

UNIVERSITY OF RUHUNA
BACHELOR OF SCIENCE (GENERAL) DEGREE LEVEL III SEMESTER I
EXAMINATION -JULY/AUGUST 2023

Subject: Botany

Course Unit: BOT3172 (Food Technology)

Time: 1.5 hours

Index NO.:

Answer ONLY THREE questions including question No. 1

i) Answer all parts (Part A, Part B and Part C)

Part A

Select and underline the most appropriate answer from *a, b, c* and *d*

(51 marks)

- i) Which of the following is /s are the reason/s for the present food crisis in Sri Lanka
- | | |
|-------------------------|---------------------|
| a) high consumer demand | b) low productivity |
| c) spoilage | d) above all |
- ii) is not involved in cut fruit browning
- | | |
|------------|---------------|
| a) oxygen | b) polyphenol |
| c) quinine | d) water |
- iii) Which of the following gas causes fruit ripening?
- | | | | |
|-------------|------------|------------|----------------------|
| a) ethylene | b) ammonia | c) methane | d) none of the above |
|-------------|------------|------------|----------------------|
- iv) is not used as a food rapping material
- | | | | |
|------------|--------------|------------|------------|
| a) plastic | b) polythene | c) cartons | d) leather |
|------------|--------------|------------|------------|
- v) In canning, the objective of exhausting is.....
- | | |
|-----------------------------|---|
| a) to expel the trapped air | b) to discourage the growth of bacterial spores |
| c) both a and b | d) none of above |
- vi) What is the test used to identify a solution prepared from egg albumin?
- | | | | |
|----------------|----------------|--------------------|----------------------|
| a) Biuret test | b) Iodine test | c) Benedict's test | d) none of the above |
|----------------|----------------|--------------------|----------------------|

- vii) Which of the following contains only polysaccharides?
- a) starch, cellulose, glycogen b) starch, maltose, lipids
c) cellulose, glycogen, sucrose d) starch, DNA, vitamin
- viii) Which of the following is not a sub discipline of food science?
- a) food chemistry b) food microbiology
c) food packaging d) food catering
- ix) ----- is not a sign of food spoilage.
- a) bad-odour b) discolouration
c) sliminess d) weight-loss
- x) Following microorganism is not responsible for food spoilage
- a) *Aspergillus* spp. b) *Penicillium* spp.
c) *Agrobacterium* spp. d) *Erwinia* spp.
- xi) The following reaction is best described by which choice?
 $Sucrose \rightarrow glucose + fructose$
- a) oxidation b) reduction
c) hydrolysis d) addition.
- xii) What are the components of a food involved in Millard reaction?
- a) phenolic compounds b) Amino acids and reducing sugar
c) protein and carbohydrates d) none of above
- xiii) The below food label is an example of a?



- a) brand label b) descriptive label
c) promotional label d) grade label

xiv) Rancidity is mainly concerned with

a) carbohydrates

b) fats

c) proteins

d) vitamins

xv) In irradiation method, food is preserved due to

a) increase of temperature

b) decrease of moisture content

c) change in pH of food

d) mutation in micro-organisms

xvi) toxin is produced by fungi in spoiled food

a) ethylene

b) hyaluronidase

c) fumonisins

d) bisphenol A

xvii) A boy bought a pack of potato slices from the school canteen. When it was opened he felt an abnormal odour and detected some dust particles on potato slices. When he tasted one slice, he felt that it was not evenly dried too. Which of the following preservation method was used to prepare above potato slices?

a) smoking

b) dipping in salt

c) sun drying

d) dehydrator drying

Part B

i) What do you mean by "food preservation"?

(10 marks)

.....

.....

.....

.....

.....

ii) List the five advantages of the food preservation.

(10 marks)

.....

.....

.....

.....

iii) What is meant by "freezer burner"?

(05 marks)

iv) State the role of "pellicle" formed around the air-dried food.

(10 marks)

i) Ident

ii) Lat

A

B

C

D

E

Part C

(Question numbers from i) to iv) are based on the following diagram 01

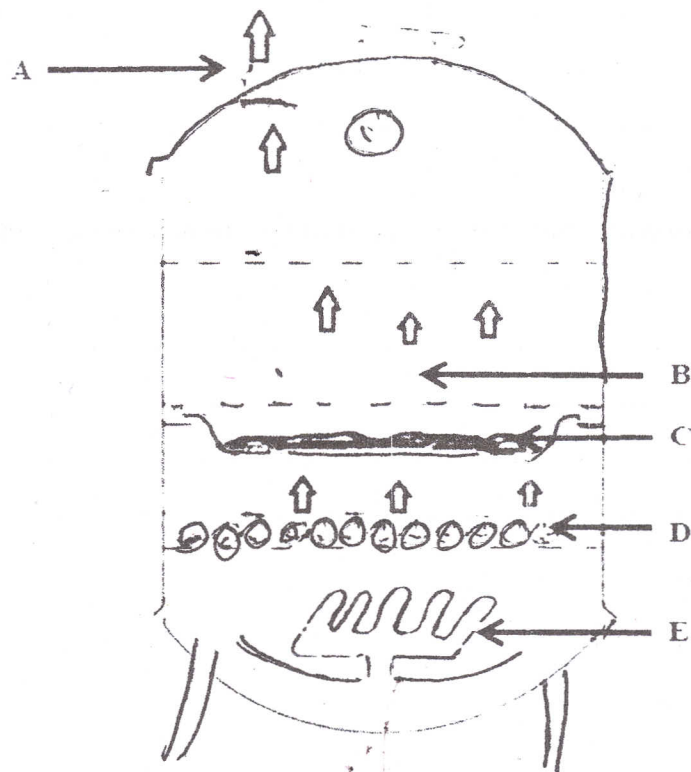


Diagram 01

- i) Identify the machine illustrated as diagram 01.

(05 marks)

- ii) Label the diagram 1 from A to E

(05 marks)

A

B

C

D

E

iii) List three non-toxic chemical groups available in the vapour of above machine (diagram)

(03 marks) Discuss the primary

.....
.....
.....

iv) List two carcinogenic substances that are possible to be present in the machine (diagram)

(02 marks)

.....
.....
.....

3) a) An underground
containing starch
identification test
above three samples

b) i) What is meant by

ii) List the substances
0.1 M and

c) Draw a diagram

d) Explain the

e) i. An underground
spoiled. How

ii. Above ground
spoiled. How
explained

4) Write short notes on
a) Free radicals
b) Bacterial
c) Food
d) Bacteria

machine (diagram 0)

(03 marks) 2) Discuss the primitive methods of food preservation and their advantages and disadvantages.

(100 marks)

hine (diagram 01),

(02 marks)

3) a) An undergraduate student from level III wants to identify three given food solutions (A, B and C) containing starch, protein and fat. If he was provided with required chemicals and facilities for food identification tests, briefly explain the experimental procedure that he/she would follow to identify above three samples, A, B and C? (test reagents and observations must be highlighted)

(30 Marks)

b) i) What is meant by a threshold concentration (TC) of a food

(10 marks)

ii) List the steps you follow to determine the TC of a given sucrose solutions of 0.001M, 0.01M, 0.1M and 0.5M.

(15 marks)

c) Draw a diagram to show the places of a human tongue where different tastes can be recognised

(10 marks)

d) Explain the effect of temperature on solubility of sugar in water as you observed in the laboratory

(10 marks)

e) i. An undergraduate complains that the lunch packet he bought from the science faculty canteen was spoiled. How do you confirm this by observing the above lunch packet physically?

(05 marks)

ii. Above student wants to enumerate the number of microorganisms in the above mentioned spoiled lunch packet by using the plate count method. Supposing you are a demonstrator, explain the steps of the experiment that would be followed by the students.

(20 marks)

4) Write short notes on

a) Freeze-drying

(25 marks)

b) Batch method/Vat, low heat pasteurization

(25 marks)

c) Food poisoning

(25 marks)

d) Benefits of food packaging

(25 marks)
