



MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.



MUST KNOW CONCEPTS

MKC

BIOTECH

2020-21

Course Code & Course Name : 16BTE01 - FOOD TECHNOLOGY

Year/Sem/Sec :III/ V

S.No.	Term	Notation (Symbol)	Concept / Definition / Meaning / Units / Equation / Expression	Units
Unit-I : FOOD CONSTITUENTS AND DERIVATIVE FACTORS				
1.	Sensory Analysis	-	Sensory Analysis deals with how the food is adjudged by a consumer.	-
2.	Food regulation	-	Food regulation ensures Industry lobbying, local to international rules, Quality and food safety	-
3.	General formula for Carbohydrates	-	$C_m(H_2O)_n$	-
4.	Refined carbohydrates	-	Refined carbohydrates are the carbohydrates that are highly processed. Hence they're stripped off of the initial minerals although the number of calories remains constant	-
5.	Glycogen	-	Glycogen is stored in the liver by the body and used during intense exercising	-
6.	Dietary fibers	-	Dietary fibers is to change how nutrients and chemicals are absorbed	-
7.	Reducing sugars	-	Free aldehyde or ketone group are called reducing sugars	-
8.	Essential Fatty Acids	-	EFA's cannot be synthesized by the body and have to be supplied by an external source	-
9.	Omega-3 18:4	-	Omega-3 18:4 means that the chain has 18 carbons with 4 double bonds and the first double bond is at the third place	-
10.	Vaccenic acid	-	The class of trans-fat present in meat is Vaccenic acid	-
11.	Hydrogenated oils	-	Hydrogenated oils used in fast foods are unhealthy but they have a long shelf life and hence less refrigeration is required.	-
12.	Proteins	-	Proteins are popularly used in food processing industry because of their water binding capacity and ability to coagulate on heating	-
13.	Biological Value (BV)	-	Biological Value (BV) refers to the	-

			amount of protein absorbed by the body from a food source	
14.	Physical contamination	-	Foreign objects entering food is called physical contamination of food	-
15.	Processing contaminants	-	Processing contaminants are the contaminants that are generated during the processing of food and hence are hard to control	-
16.	Emerging contaminants	-	Certain new contaminants called emerging contaminants are contaminants which are a relatively new discovery	-
17.	Food Technology	-	Food Technology is a science branch that deals with the techniques involved in production, processing, preservation, packaging, labeling, quality management, and distribution of food products	-
18.	Food Science	-	It is a distinct field involving the application of basic sciences such as chemistry and physics, culinary arts, agronomics and microbiology	-
19.	Perishable foods	-	Perishable foods are foods that spoil quickly within one or two days	-
20.	Semi perishable foods	-	Semi perishable foods can last for 1-2 weeks	-
21.	Non-perishable foods	-	Non-perishable are those foods that generally last for one year	-
22.	Minimally processed foods	-	These are processed as little as possible in order to retain the quality of fresh foods	-
23.	Preserved foods	-	Foods do not change the character of the product substantially	-
24.	Food derivatives	-	In industry, components of foods may be obtained from the raw product through purification	-
25.	Food deterioration	-	Food deterioration is often associated with advanced spoilage, which may make food unfit for human consumption	-
Unit-II : GENERAL ENGINEERING ASPECTS AND PROCESSING METHODS				
26.	Physical entity	-	Physical entity, which can be observed and/or measured, is defined qualitatively by a dimension	-
27.	Primary dimensions	-	Primary dimensions, such as length, time, temperature, and mass, express a physical entity	-
28.	Secondary dimensions	-	Secondary dimensions involve a combination of primary dimensions	-
29.	Elastic deformation	-	Deformation appears instantly with the application of stress and disappears instantly with the removal of stress	-

30.	Plastic deformation	-	Deformation does not occur as long as the stress is below a limit value known as yield stress.	-
31.	Viscous deformation	-	Deformation (flow) occurs instantly with the application of stress and it is permanent. The rate of strain is proportional to the stress	-
32.	Thermal properties of food	-	Thermal conductivity, thermal diffusivity, specific heat, latent heat of phase transition and emissivity	-
33.	Ohmic heating	OH	Ohmic heating is a technique whereby a material is heated by passing an electric current through it	-
34.	Bulk density	ρ	Bulk density is defined as the mass of many particles of the material divided by the total volume they occupy	-
35.	Porosity	Φ	Porosity is the percentage of air between the particles compared to a unit volume of particles	-
36.	Apparent specific gravity	-	Apparent specific gravity is the ratio of the weight of a volume of the substance to the weight of an equal volume of the reference substance	-
37.	Specific Gravity	-	Specific Gravity is a dimensionless unit defined as the ratio of density of the substance to the density of water at a specified temperature	-
38.	Thermal conductivity	k	Thermal conductivity is a measure of the ability of a material to transfer heat	-
39.	Viscosity	μ	Viscosity is a resistance of a fluid which is being deformed by either shear stress or tensile stress	-
40.	Thermal diffusivity	α	The ratio of thermal conductivity to the 'volumetric heat capacity' of the material	-
41.	Specific heat	L	The specific heat is the amount of heat per unit mass required to raise the temperature by one degree Celsius without change in surface	-
42.	Latent heat	Q	The quantity of heat absorbed or released by a substance undergoing a change of state	-
43.	Preliminary methods	-	Cleaning, sorting and grading	-
44.	Cleaning	-	Cleaning involves the separation of contaminants from the desired raw materials	-
45.	Sorting	-	Sorting involves the separation of the raw materials into different categories.	-
46.	Grading	-	Grading involves the separation of the raw materials based on the overall quality	-

47.	Dry cleaning methods	-	Dry cleaning methods which include screening, brushing, aspiration, abrasion and magnetic separation	-
48.	Wet cleaning methods	-	Wet cleaning methods which include soaking, spraying, flotation, ultrasonic cleaning, filtration and settling	-
49.	Types of sorting	-	Weight sorting, Shape sorting, Size sorting and Photometric or colour sorting	-
50.	Forces used in size reduction	-	Compressive, impact, attrition or shear and cutting	-
Unit-III : PRODUCTION AND UTILISATION OF FOOD PRODUCTS				
51.	Cereal	-	A cereal is any grass cultivated for the edible components of its grain composed of the endosperm, germ, and bran	-
52.	Types of fruits processing system	-	Small-Scale Processing, Intermediate-Scale Processing, Large-Scale Processing	-
53.	Small-Scale Processing.	-	This is done by small-scale farmers for personal subsistence or for sale in nearby markets	-
54.	Intermediate-Scale Processing	-	In this scale of processing, a group of small-scale processors pool their resources	-
55.	Large-Scale Processing	-	Processing in this system is highly mechanised and requires a substantial supply of raw materials for economical operation	-
56.	Types of fruits processing methods	-	Freezing, Dehydration, Canning	-
57.	Spice	-	A spice is a seed, fruit, root, bark, or other plant substance primarily used for flavoring or coloring food	-
58.	Categories of spices	-	Major spices, Seed spices, Tree spices, Herbal spices, Miscellaneous spices	-
59.	Sterilization of spices	-	Fumigation with ethylene oxide treatment, Irradiation, Steam treatments, High hydrostatic pressure	-
60.	Fats and oils	-	Fats and oils are water-insoluble compounds consisting of mainly triacylglycerols: three fatty acids esterified to a glycerol molecule	-
61.	Confectionery	-	Confectionery is the art of making confections, which are food items that are rich in sugar and carbohydrates	-
62.	Types of confectionery	-	Sugar confectionery, Chocolate confectionery, Flour confectionery, Milk-based confectionery	-
63.	Toffee	-	Toffee is a confection made by	-

			caramelizing sugar or molasses along with butter, and occasionally flour	
64.	Types of chocolate	-	Dark chocolate, Milk chocolate, White chocolate	-
65.	Beverage	-	Beverage is a liquid intended for human consumption	-
66.	Non-alcoholic drink	-	A non-alcoholic drink is one that contains little or no alcohol	-
67.	Fruit squash	-	Produced using strained fruit juice, 45% sugar and preservatives.	-
68.	Fruit juice concentrates	-	Water removed from fruit juice by heating or freezing.	-
69.	Fruit nectars	-	Mixture of fruit pulp, sugar and water which is consumed as one shot.	-
70.	Dairy products	-	Dairy products or milk products are a type of food produced from or containing the milk of mammals	-
71.	Skim milk	-	Skim milk is milk with zero fat content	-
72.	Poultry	-	Poultry refers to domestic fowl reared for their flesh, eggs or feathers and includes chickens, ducks, turkeys and pigeons	-
73.	Abattoir	-	It is a food factory where all the operations are dictated by the standards of hygiene and animal welfare.	-
74.	Carcass	-	The harvested dressed animal, wherein the hide, hooves, head and internal organs are removed.	-
75.	Lairage	-	Place where the animals are rested before slaughtering to preserve enough glycogen to be converted to lactic acid	-
Unit-IV : PRESERVATION METHODS				
76.	HTST	-	High-Temperature Short-Time (HTST) method of pasteurization, milk is exposed to a temperature of 71° C	-
77.	Food preservation	-	Food preservation is the process of treating and handling food to stop or greatly slow down spoilage caused or accelerated by microorganisms.	-
78.	Drying	-	Drying is a method of food preservation that works by removing water from the food, which inhibits the growth of microorganisms.	-
79.	Methods for drying	-	Bed dryers, Fluidized bed dryers, Freeze Drying, Shelf dryers, Spray drying, Sunlight	-
80.	Freezing	-	Freezing is also one of the most commonly used processes commercially and domestically for preserving.	-
81.	Smoking	-	Smoking is the process of flavoring, cooking, or preserving food by exposing	-

			it to the smoke from burning wood.	
82.	Hot smoking	-	Hot smoking exposes the foods to smoke and heat in a controlled environment	-
83.	Smoke-baking	-	Smoke-baking refers to any process that has the attributes of smoking with either roasting or baking	-
84.	Cold smoking	-	Cold smoking can be used as a flavor enhancer for items such as pork chops, beef steaks, chicken breasts, salmon and scallops	-
85.	Vacuum-packing	-	Vacuum-packing stores food in a vacuum environment, usually in an airtight bag or bottle.	-
86.	Pickling	-	Pickling, also known as brining or corning, is the process of preserving food by anaerobic fermentation in brine.	-
87.	Chemical pickling	-	Chemical pickling, the food is placed in an edible liquid that inhibits or kills bacteria and other micro-organisms.	-
88.	Fermentation pickling	-	Fermentation pickling, the food itself produces the preservation agent, typically by a process that produces lactic acid.	-
89.	Lye	-	Sodium hydroxide (lye) makes food too alkaline for bacterial growth.	-
90.	Pasteurization	-	Pasteurization is a process which slows microbial growth in food.	-
91.	Canning	-	Canning involves cooking food, sealing it in sterile cans or jars, and boiling the containers to kill or weaken any remaining bacteria.	-
92.	Jellying	-	Food may be preserved by cooking in a material that solidifies to form a gel	-
93.	Potting	-	A traditional British way of preserving meat is by setting it in a pot and sealing it with a layer of fat	-
94.	Jugging	-	Meat can be preserved by jugging, the process of stewing the meat in a covered earthenware jug or casserole.	-
95.	Irradiation	-	Irradiation of food is the exposure of food to ionizing radiation; either high-energy electrons or X-rays from accelerators, or by gamma rays	-
96.	Pulsed electric field	-	Pulsed electric field (PEF) processing is a method for processing cells by means of brief pulses of a strong electric field.	-
97.	Modified atmosphere	-	It is a way to preserve food by operating on the atmosphere around it	-
98.	Burial in the ground	-	Burial of food can preserve it due to a variety of factors: lack of light, oxygen,	-

			cool temperature, pH or desiccants in the soil.	
99.	High pressure food preservation	-	Pressed inside a vessel exerting 70,000 pounds per square inch or more, food can be processed while disabling microorganisms and slowing spoilage	-
100.	Gas-flushing	-	In gas flushing the package is flushed with a desired gas mixture, as in compensated vacuum the air is removed totally and the desired gas mixture then inserted	-
Unit-V : FOOD PACKAGING				
101.	Food packaging	-	Food packaging is packaging for food. A package provides protection, tampering resistance, physical, chemical, or biological needs.	-
102.	Food Authenticity	-	Food Authenticity means the food should match the description on the labels.	-
103.	Use by date	-	Use by date is mentioned for perishable items.	-
104.	Best before date	-	Best before date is used to indicate when the item starts decaying/getting spoilt	-
105.	Containment	-	Containment means, simply, to contain products to enable them to be moved or stored.	-
106.	Communication function	-	The communication function of packaging not only includes the information provided by the written text, but also elements of the packaging design such as package shape, color, recognized symbols or brands.	-
107.	Primary package	-	The first-level package that directly contacts the product is referred to as the primary package.	-
108.	Secondary package	-	The secondary package contains two or more primary packages and protects the primary packages from damage during shipment and storage	-
109.	Tertiary package	-	The tertiary package is the shipping container, which typically contains a number of the primary or secondary packages. It is also referred to as the distribution package.	-
110.	Unit load	-	A unit load means a group of tertiary packages assembled into a single unit.	-
111.	Consumer packaging	-	Consumer packaging means a package that will be delivered to the ultimate consumer in the retail store.	-
112.	Industrial packaging	-	Industrial packaging means a package	-

			for warehousing and distribution to the retail store.	
113.	Plastics	-	Plastics are a special group of polymers that can be formed into a wide variety of shapes using controlled heat and pressure	-
114.	Kraft paper	-	It is made using the sulfate (kraft) chemical pulping process, and is usually produced from soft wood.	-
115.	Bleached paper	-	Bleached paper is produced using bleached pulps that are relatively white, bright, and soft.	-
116.	Greaseproof	-	Greaseproof is a dense, opaque, non-porous paper made from highly refined bleached kraft pulp	-
117.	Waxed paper	-	Waxed paper is produced by adding paraffin wax to one or both sides of the paper during drying.	-
118.	Vegetable parchment	-	Vegetable parchment is produced by adding concentrated sulfuric acid to the surface of the paper to swell and partially dissolve the cellulose fibers.	-
119.	Whiteboard	-	Whiteboard is made with a bleached pulp liner on one or both sides to improve appearance and printability, and the remaining part is filled with low-grade mechanical pulp.	-
120.	Linerboard	-	Linerboard is usually made from softwood kraft paper and is used for the solid faces of corrugated board.	-
121.	Foodboard	-	Foodboard is used to produce cartons that are suitable for direct food contact	-
122.	Glass	-	Glass is defined as “an amorphous inorganic product of fusion that has been cooled to a rigid condition without crystallizing”	-
123.	Oxygen scavenging	-	Oxygen scavenging is related to oxidation of the scavenging agents to consume oxygen.	-
124.	Active packing	-	Packaging usually involves an interaction between the packaging components and the food product beyond the inert passive barrier function of the packaging material	-
125.	Tinplate	-	Tinplate is a composite of tin and steel made by electrolytic coating of bare steel with a thin layer of tin to minimize corrosion.	-
Placement Questions				
126.	Food safety	-	The causes, prevention and communication dealing with food borne	-

			illness	
127.	Food microbiology	-	The positive and negative interactions between microorganisms and foods	-
128.	Food preservation	-	The causes and prevention of quality degradation	-
129.	Food engineering	-	The industrial processes used to manufacture food	-
130.	Product development	-	The invention of new food products	-
131.	Food chemistry	-	The molecular composition of food and the involvement of these molecules in chemical reactions	-
132.	Food technology	-	The technological aspects of food	-
133.	Food physics	-	The physical aspects of foods (such as viscosity, creaminess, and texture)	-
134.	Carbohydrate	-	A carbohydrate is an organic compound with the general formula $C_m(H_2O)_n$, that is, consisting only of carbon, hydrogen and oxygen.	-
135.	Glycemic Index	-	The glycemic index of a carbohydrate represents how quickly its consumption increases blood sugar levels.	-
136.	Fats	-	Fats consist of a wide group of compounds that are generally soluble in organic solvents and largely insoluble in water.	-
137.	Trans fat	-	Trans fat is the common name for unsaturated fat with trans-isomer fatty acids	-
138.	Obesity	-	Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems.	-
139.	Heterocyclic Amines	-	HCAs form when a meat is directly exposed to a flame or very high-temperature surface.	-
140.	Food energy	-	Food energy is the amount of energy available from food that is available through respiration	-
141.	Dietary minerals	-	Dietary minerals are the chemical elements required by living organisms, other than the four elements carbon, hydrogen, nitrogen, and oxygen present in common organic molecules.	-
142.	Trace minerals	-	Other minerals like chromium, copper, iodine, iron, selenium, and zinc are called trace minerals because we only need very small amounts of them each day	-

143.	Gelatinization	-	On heating starch in the presence of water, the crystalline structure of the starch granules is lost irreversibly by a process	-
144.	Retrogradation	-	The process of re-association of the starch granules on cooling of the gelatinized starch or the starch paste	-
145.	Rancidity	-	The deteriorative changes in fats and oils are termed rancidity	-
146.	Flavour reversion	-	In some cases containing high content of PUFA (Linolenic acid) lose the flavor giving a taste to it. This is called flavour reversion.	-
147.	Auto-Oxidation	-	Oxidation via a self-catalytic mechanism is the main reaction, which takes place in oil becoming rancid	-
148.	Lipolysis	-	Rancidity in presence of enzymes, heat and moisture causes the hydrolysis of ester bonds in lipids	-
149.	Hydrolytic Rancidity	-	Release of short chain fatty acids by hydrolysis is responsible for the development of an undesirable rancid flavour in raw milk	-
150.	Polycyclic Aromatic Hydrocarbons	-	PAHs form in smoke that's produced when fat from the meat ignites or drips on the hot coals of the grill.	-

Faculty Team Prepared

Signatures

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HoD

