

UNIVERSITY OF AGRICULTURE, ABEOKUTA
DEPARTMENT OF NUTRITION AND DIETETICS
2007/2008 FIRST SEMESTER EXAMINATION

COURSE: FOOD PREPARATION AND PROCESSING (NUT 201)

INSTRUCTION: ANSWER ALL QUESTIONS IN SECTION A

TIME ALLOWED: 1 HOUR

SECTION A

1.is the reason why anything gets produced, and.....and
.....together are the source of all manmade stress on the natural environment.
2. Household items comprise of.....and.....
3.as well as.....must be considered when purchasing anything.
4. Any substance used to lower the quality of a foodstuff is called.....and.....
is an example of such substance.
5. The purpose of cooking food is to make it.....and.....to eat.

SECTION B ANSWER QUESTION ONE (1) COMPULSORY AND ANY OTHER ONE (1) QUESTION

1. a. What are the factors affecting food consumption in Nigeria.
b. Define the following terms
(i) Food Production
(ii) Food Adulteration
(iii) Co-operative buying
c. Write four (4) advantages of buying food in season
2. a. As a home maker, what are the five (5) points to keep in mind when selecting household Equipments
b. List five (5) examples of Household equipments
3. Define five (5) methods of cooking and give 2 examples of foods cooked by each.

2009/2010 FIRST SEMESTER EXAMINATION

COURSE: FOOD COMMODITIES (NTD 201)

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS

TIME ALLOWED: 2 HOURS

1 (a) Copy and complete the table below:

S/N	FOOD COMMODITIES	BRIEF DESCRIPTION	NUTRITIONAL IMPORTANCE	MAJOR FOOD SOURCES
1.	Roots and Tubers			
2.	Cereals			
3.	Nuts and Legumes			
4.	Fruits and Vegetable			

(b) Foods of animal origin are useful complements to most plant-based diet. Discuss.

2 (a) Classify food using the food guide pyramid

(b) State the uses of market survey

3. Write short notes on quality points to look out for when shopping for food commodities

4. What points do you bear in mind when shopping in order to make good selection?

UNIVERSITY OF AGRICULTURE, ABEOKUTA

DEPARTMENT OF NUTRITION AND DIETETICS

2009/2010 FIRST SEMESTER EXAMINATION

COURSE: NUTRITION AND MICROBIOLOGY INTERPHASE (NTD 203)

INSTRUCTION: ANSWER ALL QUESTIONS

TIME ALLOWED: 1 HOUR 45MINS.

1.(a) Explain the following terms:

- (i) Food spoilage
- (ii) Food Safety
- (iii) Food Toxins
- (iv) Fermentation
- (v) Food Microbiology

(b) List ten (10) bacteria associated with food borne diseases.

2 (a) Using a sketch diagram, highlight the effect of micro-organisms on food substances

(b) State the spoilage micro-organisms associated with the following food substances:

- (i) Fresh meat
- (ii) Fruit juices
- (iii) Milk and milk products
- (iv) Bread
- (v) Eggs

3. Write short notes on the following

- (i) Dysentery
- (ii) Tuberculosis
- (iii) Cholera

UNIVERSITY OF AGRICULTURE, ABEOKUTA
DEPARTMENT OF NUTRITION AND DIETETICS
2009/2010 FIRST SEMESTER EXAMINATION

COURSE: HUMAN PHYSIOLOGY (NTD 205)

INSTRUCTION: ANSWER ALL QUESTIONS IN SECTION A AND B

TIME ALLOWED: 1 ½ HOUR

SECTION A: Short answer. Each question carries 1 (one) mark

1. One can think of body water as distributed into two compartments
and.....
2. At normal ambient temperature (25°C) about.....ml of water are lost in the urine,
.....ml are lost in sweat and.....ml are lost in the faeces.
3. Osmotic pressure is proportional to the.....
4. A buffer is a chemical solution designed to resist.....
5. The importance properties of water can be explained by.....
6. The cytoplasm is an example of a.....solution
7. Water has.....specific heat capacity when compared with similar compounds
8. If one puts a RBC in a hypertonic solution the cell.....
9. The special shape of the RBC allows it to.....
10. The normal blood volume for women is.....and for men.....
11. The process by which platelets are produced is called.....
12. Lymphocytes are produced in.....
13. The nutrients important in the prevention of anaemia are.....
14. Granulocytes are.....
15. The process by which phagocytes are attracted to a site of infection is called
.....

SECTION B. For the following indicate if true or false T or F. Each question carries 1 (one) mark

16. The normal percentage of neutrophils is 60-70%
17. Thrombocytes are made in the lymphatic nodules
18. The most abundant plasma protein are Globulins
19. The heart is surrounded by a membranous sac called epicardium
20. The heart can be thought of as two pumps
21. The arteries irrigating the heart are called coronaries
22. The contraction of the ventricles is called diastole
23. Stroke volume is equal to 50cm^3
24. The vagus stimulates the heart by decreasing the heart rate
25. The pressure inside the right ventricle during systole is 25 mmHg
26. Sympathetic stimulation causes vasodilation
27. Capillaries connect arterioles and venules
28. The capillaries in the liver are called sinusoids
29. Lymph circulates at a rate of 4.5 l/min.
30. Most carbohydrate absorption occurs in the jejunum

SECTION C. to be answered in the booklet provided. Answer any two (2) questions. Each question carries 20 marks

31. Explain the interchange of blood and tissue fluid. A clear diagram will add to the marks
32. Give a brief account of the process of digestion
33. Explain (i) how blood circulation is controlled
(ii) the role of organs and vessels

UNIVERSITY OF AGRICULTURE, ABEOKUTA
COLLEGE OF FOOD SCIENCE AND HUMAN ECOLOGY (COLFHEC)
DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

Second Semester 2008/2009 Session

March, 2010

FST 202: Food Biochemistry

Time: 2 Hrs.

INSTRUCTION

Answer all questions

1. The most abundant organic compounds in the universe is _____
2. _____ are polyhydroxy-aldehyde or ketone bearing also carbonyl or carboxyl groups and then simple derivatives.
3. Simple sugars which are not changeable by hydrolytic processes are known as _____
4. The carbonyl (Co) in Aldoses is in position _____
5. Hexoses have _____ carbon atoms.
6. Dextrorotary (D-hexoses) rotate the light to the _____
7. A state of equilibrium exists between the _____ and _____ somers in aqueous solution just as there is a similar equilibrium between conformers.
8. _____ is the chief end product of the digestion of the di and polysaccharides.
9. The most wide spread alditol having its isomer as mannitol is _____
10. The carbonyl group of sugars have the ability to condense with alcohols by eliminating H₂O molecules to give _____
11. The common table sugar is known as _____
12. Starches are made up of two components namely _____ and _____
13. Starch granule usually consists of layers laid down around a central region called _____
14. A process whereby the starch granule disintegrates and starch goes into solution (gel) which is irreversible is called _____
15. Sugars undergo browning in the absence of amino compounds under high temperature, a process called _____
16. An anaerobic phase in which energy, CO₂ and H₂O are released is known as _____
17. A stage in which the water gradually passes out of the interstices of the gel is called _____
18. _____ is a direct measure of the amount of energy required to overcome the attractive forces between adjacent molecules in a liquid so that individual molecules can escape from each other and enter the gaseous state.

19. _____ makes up 70 – 90% of the weight of most forms of life and represents the continuous phase of living organisms.
20. The presence of dissolved _____ causes the structure and properties of liquid water to change.
21. Two examples of Hexoses are _____ and _____.
22. A situation whereby a freshly prepared solution of glucose has a specific rotation of $+113^\circ$, which soon began to decrease and drops finally to $+52.7^\circ$ is termed _____.
23. DNA means _____.
24. A Ketose which corresponds both to glucose and to mannose is called _____.
25. _____ is produced through hydrogenation of glucose and used as a 70% concentrated syrup.
26. Sugar which differ from each other only by their configuration at C-2 can be transformed into each other by heating them in alkaline solution. This reaction is termed _____.
27. Sucrose is involved in the composition of caramelized products through _____.
28. High dose of galactose in the blood may be the origin of _____.
29. _____ is the formation of huge molecule networks of a particular texture in the mesh of which other molecules and the solvent can lodge.
30. _____ is the self-condensation of the aldehyde molecules.
31. When two water molecules approach each other closely, _____ occurs between the partial negative charge on the oxygen atom of one water molecule and the partial positive charge on a hydrogen atom of an adjacent water molecule.
32. _____ are the most abundant organic molecules in cells, constitution of 50% or more of their dry weight.
33. The amino acids in protein molecules are united in a head-to-tail arrangement through substituted amide linkages called _____.
34. Proteins are divided into two classes on the basis of their composition namely _____ and _____.
35. The non amino acid portion of a conjugated protein is called its _____.
36. _____ proteins consist of polypeptide chains arranged in parallel along a single axis to yield long fibers or sheets.
37. Example of protein that fall between the fibrous and globular types, resembling fibrous proteins in their long rodlike structures and the globular in their solubility in aqueous salt solutions is _____.
38. Proteins with two or more polypeptide chains are called _____.
39. _____ is the respiratory pigment of the red blood cell which consists of four polypeptide chains.
40. When globular/soluble proteins are exposed to extremes of pH or high temperatures for only short periods, causing them to undergo a physical change, this is known as _____.
41. A process in which an unfolded protein molecules spontaneously returns to its native biologically active form is called _____.
42. _____ are substances that have a greasy feel and that are insoluble in water, but soluble in non-polar solvents.
43. The essential components of lipids are aliphatic carboxylic acid known as _____.
44. _____ is a 3-carbon alcohol with 3-OH groups each of which can combine with a fatty acid.
45. _____ is formed by combining a fatty acid with one of the hydroxyl groups of the glycerol molecule.
46. Substances which have the same solubility characteristics as lipids are called _____.
47. Two examples of unsaturated fatty acids are _____ and _____.
48. Acids with two or more double bonds are _____ fatty acids.
49. Oils are liquid at room temperature. TRUE or FALSE?
50. Unsaturated fatty acids have lower melting point than saturated fatty acids. YES or NO?
51. Catalytic hydrogenation of unsaturated fatty acids hardens the fat. TRUE or FALSE?

52. Oxidation of lipids are responsible for _____
53. _____ is the main pigment responsible for photosynthesis.
54. The pink, red, violet and blue colours of flowers, fruits and vegetables are caused by _____
55. Flaronoids are pigment with _____ colours.
56. The chemical substances which the organism are not capable of synthesizing are known as _____
57. Water soluble vitamins are _____ and _____
58. Deficiency of vitamin _____ leads to a loss of vision
59. Vitamin _____ increases fertility
60. Two examples of fat soluble vitamins are _____ and _____
61. The structure of B1 makes it thermally sensitive. TRUE or FALSE?
62. Vitamin E is also known as ergocalciferol. TRUE or FALSE?
63. Degradation of chlorophyll can be achieved by heat treatment. TRUE or FALSE?
64. The ring structure formed in glucose is derived from the heterocyclic pyran ring called _____
65. _____ are those which on hydrolysis yield only amino acids and no other major organic or inorganic hydrolysis products.
66. _____ are those yielding not only amino acids but also other organic or inorganic components.
67. Proteins can be placed in two major classes based on their conformation namely _____ and _____
68. Four examples of Amino acids are _____, _____, _____ and _____
69. The are of separating, identifying, quantitating the different amino acids and determining their sequence in proteins is based on their _____ behaviour.
70. When a crystalline Zwitterionic amino acid is dissolved in water, A can act either as _____ or as _____
71. _____ are proteins specialized to catalyze biological reactions.
72. _____ catalyzes hydrolysis of urea to ammonia and CO₂.
73. The anzymes that catalyzes transfer of functional groups are called _____
74. _____ catalyzes formation of bonds with ATP cleavage.
75. The cofactor of Arguiabe is _____
76. _____ reactions are those which proceed at a rate exactly proportional to the concentration of one reactant.
77. _____ reactions are independent of the concentration of any reactant.
78. Factors affecting enzymes action include _____, _____ and _____
79. The spontaneous non enzymatic oxidation of lipids exposed to air is also called _____
80. Chlorophyllase catalysis the cleavage of _____
81. Example of volatile compounds that speed up the degradation of the chlorophyll I _____
82. Anthocyanins occur in nature as glycosides, the aglycones being known as _____
83. Two main groups of Tannins are _____ and _____
84. _____ are result from the enzymatic oxidation of polyphenols.
85. Deficiency of Vitamin D leads to _____ in the children and _____ in the adults
86. Another name for Vitamin B₅ is _____ and B₁₂ is _____
87. When _____ the _____ ra
- >?te is proportional to the product of the concentrations of two reactants, such reaction is known as _____
88. Enzyme present in papaw is _____ and pineapple is _____
89. _____ is the destruction of plants and animal cells by their own enzymes.

90. Browning of cells of mangoes, apples, yams due to exposure to air or damage is called _____ due to oxidation reaction.

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF FOOD SCIENCE AND HUMAN ECOLOGY (COLFHEC)

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

First Semester 2008/2009 Session

October, 2009

FST 201: Introduction to Food Technology

Time: 1Hr.

MATRIC NO. -----

COLLEGE:-----

DEPARTMENT: -----

INSTRUCTION

Answer all questions and submit both the question and OMR sheet


1. One of the following truly reflect African Food security problem
 - (a) Geometrical increase in population
 - (b) Advanced Post-harvest system
 - (c) Political instability (d) Consistency in government policies.
2. Which of the following is/are true about food spoilage?
 - (a) Biological changes involves activities of microorganisms
 - (b) Chemical changes are caused by activities of microbial enzymes
 - (c) Physical changes in foods include separation of phases for oily foods
 - (d) All of the above.
3. One of the following is an acidulant commonly used in preserving food?
 - (a) Sucrose (b) Sodium chloride
 - (c) cinnamic aldehyde (d) Acetic acid.
4. Which branch of food science focuses on the functional properties of protein?
 - (a) Food microbiology (b) Food Engineering
 - (c) Food Chemistry
 - (d) Food processing.
5. The application of science and engineering to production processing, diversification, preservation and utilization of food is _____
 - (a) Food Science (b) Food Technology (c) Food Engineering

- (d) Food Science and Technology.
6. During metabolism of 100g of protein, the volume of metabolic water produced is _____ (a) 60 ml (b) 40 ml (c) 107 ml (d) 100ml.
7. The carbohydrate that functions in reducing blood lipid is _____ (a) insoluble fibre (b) glycogen (c) lipoproteins (d) soluble fibre.
8. Size reduction operation involves all except _____ (a) sedimentation (b) pulverizing (c) crushing (d) grating.
9. Which of the following is true about size reduction operations? (a) It reduces surface area of solid particle (b) It increases surface area of solid particle (c) It increases required packing volume (d) none.
10. Which of the following is true about quality of food products? (a) maintenance of key attributes of food (b) degree of excellence (c) combination of characters which determines acceptance of foods (d) all of the above.
11. One of the following does not belong to the group (a) sensory factors (b) physical factors (c) quality factors (d) functional factors.
12. The amount of the major components of food such as water, fat, protein etc is called _____ (a) analytical composition (b) extraction (c) chemical composition (d) proximate composition.
13. Consumption of salmonella cells result in (a) intoxication (b) intoxicification (c) infection (d) intrusion.
14. Toxicants that are found inherent in foods are _____ (a) inherents (b) endorphins (c) exogenous (d) endogenous.
15. Which mechanisms are responsible for heat transfer in foods? (a) irradiation, high pressure, canning (b) conduction, convection, irradiation (c) radiation, conduction, convection (d) grinding, melting, evaporation.
16. The movement or migration of frying oil by concentration gradients is called _____ (a) heat transfer (b) mass transfer (c) heat exchange (d) food microstructure.
17. When a yam slice is placed in hot frying oil (a) there will not be change in the colour of the yam (b) oil uptake into yam is through mass transfer (c) a crust develops in the yam that has greater moisture content than the core. (d) the yam is the frying medium.
18. The term transgenic refers to plants or animals that are _____ (a) modified by transformation (b) modified by gene expression (c) modified by genetic engineering (d) modified by genetic mutation.

19. Genes that code for recognizable product, such as antibiotic resistance are _____ genes. (a) flag (b) durable (c) marker (d) recognizable.
20. The major property of polyvinyl chloride and polypropylene in storing dried foods is _____ (a) low moisture permeability (b) high moisture permeability (c) low salt permeability (d) high salt permeability.
21. The time required for a bacterial population to pass through one log cycle in which 90% of the organisms is killed is _____ (a) 12D concept (b) TDT (c) D values (d) none.
22. The preservation technique commonly referred to as a cold pasteurization is _____ (a) Food freezing (b) fermentation (c) Hurdle technology (d) food irradiation.
23. One of the following does not belong to the group. (a) food chemistry (b) Dairy science and Technology (c) Fruits and vegetable processing (d) meat science.
24. The study of how the body uses food after eating them to promote and maintain our health is _____ (a) Food Science (b) Nutrition science (c) Food Science and Nutrition (d) None.
25. A property of simple sugar include all except _____ (a) sweetness (b) caramelize when heated (c) fermented by microorganisms to form alcohols (d) form gels when heated.
26. Which of the following is/are false?
- a) All essential fatty acids are unsaturated
 (b) Palmitic acid is an unsaturated fatty acids
 (c) Oleic acid is an unsaturated fatty acid
 (d) fat contributes to food texture.
27. Which of the following index of protein quality is based on egg? (a) protein synthesis (b) Biological value (c) Nitrogen balance (d) Amino acid score.
28. One of the following is true about mixing operation. (a) mixing of liquids requires more energy than solids. (b) mixing of solids requires more energy than liquids. (c) mixing do not enhance physical and chemical interaction of foods (d) none.
29. One of the following methods can destroy effective microorganisms in foods but very expensive. (a) sun drying (b) pasteurization (c) refrigeration (d) irradiation.
30. What is the full meaning of PAH?
 (a) Polysaccharide Aromatic Hydrocarbons
 (b) Processing and Hygiene (c) Polycyclic Aromatic Hydrocarbons (d) None.
31. Nutritional quality of food may be assessed by all except _____ (a) calories provided (b) level of vitamins (c) protein quality (d) None.
32. When organism produces toxins inside the victim, the condition is ____ (a) intoxication (b) intoxicification (c) infection (d) poisoning.

33. Which of the following does not belong to the group. (a) fumigants (b) coumarins
(c) goitrogens (d) flavonoids.
34. An organism implicated in intoxication is _____ (a) *Vibrio comma* (b) *salmonella* spp (c) *Clostridium botilium* (d) *Esherichia coli*.
35. The equation that relates temperature in celcius and Fahrenheit is _____
(a) $T_c = 9/5 (T_f - 32^\circ)$ (b) $T_c = 5/9 (T_f - 32^\circ)$ (c) $T_c = 9/5 (T_f + 32^\circ)$ (d) $T_c = 5/9 (T_f + 32^\circ)$.
36. Which of the following is not the unit of temperature? (a) Celcius (b) Fahrenheit
(c) Kelvin (d) none.
37. The appropriate definition of thermodynamics is _____ (a) measure of the amount of matter in an object (b) study of how natural processes are affected by changes in temperature (c) transfer in energy due to differences in temperature (d) measure of disorder of a system.
38. The letters of PCR stand for _____
(a) polymerase crucial reaction
(b) polymerase circular RNA (c) polymerase chain reaction (d) polymerase correct recycling.
39. The enzymes responsible for softening in tomatoes is _____ (a) polymerase
(b) polygalacturonidase
(c) polygalacturonase (d) polyase.
40. When less than 1.0kg of radiation is used in treating food, it is called _____ (a) Radiation disinfections (b) Radurisation
(c) Radicidation (d) Radderppertization.
41. The innovative non-thermal method of food preservation that involves the use of short burst of high voltage to destroy microbes is _____ (a) pulsed electric fields
(b) oscillating magnetic fields (c) high pressure processing (d) pulsed light technology.
42. A typical physical change resulting in spoilage of food is _____ (a) Action of microorganisms fermenting carbohydrates into acids and alcohols (b) Action of microbial enzymes (c) Reduction in the levels of vitamins (d) Separation of phases in freshly ground peanut butter.
43. Which of the following is incorrect?
(a) Irradiation can cause loss of vitamins
(b) Irradiated food are not radioactive
(c) Irradiation of approved levels does not cause foods to heat up (d) Irradiation creates unique radiolytic products in foods not seen with any other processing treatments.
44. This food Scientist/Technologist whose work involves sampling raw products to ensure conformity to purchasing specifications (a) product development (b) marketing
(c) quality control (d) sensory research.
45. IFST is based in (a) USA (b) UK

- (c) South Africa (d) Nigeria.
46. One of the following vitamins is not fat soluble? (a) Vitamin A (b) Vitamin C
(c) Vitamin E (d) Vitamin K.
47. When niacin is deficient in human, its symptom include _____ (a) beriberi
(b) anemia (c) pellagra
(d) loss of appetite.
48. A major source of the precursor of Vitamin A is _____ (a) carrot (b) egg (c) liver
(d) fish.
49. A heat exchange operation that creates air pocket in the food matrix is _____
(a) boiling (b) roasting (c) popping
(d) sterilization.
50. One of the following do not belong to the group. (a) leucine (b) methionine
(c) threonine (d) cysteine.
51. Breakfast cereals, yam and potato flakes can be obtained using ____ (a) spray dryer
(b) Tunnel dryer (c) freeze dryer
(d) Roller dryer.
52. A typical example of synthetic toxicant in food is _____ (a) polycyclic aromatic hydrocarbons (b) Cyanogenic glucoside
(c) Aflatoxin (d) None.
53. The mathematical relationship used in estimating risk is
(a) $R = \frac{-[\ln(1 - P)]}{F}$ (b) $R = \frac{-[\ln(1 - P)]}{N}$
(c) $R = \frac{-[\ln(P - 1)]}{N}$ (d) $R = \frac{[\ln(P - 1)]}{F}$
54. The full meaning of IPM is _____
(a) International Processing Member
(b) Integrated Poultry Management
(c) Integrated Pest Management
(d) International Pest Management.
55. Which of the following is true about heat capacity of food? (a) It is not related to heat capacity of water (b) The lower its value the faster the food heats up. (c) It is not a function of food composition (d) None.
56. A food processing operation is said to be in a steady state when _____ (a) a system is in a disorder state (b) the temperature in the system remains constant with time (c) the temperature in the system varies with time
(d) none.
57. The first genetically engineered product approved for use is _____ (a) flavr savr tomatoes (b) microsensors (c) Renin
(d) Bovine somatotropin.
58. The process of recombining genes bearing a chosen trait into the DNA molecules of a new host is called _____ (a) Biotechnology

- (b) Genetic Biotechnology (c) Recombinant DNA Technology (d) Recombinant genetic engineering.
59. The preservation technique that involves placing different factors that affect microbial growth along its path is _____
- (a) ohmic heating (b) Hurdle Technology (c) Fermentation (d) dehydration.
60. What is the full meaning of MAP?
- (a) Multiple atmosphere packaging
(b) Modified atmosphere packaging
(c) Multiple atmosphere processing
(d) Modified atmosphere processing.
61. Which substance would not possess glycosidic bonds? (a) Galactose (b) Pectin
(c) Cellulose (d) lactose.
62. All the following are functional properties of polysaccharides except _____ (a) Gelation
(b) water binding (c) enhanced sweetness
(d) thickening.
63. Which of the following factors aids osmotic dehydration of solid foods? (a) Decrease in temperature (b) decrease in concentration of the solution (c) increase in temperature
(d) none.
64.  denotes
- (a) Profession storage (b) Permanent storage (c) packing (d) packaging
65. The ratio of nitrogen retained over the nitrogen absorbed x 100 is _____
- (a) Net protein unit (b) Amino acid score
(c) Biological value (d) Protein quality.
66. One of the following sensory tests do not measure difference and similarities between foods. (a) Triangle test (b) Ranking
(c) Scanning (d) Hedonic test.
67. What is the full meaning of BTU?
- (a) British thermal unit (b) Britain thermal unit (c) British treatment unit
(d) Britain treatment unit.
68. The relationship that defines/measures heat transfer in watts is _____ (a) $q = Q/A$
(b) $Q = qA$ (c) $A = q/Q$ (d) $A = Q/q$
69. Fruits produce the following compound which aids in the ripening process. (a) galacturonic acid (b) Urea (c) ethylene (d) salt.
70. The hormone that stimulates cow to produce more milk than feed is _____
- (a) chymosin (b) polygalacturonase
(c) bovine somatotropin (d) flavr savr.

MATRIC NO.

COLLEGE:.....

DEPARTMENT:

ANSWER SHEET

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UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF AGRICULTURAL MANAGEMENT, RURAL DEVELOPMENT AND CONSUMER
STUDIES

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

Second Semester 2007/2008 Session

December, 2008

FST 202: Food Biochemistry

Time: 2Hrs. 15mins

INSTRUCTION

Answer any four (4) questions

- 1a. What are the effects of solutes on water properties?
 - b. In the dehydration stage of non-enzymic browning reaction, show how hydroxyl methyl furfural is obtained from fructosamine.
 - c. Describe proteins based on their conformation.
 - d. Classify the 20 amino acids based on their polarity and illustrate a tetrapeptide chain.
-
- 2a. Define co-factors. Give four (4) examples of metal co-enzymes and their enzymes.
 - b. Describe the kinetic enzyme catalytic reaction to arrive at $V_o = \frac{V_{\max}(S)}{k_m + (S)}$
 - c. Enumerate the methods of enzyme immobilization.
 - d. What are the factors affecting enzyme action?
-
- 3a. Illustrate the types of isomerisation that can occur in carbohydrates.

- b. Give the names of the first 10 saturated fatty acids and 5 unsaturated fatty acids with their structural formula.
 - c. Explain the physical properties of fatty acids.
 - d. How will you describe the globular state of milkfat?
- 4a. Highlight the detailed reaction stages of Lipid Oxidation.
- b. What are the factors that influence the fat oxidation process?
 - c. Draw the structural formula of Riboflavin, give its functions, deficiency symptoms and diet sources.
- 5a. List the 3 broad categories of natural pigments and describe the degradation procedure of chlorophyll.
- b. (i) Define Anthocyanins and illustrate its structural formula with the names of R_1 and R_2 groups.
(ii) Give six (6) examples of fruits with the types of anthocyanidin contents.
 - c. Define the following: Flaronoids, Flavonones, Tannins, Quinones and Melanins .

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF AGRICULTURAL MANAGEMENT, RURAL DEVELOPMENT AND CONSUMER
STUDIES

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

First Semester 2007/2008 Session

July, 2008

FST 201: Introduction to Food Technology

Time Allowed: 1Hr.

INSTRUCTION

Answer all questions in the spaces provided and underline the correct answer(s) where necessary

NAME: ----- **MATRIC NO.** -----

DEPARTMENT:----- **COLLEGE** -----

1. Sterilization of a yam tuber using ionizing radiation is termed _____
2. Food infection and intoxication are collectively called _____
3. Quality factors of food that affects its utilization are referred to as _____
4. A child that is suffering from anaemia is deficient in _____
5. Heat transfer mechanism experienced during open sundrying of cassava chips is

6. A heat processing operation that creates air pockets in a food matrix is called

7. What is the full meaning of FAO?

8. The group of organism commonly used in the production of tempeh (a fermented product) is _____
9. What is the full meaning of GMP?
10. The ratio of retained nitrogen to nitrogen intake in percentage is called _____
11. Deficiency of vitamin *K* in the body results in _____
12. A major disadvantage of using silver in constructing food equipment is _____
13. Filtration, sedimentation, extraction and sieving are processing operation collectively called _____
14. Application of engineering principles in food processing is termed _____
15. The mild heat treatment method applied as a pre-processing operation is termed _____
16. A malnourished child with protruded tummy, thin arms and legs, as well as swollen body is suffering from _____
17. What is the full meaning of ADI

18. Food crops like soybeans, peanuts, are classified as _____
19. During equipment fabrication, the first step taken is _____
20. Most sensitive materials in food processing can be dried using special dryers called _____
21. The process whereby spoilage organisms lose their cellular integrity after being placed in a concentrated solution is termed _____
22. Cassava roots contains an inherent toxic component called _____
23. The major food component that regulates enzymic reactions in the body is _____
24. 50g carbohydrate multiplied by $V = x$ calories/g carbohydrate. What is V ?

25. The most important property in the separation of rice grains from its husks is _____
26. Mixing of liquid requires more energy than mixing of solids. **TRUE** or **FALSE**?
27. Gari is not a fermented product. **TRUE** or **FALSE**?
28. What is the full meaning of NAFDAC _____

29. *Lactobacillus bulgaricus* used in milk fermentation to obtain yoghurt reduces microbial load by increasing the pH. **TRUE** or **FALSE**?
30. *Aspergillus* spp are noted for the spoilage of raw milk. **TRUE** or **FALSE**?
31. Polycyclic aromatic hydrocarbon is a toxicological factor that is naturally present in a food material. **TRUE** or **FALSE**?
32. Phosphorus is an element that cannot be found in a protein structure. **TRUE** or **FALSE**?
33. The heat transfer mechanism between frying and a yam slice during vacuum frying is called _____
34. Size reduction process like dicing reduces surface area of food materials. **TRUE** or **FALSE**?
35. What is the full meaning of SON? _____

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF AGRICULTURAL MANAGEMENT, RURAL DEVELOPMENT AND CONSUMER
STUDIES

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

Second Semester 2006/2007 Session

December, 2007

FST 206: Fundamentals of Heat and Mass Transfer

Time Allowed: 2 Hrs.

INSTRUCTION

- (i) Answer All questions in section A and any other 2 (two) in Section B.*
- (ii) This question paper should not be transferred to any other candidate during the examination session.*

SECTION A

1. Explain the significance of Reynold's number in characterizing fluid flow.
2. During the process of heating, what happens to the psychometric properties of a sample of air?
3. Mention five important parameters that could be used to determine the rate of convective heat transfer from a hot surface exposed to bulk air flow.

4. Give two examples of products that could be handled using the following heat exchanger types:
 - (i) Plate heat exchanger.
 - (ii) Scrapped surface heat exchanger.
5. Warm water at 80°C is pumped through a pipe (diameter 300cm) at a rate of 3kg/s. Determine its flow regime.
6. List two differences between heat conduction and convection.
7. State Fourier's law of heat conduction and its underlying assumption.
8. State three examples of devices that could be used to institute forced connective flow of fluid.
9. State the dominant mode of heat transfer in each of the following:
 - (i) Popping of corn.
 - (ii) Cooling of a car radiator
 - (iii) Freezing of solid foods
 - (iv) Ice cream making.
10. State Fick's law of diffusion. What are the factors that affect the rate of mass diffusion?
11. Give two examples of food products that could be handled in a plate heat exchanger and a scrapped surface heat exchanger.

SECTION B

1. A stainless steel pipe ($k = 17 \text{ W / m}^\circ\text{C}$) is used to convey heated oil. The inside pipe surface temperature is 130°C . The pipe has a diameter of 8cm, a thickness of 2cm and is insulated with a material of 0.04m thick ($k = 0.035 \text{ W / m}^\circ\text{C}$) if the outer insulation temperature is 25°C , calculate the temperature of the interface.

2. Determine the rate of water evaporated from a tray full of water. Air at a velocity of 2 m / s is flowing over the tray. The temperature of water and air is 25°C . The width of the tray is 45cm and its length along the direction of air flow is 20cm. The diffusivity of water vapour in air is $D = 0.26 \times 10^{-4} \text{ m}^2 / \text{s}$. Take the relative humidity of air as 50%.

3. (i) Prior to use in a drying process, ambient air at 28°C ; 75% RH is conditioned by heating to 80°C . If the air flow in the heater is 2.0 kg/s , calculate the required heating rate and determine the heated air properties.

(ii) If 2kg of fresh air in (i) above is mixed with another air of 3kg at 35°C and 40% RH, what will be the psychometric properties of their mixture?

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF AGRICULTURAL MANAGEMENT, RURAL DEVELOPMENT AND CONSUMER
STUDIES

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

Second Semester 2006/2007 Session

December, 2007

FST 204: Introduction to Engineering Thermodynamics **Time Allowed:** 2½ Hrs.

INSTRUCTION

(iii) *Answer All questions in section A and any other two in Section B.*

- (iv) ***This question paper should not be transferred to any other candidate during the examination session.***

SECTION A

1. Why in your opinion is the study of engineering thermodynamics important to a Food Scientist/Technologist?
2. Outline various characteristics of internal Energy of a gaseous system.
3. Define and give two suitable examples of real life systems that could be classified as: (i) open systems (ii) closed systems.
4. What is/are the major differences between a saturated and superheated steam?
5. Write out the full complement of the steady flow Energy equation (SFEE) and generate the final form of the equation for each of the following with justifications:
(i) Boiler (ii) Nozzle.
6. Use a 2-dimensional graph to show the shapes of curves depicting isothermal, isobaric and isochoric process in a system of fluid.
7. What are the conditions for the reversibility of thermodynamic process undergone by a fluid system?
8. What are the factors often considered in choosing the kind of fuel to be used in a food manufacturing factory?

9. List three desirable properties of a fluid used as a heating agent in a manufacturing plant.
10. Outline the uses of the following devices in a process plant:
(i) Thermocouples (ii) Hygrometers (iii) Barometers (iv) Compressors
(v) Vacuumeters (vi) Bomb calorimeter.
11. What are ideal gases? Why is the specific heat of an ideal gas at constant pressure greater than that at constant volume?

SECTION B

1. 1kg of a fluid expands reversibly according to a linear law from 4.2 bar to 1.4 bar. The initial and final volumes are 0.004m^3 and 0.02m^3 respectively. The fluid is then cooled reversibly at constant pressure and finally compressed reversibly according to a law $pV = \text{Constant}$. Calculate the work done during each process stating whether it is done on the fluid or by the fluid and calculate the net work done in the cycle. Sketch the cycle on a p-V diagram.
2. (i) A boiler receives 250kg/h feed water at 50°C and enthalpy of 209kJ/kg and converts to saturated steam having temperature of 130°C . Determine the required heating rate for this conversion.
- (ii) Assuming this steam has a quality of 85%, determine its specific enthalpy, specific volume and specific internal energy.
3. (i) 1.2kg of air kept at absolute pressure of 6 bar and temperature of 300K expands at constant temperature until its volume increases four times. Determine the initial and final volume and final pressure of the air. Note: $pV = mRT$ where m is mass of the gas.
- (ii) A steam enters a nozzle at a velocity of 240m/s and enthalpy change across the nozzle is 250kJ/kg. What is the exit velocity if there is no heat transfer in the nozzle.

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF AGRICULTURAL MANAGEMENT, RURAL DEVELOPMENT AND CONSUMER
STUDIES

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

Second Semester 2006/2007 Session

December, 2007

FST 202: Food Engineering Applications

Time Allowed: 2½ Hrs.

INSTRUCTION

(i) Answer any four questions

(ii) This question paper should not be transferred to any other candidate during the examination session.

1. (a) Describe the changes in the physical properties of starch before, during and after heating in water.
- (b) What are the properties of Amylose, Amylopectin and Glycogen?
- (c) Write out the structure, functions, deficiencies and sources of Vitamin A.

2. (a) With the aid of a well labeled diagram, draw the non-enzymatic browning reaction (Hodge's scheme).
- (b) Show the detailed reaction equations of dehydration stage of non-enzymatic browning reaction.
- (c) Explain the enolization of sugars

3. (a) Write out the structural formulae and the physical states of the first 10 fatty acids.

- (b) Explain the reaction mechanism of fatty acids.
- (c) Describe the globular state of fat.
4. (a) (i) Classify the 20 amino acids based on their polarity.
- (ii) Draw the structure of a named tetrapeptide.
- (iii) Based on their conformation, describe the major classes of protein, give an example each.
- (b) (i) Highlight the factors affecting enzyme action.
- (ii) Enumerate the uses of enzymes
5. (a) Define the following pigments: flavonoids, flavonones, Tannins, Quinones and Melanins.
- (b) What is a co-factor? Write two examples of enzymes that require Zn^{2+} , Mg^{2+} , Mn^{2+} , Fe^{2+} and Cu^{2+} as co-factors.
- (c) Using Michaelus-menten theory equations, describe the kinetics of enzyme catalysed reactions that will arrive at;
- $$V_o = \frac{V_{max} [s]}{k_m + [s]} \text{ and } k_m = [s]$$
- (d) Explain the solvent properties of water.

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF AGRICULTURAL MANAGEMENT, RURAL DEVELOPMENT AND CONSUMER STUDIES

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

INSTRUCTION

Answer all questions in the spaces provided and underline the correct answer(s) where necessary

NAME: ----- **MATRIC NO.** -----

DEPARTMENT:----- **COLLEGE** -----

1. Food infection and intoxication are collectively called -----
2. A child that is suffering from anaemia is deficient in -----
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4. What is the full meaning of GMP? -----
5. Deficiency of vitamin K in the body results in -----
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13. The major food component that regulates enzymic reactions in the body is_____
14. Gari is not a fermented product. **TRUE** or **FALSE**?
15. What is the full meaning of NAFDAC_____

UNIVERSITY OF AGRICULTURE, ABEOKUTA

COLLEGE OF FOOD SCIENCE AND HUMAN ECOLOGY

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

B.Sc. Degree Examinations

Second Semester 2009/2010 Session

October, 2010

FST 202: Food Biochemistry

Time: 1hr. 30 mins.

Answer all questions

1. The most abundant organic compound in the universe is _____.
2. Simple sugars which are not changeable by hydrolytic processes are known as _____.
3. Dextro-rotatory (D-hexoses) rotate the light to the _____.
4. The common table sugar is known as _____.
5. Starch granule usually consists of layers laid down around a central region called _____.
6. Four hexoses are _____, _____, _____ and _____.
7. Heat of vapourization of water is _____.
8. Three broad categories of natural pigments are _____, _____ and _____.
9. Example of pentoses are _____, _____ and _____.
10. _____ is the starting material of the Meyerhol-Embden cycle.
11. Another name for laevulose is _____.
12. _____ is the most wide spread alditol, having its isomer as _____.
13. Glycogen are water soluble at ambient temperature. TRUE or FALSE?
14. Erucic acid is a saturated fatty acid. YES or NO?
15. The four most abundant fatty acid are _____, _____, _____ and _____.
16. Oils are naturally very rich in unsaturated fatty acid. TRUE or FALSE?
17. Vitamin B₉ is also known as _____.
18. Chlorophyllase catalyses the cleavage of _____.
19. _____ are proteins specialized to catalyze biological reactions.
20. _____ catalyzes hydrolysis of urea to ammonia and CO₂.

21. The cofactor of Arginase is _____.
22. _____ reactions are independent of the concentration of any reactant.
23. Factors affecting enzymes action include _____, _____ and _____.
24. Substances which have the same solubility characteristics as lipids are called _____.
25. Acids with two or more double bonds are _____ fatty acids.

-2-

26. _____ is the main pigment responsible for photosynthesis.
27. The spontaneous non enzymatic oxidation of lipids exposed to air is called _____.
28. Two main groups of Tannins are _____ and _____.
29. A situation whereby a freshly prepared solution of glucose has a specific rotation of $+113^\circ$ which soon begin to decrease and drops finally to $+52.7^\circ$ is termed _____.
30. The non amino acid portion of conjugated protein is called its _____.
31. _____ is the self-condensation of two aldehyde molecules.
32. Sugar which differ from each only by their configuration at C-2 can be transformed into each other by heating them in alkaline solution. This reaction is termed _____.
33. High dose of galactose in the blood may be the origin of _____.
34. Proteins are divided into two classes on the basis of their composition namely _____ and _____.
35. Proteins with two or more polypeptide chains are called _____.
36. _____ are substances that have a greasy feel and that are insoluble in water, but soluble in non-polar solvents.
37. Oils are liquid at room temperature . TRUE or FALSE?
38. Vitamin _____ increases fertility.
39. Flavonoids are pigment with _____ colour.
40. The chemical substances which the organism are not capable of synthesizing are known as _____.
41. Deficiency of vitamins _____ leads to a loss of vision.
42. The structure of B₁ makes it thermally sensitive. TRUE or FALSE?
43. Degradation of chlorophyll can be achieved by heat treatment. TRUE or FALSE?
44. The ring structure formed in glucose is derived from the heterocyclic pyran ring called _____.
45. The pink, red, violet and blue colours of flowers, fruits and vegetables are caused by _____.
46. DNA means _____.
47. Another name for Vitamin B₅ is _____.
48. When the rate is proportional to the product of the concentrations of two reactants, such reaction is known as _____.

49. Enzyme present in pawpaw is _____ and pineapple is _____.
50. _____ is the destruction of plants and animal cells by their own enzymes.
51. When a crystalline Zwitterionic amino acid is dissolved in water, it can act either as _____ or as _____.
52. _____ catalyzes formation of bonds with ATP cleavage.
53. A stage in which the water gradually passes out of the interstices of the gel is called _____.

UNIVERSITY OF AGRICULTURE, ABEOKUTA
DEPARTMENT OF NUTRITION AND DIETETICS
2007/2008 FIRST SEMESTER EXAMINATION

COURSE: FOOD PREPARATION AND PROCESSING (NUT 201)

INSTRUCTION: ANSWER ALL QUESTIONS IN SECTION A

TIME ALLOWED: 1 HOUR

SECTION A

1.is the reason why anything gets produced, and.....and
.....together are the source of all manmade stress on the natural environment.
2. Household items comprise of.....and.....
3.as well as.....must be considered when purchasing anything.
4. Any substance used to lower the quality of a foodstuff is called.....and.....
is an example of such substance.
5. The purpose of cooking food is to make it.....and.....to eat.

SECTION B ANSWER QUESTION ONE (1) COMPULSORY AND ANY OTHER ONE (1) QUESTION

1. a. What are the factors affecting food consumption in Nigeria.
b. Define the following terms
(i) Food Production
(ii) Food Adulteration
(iii) Co-operative buying
c. Write four (4) advantages of buying food in season
2. a. As a home maker, what are the five (5) points to keep in mind when selecting household Equipments
b. List five (5) examples of Household equipments
3. Define five (5) methods of cooking and give 2 examples of foods cooked by each.

UNIVERSITY OF AGRICULTURE, ABEOKUTA
DEPARTMENT OF NUTRITION AND DIETETICS
2009/2010 FIRST SEMESTER EXAMINATION

COURSE: FOOD COMMODITIES (NTD 201)

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS

TIME ALLOWED: 2 HOURS

1 (a) Copy and complete the table below:

S/N	FOOD COMMODITIES	BRIEF DESCRIPTION	NUTRITIONAL IMPORTANCE	MAJOR FOOD SOURCES
1.	Roots and Tubers			
2.	Cereals			
3.	Nuts and Legumes			
4.	Fruits and Vegetable			

- (b) Foods of animal origin are useful compliments to most plant-based diet. Discuss.
- 2 (a) Classify food using the food guide pyramid
(b) State the uses of market survey
3. Write short notes on quality points to look out for when shopping for food commodities
4. What points do you bear in mind when shopping in order to make good selection?

UNIVERSITY OF AGRICULTURE, ABEOKUTA
DEPARTMENT OF NUTRITION AND DIETETICS
2009/2010 FIRST SEMESTER EXAMINATION

COURSE: NUTRITION AND MICROBIOLOGY INTERPHASE (NTD 203)

INSTRUCTION: ANSWER ALL QUESTIONS

TIME ALLOWED: 1 HOUR 45MINS.

- 1.(a) Explain the following terms:
 - (i) Food spoilage
 - (ii) Food Safety
 - (iii) Food Toxins
 - (iv) Fermentation
 - (v) Food Microbiology
 - (b) List ten (10) bacteria associated with food borne diseases.
- 2 (a) Using a sketch diagram, highlight the effect of micro-organisms on food substances
 - (b) State the spoilage micro-organisms associated with the following food substances:
 - (i) Fresh meat
 - (ii) Fruit juices
 - (iii) Milk and milk products
 - (iv) Bread
 - (v) Eggs
3. Write short notes on the following
 - (i) Dysentery
 - (ii) Tuberculosis
 - (iii) Cholera

UNIVERSITY OF AGRICULTURE, ABEOKUTA
DEPARTMENT OF NUTRITION AND DIETETICS
2009/2010 FIRST SEMESTER EXAMINATION

COURSE: HUMAN PHYSIOLOGY (NTD 205)

INSTRUCTION: ANSWER ALL QUESTIONS IN SECTION A AND B

TIME ALLOWED: 1 ½ HOUR

SECTION A: Short answer. Each question carries 1 (one) mark

1. One can think of body water as distributed into two compartments
and.....
2. At normal ambient temperature (25°C) about.....ml of water are lost in the urine,
.....ml are lost in sweat and.....ml are lost in the faeces.
3. Osmotic pressure is proportional to the.....
4. A buffer is a chemical solution designed to resist.....
5. The importance properties of water can be explained by.....
6. The cytoplasm is an example of a.....solution
7. Water has.....specific heat capacity when compared with similar compounds
8. If one puts a RBC in a hypertonic solution the cell.....
9. The special shape of the RBC allows it to.....
10. The normal blood volume for women is.....and for men.....
11. The process by which platelets are produced is called.....
12. Lymphocytes are produced in.....
13. The nutrients important in the prevention of anaemia are.....
14. Granulocytes are.....
15. The process by which phagocytes are attracted to a site of infection is called

.....
SECTION B. For the following indicate if true or false T or F. Each question carries 1 (one) mark

16. The normal percentage of neutrophils is 60-70%
17. Thrombocytes are made in the lymphatic nodules
18. The most abundant plasma protein are Globulins
19. The heart is surrounded by a membranous sac called epicardium
20. The heart can be thought of as two pumps
21. The arteries irrigating the heart are called coronaries
22. The contraction of the ventricles is called diastole
23. Stroke volume is equal to 50cm^3
24. The vagus stimulates the heart by decreasing the heart rate
25. The pressure inside the right ventricle during systole is 25 mmHg
26. Sympathetic stimulation causes vasodilation
27. Capillaries connect arterioles and venules
28. The capillaries in the liver are called sinusoids
29. Lymph circulates at a rate of 4.5 l/min.
30. Most carbohydrate absorption occurs in the jejunum

SECTION C. to be answered in the booklet provided. Answer any two (2) questions. Each question carries 20 marks

31. Explain the interchange of blood and tissue fluid. A clear diagram will add to the marks
32. Give a brief account of the process of digestion
33. Explain (i) how blood circulation is controlled
(ii) the role of organs and vessels