiling
- Simmering
- Poaching
- Stewing
- Blanching
- Steaming
- Pressure cooking

Need to explain any one of them *with its advantages & disadvantages* 2 Marks

Q. 5 Explain in brief effect of under nutrition on population. (4 Marks)

- The term under nutrition denotes condition in which the individual are semi-starved
- Loss of body weight
- Emaciation due to loss of tissue, proteins and adipose tissues
- Reduction in plasma protein leading to the development of oedema
- General weakness, apathy and lack of interest in surroundings
- Severe under nutrition causes the condition known as marasmus

Q. 6 Write short note (Any Two)

1. Objectives of cooking: -

(2 Marks)

- Improve the test of food quality
- Destruction of microorganism
- Improve digestibility
- Increases variety
- Increase consumption of food
- Increases availability of nutrients
- Increase antioxidant values
- Concentrates nutrients

2. Nutritional surveillance: -

(2 Marks)

- Keeping a watch over activities and events that are expected to have a direct or indirect bearing on nutritional status
- Nutritional surveillance which helpful to detect occurrence of malnutrition
- Nutritional surveillance gives idea to control malnutrition with appropriate measures
- The nutritional surveillance serves three functions: Monitoring, Detection of trends and Prediction

3. Solar cooking: -

(2 Marks)

- Solar cooking utilizes solar energy or can be deflected solar energy from large concentrations of rays' surface.

- It consists of outer box, inner box, mirror, cooking containers, thermal insulation and double glass cover
- It does not require conventional fuels
- Keep environment clean
- Less expensive
- No smoke
- But, depends on sun and loss of vitamin C is more

Q. 7 Define vitamin and explain water soluble vitamins.

- **Vitamin:-** Vitamin may be defined as organic compounds occurring in small quantities in the different natural foods and necessary for the growth and maintenance of good health in human beings. (1 Mark)
- **Water soluble vitamins:** (3 Marks)
 - a) If vitamin is not fat soluble, then it is classified as one of the water soluble vitamins
 - b) Vitamins that dissolve in water
 - c) These vitamins move through your body pretty easily
 - d) Vitamins are flushed out in your urine with ease
 - e) Vitamins need to be replenished daily
 - f) Water soluble vitamins include B-complex vitamins and vitamin C
 - g) These are eight B vitamins (B₁, B₂, B₃, B₅, B₇, B₉ and B₁₂)

Q. 8 Define balanced diet. Explain in brief nutritive value of different food groups.

- **Balanced diet:-** Balanced diet may be defined as one which contains various groups of foodstuffs such as energy yielding food, body building food and protective food in the correct proportion so that an individual is assured of obtaining the minimum requirements of all the nutrients. (1 Mark)
- **Nutritive value of different groups of food:-** Cereals and millets, Pulses, Nut & oilseeds, Vegetables, Fruits, Milk and milk products, Eggs, Meat, Fish and other animal foods, Fats and oils, Sugar and other carbohydrates food and Spices and condiments (3 Marks)

Q.9 Discuss the rules which help to retain nutrients during food preparation. (4 marks)

Some simple rules for retaining nutritive value and flavour are given below:

1. Wash vegetables before cutting
2. Cut vegetables just before cooking and introduce cut vegetables into boiling water, if to be cooked in water.
3. Use just enough water for cooking, if the vegetables or other foods are to be served as such.
4. Cook foods until just done and serve immediately.
5. When preparing soups, the longest cooking ingredient should be added first, followed by addition of other ingredients, which cook in shorter time. For example, meat needs longer time and hence can be cooked half-way before adding vegetables, which need much less time. This procedure helps to avoid over cooking of the vegetables.

6. Spices and other flavour ingredients should be added in the oil used for seasoning, as the flavour compounds which are soluble in fat, are thus easily dispersed in the preparation with the oil or fat.
 7. Vegetables, salads should be prepared just before serving.
 8. Use of acid foods, such as lime juice, tomatoes, vinegar or yogurt as dressing in salads prevents loss of Vitamin C, because it is stable in acid medium.
 9. Fruits are best eaten as they have been customarily eaten in tropics. Bananas are eaten right after peeling. Oranges are usually sucked after peeling. Grape fruit is usually peeled and eaten. Mangoes are sucked to get the juice. In this manner of eating, no loss of Vitamin C occurs, as the fruit is not much exposed before eating.
- Q. 10 Define nutritional status. Enlist method of assessment of population and explain in brief any one of them
- Nutritional status:- Nutritional status is the condition of health of an individual as influenced by the intake and utilization of nutrients (1 Mark)
 - Nutritional status can be assessed by different methods as, (3 Marks)
 - a) Dietary survey/food consumption survey
 - b) Biochemical tests
 - c) Clinical assessment
 - d) Anthropometric (body measurement)
 - e) Radiological and biophysical measurements

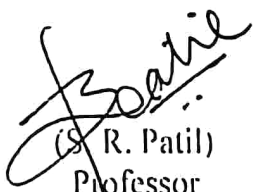
SECTION 'B'


Q. 11 Define the following terms (4 Marks)
(1 mark for each definition)

1. Food: Food is defined as anything solid or liquid which when swallowed, digested and assimilated, nourishes the body
2. Cooking: The process of subjecting foods to the action of heat is termed as cooking.
3. Nutrients: A nutrients may be defined as a substance that is necessary for the functioning of living organism.
4. Good health: Implies not only freedom from disease, but physical, mental and emotional fitness as well.

Q. 12 Fill in the blanks (4 Marks)

1. Folic acid (folate) content of food, an adult needs 200 mcg a day.
2. Vitamin C is one of the most potent antioxidant vitamin.
3. Male requires energy from their food 5-7 % faster than female.
4. The amount of energy needed to keep body functioning in arresting, awake and fasting state in comfortably warm environment is called the Resting Metabolic Rate (RMR)


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