

Food Technology XL (U)

Q.1 – Q.10 Multiple Choice Question (MCQ), carry ONE mark each (for each wrong answer: – 1/3).

Q.1	In a typical bacterial growth curve, the first order kinetics for growth rate is observed in
(A)	Lag phase
(B)	Log phase
(C)	Stationary phase
(D)	Decline phase

Q.2	Which of the following microorganisms is NOT a causative agent for food borne diseases?
(A)	<i>Campylobacter jejuni</i>
(B)	<i>Clostridium perfringens</i>
(C)	Norovirus
(D)	<i>Borrelia burgdorferi</i>

Q.3	Which one of the followings is NOT a fermented food product?
(A)	Tofu
(B)	Vinegar
(C)	Sauerkraut
(D)	Tempeh

Q.4	The Protein Efficiency Ratio (PER) is defined as
(A)	Percentage of absorbed nitrogen retained in the body
(B)	Weight gain in body mass (in gram) per gram protein intake
(C)	Ratio of essential and non-essential amino acids in a protein
(D)	Percent <i>in vitro</i> digestibility of a protein

Q.5	Which one of the following enzymes sequentially releases maltose from starch?
(A)	α -Amylase
(B)	β - Amylase
(C)	Glucoamylase
(D)	Pullulanase

Q.6	Highest mole % of amino acid mixture present in glutenin of wheat gluten are
(A)	Glutamine and glutamic acid
(B)	Serine and lysine
(C)	Alanine and tryptophan
(D)	Proline and glycine

Q.7	Which one of the following compounds is present in soybean and acts as phytoestrogen?
(A)	Tangeretin
(B)	Lutin
(C)	Quercetin
(D)	Genistein

Q.8	Which one of the followings is an oligosaccharide?
(A)	Xanthan
(B)	Alginate
(C)	Raffinose
(D)	Gellan

Q.9	Bittering agent in grape fruit formed after juice extraction under acidic conditions is
(A)	Quinine
(B)	Theobromine
(C)	Isohumulone
(D)	Limonin

Q.10	Difference between adsorption and desorption isotherms is known as
(A)	Hysteresis
(B)	Dryness
(C)	Evaporation
(D)	Dehydration



Q.11 – Q.13 Multiple Choice Question (MCQ), carry TWO mark each (for each wrong answer: – 2/3).

Q.11	The conversion of pyruvate to lactic acid in homolactic fermentation is catalyzed by
(A)	Lactate dehydrogenase
(B)	Pyruvate dehydrogenase
(C)	Lactase
(D)	Pyruvate decarboxylase

Q.12	Which one of the following statements is <u>INCORRECT</u> with respect to Controlled Atmosphere Package (CAP) and Modified Atmosphere Package (MAP) of agro- produce?
(A)	CAP and MAP limit microbial as well as biochemical activities.
(B)	Gas composition inside a MAP during the storage is continuously monitored and regulated.
(C)	CAP implies a greater degree of precision than MAP in maintaining specific levels of the gas composition.
(D)	Modification of the atmosphere inside a MAP is achieved by natural interplay between respiration of products and permeation of gases through the packaging film.



Q.13	<p>Match unit operation in Column I with its application in food processing in Column II.</p> <table> <tr> <th data-bbox="284 376 794 432">Column I</th><th data-bbox="794 376 1324 432">Column II</th></tr> <tr> <td data-bbox="284 432 794 499">P. Hydrogenation</td><td data-bbox="794 432 1324 499">1. Removal of soft wax</td></tr> <tr> <td data-bbox="284 499 794 566">Q. Blanching</td><td data-bbox="794 499 1324 566">2. Shortening of fat</td></tr> <tr> <td data-bbox="284 566 794 633">R. Leaching</td><td data-bbox="794 566 1324 633">3. Inactivation of enzyme</td></tr> <tr> <td data-bbox="284 633 794 689">S. Winterization</td><td data-bbox="794 633 1324 689">4. Separation of dye</td></tr> </table>	Column I	Column II	P. Hydrogenation	1. Removal of soft wax	Q. Blanching	2. Shortening of fat	R. Leaching	3. Inactivation of enzyme	S. Winterization	4. Separation of dye
Column I	Column II										
P. Hydrogenation	1. Removal of soft wax										
Q. Blanching	2. Shortening of fat										
R. Leaching	3. Inactivation of enzyme										
S. Winterization	4. Separation of dye										
(A)	P-2, Q-4, R-2, S-I										
(B)	P-2, Q-3, R-4, S-1										
(C)	P-4, Q-1, R-2, S-3										
(D)	P-4, Q-2, R-1, S-3										



Q.14 – Q.19 Multiple Select Question (MSQ), carry TWO mark each (no negative marks).

Q.14	Which of the followings are correct pair of GRAS chemical food preservative, affected organism and given food matrix?
(A)	Sodium lactate-Bacteria-Pre-cooked meat
(B)	Caprylic acid-Insects-Cheese wraps
(C)	Dehydroacetic acid-Molds-Squash
(D)	Sodium nitrite-Clostridia-Meat curing preparations

Q.15	Choose the correct pair of pigment and their corresponding color in plant products
(A)	Carotene-Yellow-orange-Peppers
(B)	Betanin-Purple/red-Cactus pear
(C)	Lycopene-Red-Red beets
(D)	Flavanols-Orange-red-Cauliflowers

Q.16	Which of the following compounds act as anti-nutritional factors?
(A)	Phytate
(B)	Isoflavones
(C)	Trypsin Inhibitor
(D)	Resveratrol

Q.17	Which of the followings is/are commonly used medium/media in the supercritical fluid extraction of spices and tea?
(A)	Water
(B)	Carbon dioxide
(C)	Dichloromethane
(D)	Carbon dioxide with Ethanol

Q.18	Which of the following expressions represent the Reynolds number of a fluid flowing through a uniform circular cross section pipe?
(A)	$\frac{(\text{density of the fluid}) \times (\text{average velocity of the fluid}) \times (\text{internal diameter of the pipe})}{(\text{dynamic viscosity of the fluid})}$
(B)	$\frac{(\text{average velocity of the fluid}) \times (\text{internal diameter of the pipe})}{(\text{kinematic viscosity of the fluid})}$
(C)	$\frac{(\text{dynamic viscosity of the fluid})}{(\text{average velocity of the fluid}) \times (\text{density of the fluid}) \times (\text{internal diameter of the pipe})}$
(D)	$\frac{(\text{kinematic viscosity of the fluid})}{(\text{average velocity of the fluid}) \times (\text{internal diameter of the pipe})}$

Q. 19	Which of the following combinations of analytical equipment, property measured and food property are correct?
(A)	Particle size analyzer - particle size distribution - span value
(B)	Texture profile analyzer - morphology - chewiness
(C)	Differential scanning calorimeter - glass transition temperature - degree of caking
(D)	Capillary viscometer - viscosity - sensory

Q.20 Numerical Answer Type (NAT), carry TWO mark (no negative marks).

Q.20	<p>Dry air is fed into a tray dryer. The percentage relative humidity of the air leaving the dryer is 60% at 70°C and 101.35 kPa. If, saturated vapour pressure of water at 70°C is 31.2 kPa, the humidity of the air leaving the dryer in kg water per kg dry air (<i>round off to 3 decimal places</i>) will be _____.</p> <p>(Given : Molecular weight of water and air are 18.02 g mol⁻¹ and 28.97 g mol⁻¹ respectively)</p>
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END OF THE QUESTION PAPER

