Marks Scored:

KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2017

Level : B. Tech.
Year : IV
Course : BIOT 416
Semester : I
Exam Roll No. :
Time : 30 mins.
F. M. : 20
Registration No. :
Date APR 10 2017

SECTION "A"
[20 Q. × 0.75 = 15 marks]

Mark "X" in the most appropriate box.

1. The acidity of fresh milk is
[ ] 1% [ ] 0.1% [ ] 2% [ ] 0.2%

2. Pasteurization is a method of preservation that involves application of heat usually
[ ] Below 100° C for few seconds [ ] Below 100° C for few minutes
[ ] Above 60° C for few seconds [ ] Below 70° C for few minutes

3. Food Preservation by Canning is also called
[ ] Blanching [ ] Sterilization [ ] Appertization [ ] Pasteurization

4. Metal Containers used for food packaging are
[ ] Recyclable [ ] Must not be compatible with the product
[ ] Not safe for preservation [ ] Support nutrient loss

5. Q_{10} for most biological system is
[ ] 1.5 to 2.5 [ ] 1.0 to 2.0 [ ] Less than 1.0 [ ] 0.5 to 1.5

6. Which has the highest respiration rate?
[ ] Onions [ ] Tomatoes [ ] Garlics [ ] Mushrooms

7. The main type of lacquer in canning is
[ ] AR Lacquer [ ] SR Lacquer [ ] Both [ ] None

8. The chief defects or causes of spoilage may be
[ ] Physical [ ] Chemical [ ] Microbial [ ] All of them

9. Most foods in native states are
[ ] Acidic [ ] Basic [ ] Neutral [ ] Bitter

10. The main advantage of fermentations is
[ ] Preservation aids [ ] Produce more nutritious foods
[ ] Influence microbial growth [ ] Bring chemical changes

11. The most commonly used Radiation sources are
[ ] Cobalt [ ] Iodine [ ] Caesium [ ] Arsenic

12. The recommended dose of irradiation is
[ ] < 10 KGy [ ] > 10 KGy [ ] 10 to 20 KGy [ ] None

13. Which one is the Class II type preservative?
[ ] Alcohol [ ] Vinegar [ ] Sugar [ ] Sorbic acid

14. Smoking to food aids preservation by
[ ] CO
[ ] SO_2
[ ] Alcohol, ketones and other aliphatic acids
[ ] CO_2

15. RH required to Controlled Atmosphere Storage is
[ ] 80-95 % [ ] 90-95 % [ ] 70-75 % [ ] 85-90 %

16. The pH of Acid food is
[ ] pH < 4.5 [ ] pH > 4.5 [ ] pH 4.0 - 4.5 [ ] pH = 4.0

17. Which one requires the highest level of CO_2 for storage?
[ ] Apple [ ] Banana [ ] Strawberry [ ] Cucumber

18. The Intrinsic factor of food is
[ ] Temperature [ ] Nutrients [ ] Atmosphere [ ] Relative Humidity

19. *"Milk"* fermentation is carried out by
[ ] Yeast
[ ] Lactic acid Bacteria (LAB)
[ ] Molds
[ ] All of them

20. Moisture in fresh meat is approximately
[ ] 75-80% [ ] 85-95% [ ] 85-90% [ ] 80-85%

SECTION "B"
[10 × 0.5 = 5 marks]

Fill in the blanks.

21. The acid present in meat is----------

22. The cold point of liquid food inside metal Can is at----------

23. The best temperature required for banana storage is ----------^{0}C

24. The time needed to destroy 90% of the microorganism to reduce their by a factor of 10 is referred to----------

25. Soluble part of the mash in beer production is called----------

26. The symbol of water activity is----------

27. KMS is used to preserve----------

28. Raw meat is best stored at----------°C

29. Example of wet cleaning is ----------cleaning.

30. Energy Value (Kcal/g) of Protein is----------

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APR 1 0 2017

Level : B. Tech.
Year : IV
Time : 2Hrs. 30 Mins

Course : BIOT 416
Semester: I
F. M. : 55

SECTION "C"
[11Q. × 5 = 55 marks]

Attempt *ANY ELEVEN* questions. Give short and relevant answers. All questions carry equal marks:

1. Define Additives. What are the roles of food additives in food processing? List out any ten different food additives commonly used in processed fruits and vegetable products.

2. What are the basic principles of concentrated products? List out the concentrated food products available in Nepalese local market.

3. What are the traditional fermented foods available in Nepal? As a technologist, how do you improve quality of fruits and vegetable products to commercialize it in Nepalese market?

4. Write down the basic principles of high intensity pulsed electric fields (PEF) method of food preservation?

5. Define lacquering. What are the chief defects of canned foods? List out the reasons associated to defects.

6. Classify food from the perspective of stability and functional properties. What are Class I and II Type preservatives?

7. What do you understand the post harvest operations in food industries? How do you minimize post harvest loss of fruits and vegetable at farm level?

8. Define Radiolysis of water. List out the affect of radiation on nutrients of food?

9. Distinguish Sun drying and Mechanical drying when applied to food industries. What are the effects of water activity on foods?

10. Find D value at 100^0C for *Cl. botulinum* (Z value= 10^0C) when D value at 121^0C is 0.2 min?

11. Define Fermentation. What are the factors that control food fermentation?

12. Distinguish Pasteurization, Radiation and Sterilization.

13. What are the barriers of food safety? Write down its importance.