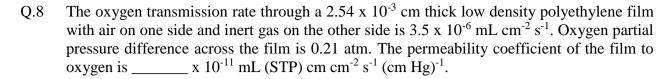
XE (G): Q. 1-Q. 9 carry one mark each & Q. 10-Q. 22 carry two marks each.

Q.1 Which of the following is oil soluble pigment present in fruits		nent present in fruits and vegetable	and vegetables?		
	(A) Flavonoids	(B) Carotenoids	(C) Anthocyanins	(D) Tannins	
Q.2	Which of the following represent the group of saturated fatty acids?				
	(A) Lauric, Myristic	, Arachidic	(B) Palmitic, Linoleic, Linoleni	c	
	(C) Capric, Stearic &	& Oleic	(D) Behenic, Caprylic, Arachide	onic	
Q.3	The anti-nutritional factor present in fava bean is				
	(A) Gossypol		(B) Curcine		
	(C) Vicine		(D) Cyanogen		
Q.4	Irradiation carried out to reduce viable non-spore forming pathogenic bacteria using a dose between 3 to 10 kGy is called https://www.freshersnow.com/previous-year-question-papers/				
	(A) Radurization		(B) Thermoradiation		
	(C) Radappertization	n	(D) Radicidation		
Q.5	Identify the correct statement related to the viscosity of Newtonian fluids from the following				
	(A) It is not influence(B) It increases with(C) It decreases with(D) It is not influence	shearing rate shearing rate			
Q.6	Adult male Wistar rats were fed with a protein based diet. Total 150 g of protein was ingested per animal. If the average weight increased from 110 g to 350 g after the end of the experiment, the Protein efficiency ratio of the given protein would be (up to two decimal points)				
Q.7		content of a food on (up to two decimal p	wet basis is 50.76%. Its moisture points)	content (%) on	

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- Q.9 Ambient air at 30°C dry bulb temperature and 80% relative humidity was heated to a dry bulb temperature of 80°C in a heat exchanger by indirect heating. The amount of moisture gain (g kg⁻¹ dry air) during the process would be
- Q.10 Match the commodity in Group I with the bioactive constituent in Group II

Group I	Group II
P. Ginger	1. Lutein
Q. Green tea	2. Gingerol
R. Spinach	3. Curcumin
S. Turmeric	4. Epigallocatechin gallate

- (A) P-1, O-2, R-3, S-4
- (B) P-2, Q-4, R-1, S-3
- (C) P-4, O-1, R-3, S-2
- (D) P-2, Q-3, R-1, S-4
- Q.11 Match the process operation in **Group I** with the separated constituent in **Group II**

Group IGroup IIP. Extraction1. PhospholipidsQ. Degumming2. Free fatty acidsR. Neutralization3. PigmentsS. Bleaching4. Crude oil

Q.12 Match the spoilage symptom in **Group I** with the causative microorganism in **Group II**

Group I

- P. Green rot of eggs
- Q. Putrid swell in canned fish
- R. Red bread
- S. Yellow discoloration of meat

Group II

- 1. Micrococcus spp.
- 2. Serratia marcescens
- 3. Pseudomonas fluorescens
- 4. Clostridium sporogenes

$$(A) P-4, Q-3, R-2, S-1$$

Q.13 Match the fermented product in **Group I** with the base material in **Group II**

Group I	Group II
P. Sake	1. Milk
Q. Chhurpi	2. Cabbage
R. Natto	3. Rice
S. Sauerkraut	4. Soybean
(A) P-3, Q-1, R-4, S-2	(B) P-1, Q-3, R-4, S-2

Q.14 Match the operation in **Group I** with the process in **Group II**

(C) P-4, O-1, R-3, S-2

Group I		Group II	
P.	Cleaning	1. Quality separation	
Q.	Grading	2. Clarification	
R.	Size reduction	3. Screening	
S.	Filtration	4. Comminution	

(D) P-3, O-2, R-1, S-4

- (A) P-1, Q-3, R-4, S-2 (C) P-2, Q-4, R-1, S-3 (B) P-4, Q-1, R-3, S-2 (D) P-3, Q-1, R-4, S-2
- Q.15 Out of 7 principles of HACCP system, 4 are listed below. Arrange these principles in the order in which they are applied.
 - (P) Conduct a hazard analysis
 - (Q) Establish monitoring process
 - (R) Establish critical limit
 - (S) Establish record keeping and documentation process
 - $(A) \ P, \ R, Q, S \\ (B) \ Q, R, P, S \\ (C) \ P, Q, R, S \\ (D) \ R, S, P, Q$
- Q.16 Apple juice of 10% total solids (TS) is being concentrated in a single effect evaporator working with a surface condenser to 40% TS under a vacuum of 20 kPa. After some time the vacuum pump stops but the evaporation process continued. Choose the combination of possible implications from the following.
 - (P) Product quality is affected
 - (Q) Substantial increase in thermal energy requirement
 - (R) Decrease in the rate of evaporation
 - $(A) \ P \ \& \ Q \qquad (B) \ Q \ \& \ R \qquad (C) \ R \ \& \ P \qquad (D) \ \ P,Q \ \& \ R$

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Q.17	among the following.
	(A) Drying of food grains(B) Carbonation of beverages(C) Distillation of alcohol(D) Concentration of fruit juice
Q.18	For an enzyme catalyzed reaction $S \rightarrow P$, the kinetic parameters are: $[S] = 40 \ \mu M, \ V_0 = 9.6 \ \mu M \ s^{\text{-1}} \ \text{and} \ V_{\text{max}} = 12.0 \ \mu M \ s^{\text{-1}}.$ The K_m of the enzyme in μM will be(up to one decimal points)
Q.19	A microbial sample taken at 10 AM contained 1x10 ⁵ CFU/mL. The count reached to 1x10 ¹⁰ CFU/mL at 8 PM of the same day. The growth rate (h ⁻¹) of the microorganism would be(up to two decimal points)
Q.20	Black pepper is ground from an equivalent particle size of 6 mm to 0.12 mm using a 10 hp motor. Assuming Rittinger's equation and that 1 hp = 745.7 W, the power (hp) of motor required to fine grind black pepper to 0.08 mm would be(up to two decimal points)
Q.21	Green pea (average diameter 0.8 cm) is frozen in a blast freezer operating at -40°C and with a surface heat transfer coefficient of 30 W m ⁻² K ⁻¹ . The thermal conductivity of pea is 2.5 W m ⁻¹ K ⁻¹ , and latent heat of crystallization is 2.74 x 10 ² kJ kg ⁻¹ . If the freezing point of pea is -1°C and the density is 1160 kg m ⁻³ , the freezing time in minutes will be(up to two decimal points)
Q.22	The rate of heat transfer from a metal plate is 1000 W m ⁻² . The surface temperature of the plate is 120°C and ambient temperature is 20°C. The convective heat transfer coefficient (W m ⁻² °C ⁻¹) using the Newton's law of cooling will be

END OF THE QUESTION PAPER

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