(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

PHD-EE, November-2025 FOOD TECHNOLOGY

Sr. No. 10001

Code

Time: 11/4 Hours	Total Question	s: 100	Max. Marks: 100
Roll No.	_ (in figure)		(in words
Name:		Date of Birth:	
Father's Name:		Mother's Name:_	
Date of Examination:			
(Signature of the candidat	e) :	(Signatur	re of the Invigilator)

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	Code-A			
Question No.	Questions			
1.	The color stability of canned peas is maintained primarily by controlling:			
	(1) pH and blanching time (2) Sodium chloride content			
	(3) Oxygen and vacuum sealing (4) Vitamin C concentration			
2.	Hydrostatic Pressure Processing (HPP) primarily inactivates			
	microorganisms by:			
	(1) Rupturing cell walls mechanically			
	(2) Creating thermal gradients			
	(3) Altering food pH			
	(4) Denaturation of membrane proteins			
3.	Hurdle technology is based on:			
	(1) Application of one lethal preservation method			
	(2) Using multiple mild preservation factors synergistically			
	(3) Employing non-thermal preservation exclusively			
	(4) Combining physical and chemical sterilization			
4.	Microfiltration and bacteriofugation are mainly applied in:			
	(1) Dairy processing (2) Fruit juice concentration			
	(3) Cereal milling (4) Meat tenderization			
5.	In pasteurization, the key parameter to ensure microbial safety is:			
	(1) Total solids content (2) Lethal rate (F-value)			
	(3) Time-temperature combination (4) Viscosity of the food			
6.	Thermo sonication enhance microbial inactivation by:			
	(1) Combining moderate heat with ultrasonic cavitation			
	(2) Increasing pH and reducing aw			
	(3) Generating radiation energy			
	(4) Using filtration and drying simultaneously			

Question No.		uestions			
7.	The most heat-resistant spoilage	e organis			
	(1) Clostridium botulinum	(2)	$Bacillus\ stear other mophilus$		
	(3) Aspergillus niger	(4)	Lactobacillus bulgaricus		
8.	The primary spoilage in tomato	ketchup	is due to:		
	(1) Yeast fermentation	(2)	Lactic acid bacteria		
	(3) Spore-forming bacteria	(4)	Molds and osmophilic yeasts		
9.	The aleurone layer in cereals is	rich in:			
	(1) Starch	(2)	Protein and minerals		
	(3) Cellulose	(4)	Lipids only		
10.	The key enzyme in dough development affecting elasticity is:				
	(1) Protease	(2)	Amylase		
	(3) Lipase	(4)	Polyphenol oxidase		
11.	The major edible oilseed cultivated in India by area is:				
	(1) Soybean	(2)	Groundnut		
	(3) Mustard-rapeseed	(4)	Sesame		
12.	The major limiting amino acid	in millet	s is:		
	(1) Lysine	(2)	Methionine		
	(3) Leucine	(4)	Tryptophan		
13.	Steam distillation is used in sp	oice proce	ssing mainly to obtain :		
	(1) Oleoresins	(2)	Essential oils		
	(3) Pigments	(4)	Resin acids		
14.	The most heat-resistant enzym	ne in mil	k is:		
	(1) Lipase	(2)) Catalase		
	(3) Alkaline Phosphatase	(4)) Peroxidase		

Question No.	Questions			
15.	Browning reaction in milk occurs due to reaction between:			
	(1) Lipid and lactose	(2)	Lysine and maltose	
	(3) Glucose and maltose	(4)	Lysine and lactose	
16.	In a refrigeration cycle, expan	sion of ref	rigerant through the expansion	
	valve is at constant:			
	(1) Temperature	(2)	Pressure	
	(3) Enthalpy	(4)	Relative humidity	
17.	Trimethylamine (TMA) is spoi	led fish is	produced by:	
	(1) Protein oxidation			
	(2) Bacterial reduction of trimethylamine oxide			
	(3) Lipid hydrolysis		Comment a promption in a plan of	
	(4) Maillard reaction			
18.	Tenderization of meat by papain acts through:			
	(1) Carbohydrate hydrolysis			
	(2) Cleavage of connective tissue proteins			
	(3) Oxidation of fat			
	(4) Heat coagulation			
19.	The person square calculation	n is related	d to:	
	(1) Momentum balance	(2)	Energy balance	
	(3) Mass balance	(4)	All of these	
20.	Oil coating of eggs preserves quality by:			
	(1) Inhibiting microbial growth by creating anaerobic conditions			
	(2) Reducing water loss			
	(3) Increasing air cell	atorio si		
	(4) Preventing yolk movement	ent		

Question No.	Questions
21.	Critical Control Points (CCPs) in HACCP refer to:
	(1) Steps where control can be applied to eliminate or reduce hazards
	(2) Quality parameters for sensory evaluation
	(3) Packaging steps
	(4) Equipment cleaning stages
22.	FSSAI (Food Safety and Standards Authority of India) was establishe
	under:
	(1) PFA Act, 1954
	(2) Food Safety and Standards Act, 2006
	(3) Essential Commodities Act, 1955
	(4) Consumer Protection Act, 1986
23.	Energy balance in food processing is essential for:
	(1) Calories intake calculation
	(2) Determining thermal efficiency and optimizing equipment
	(3) Quality control studies
	(4) Storage design
24.	Recombinant Saccharomyces cerevisiae is commonly used in the
	production of:
	(1) Bioethanol (2) Vinegar
	(3) Antibiotics (4) Vitamins
25.	Batch fermentation is characterized by:
	(1) Continuous addition of substrate
	(2) No inflow or outflow during fermentation
	(3) Removal of product continuously
	(4) Steady-state growth

0	_		Code-A	
Question No.	Questions			
26.	26. Aspergillus oryzae is the mold used in:		TENER PER ANGELONIA DE LA CONTRACTION DEL CONTRACTION DE LA CONTRA	
	(1) Soy sauce fermentation	(2)	Bread leavening	
	(3) Beer brewing	(4)	Yogurt production	
27.	Which of the following compou	inds cor	ntributes to the characteristi	
	buttery flavor in dairy products			
	(1) Diacetyl	(2)	Acetoin	
	(3) Hexanal	(4)	Isoamyl accetate	
28.	Which analytical technique is m	ost wide	ely used for identifying volatil	
	flavor compounds?			
	(1) HPLC	(2)	GC-MS	
	(3) IR Spectroscopy	(4)	UV-Vis Spectrophotometry	
29.	The electronic nose (E-nose) operates on the principle of:			
	(1) Mass spectrometry			
	(2) Sensor array detecting vola	tile patt	erns	
	(3) FTIR			
	(4) Chromatographic separation	n		
30.	Phytosterols are used in functional foods mainly to:			
	(1) Improve taste	(2)	Increase sugar content	
	(3) Enhance protein quality	(4)	Lower cholesterol absorption	
31.	A rheogram is a graphical representation of the flow behavior, which			
	shows the relationship between			
	(1) Rate constant and temperat	ture(2)	Pressure and temperature	
	(3) Viscosity and temperature	(4)	Shear stress and shear rate	
32.	Vitamin D ₂ is also known as:	The same	DECOM NOTE TO THE TOTAL OF THE	
	(1) Cholecalciferol	(2)	Cobalamine	
	(3) Ergocalciferol	(4)	Pyridoxine	

nestion No.	Q	uestions		
33.	The limit of iodine in iodized sa	lt is:		
	(1) 20-60 mg	(2)	80-100 mg	
	(3) 100-200 mg	(4)	250-500 mg	
34.	Water activity (aw) of fruit juice	concentr	ate is	
	(1) 0.2-0.3	(2)	0.5-0.6	
	(3) 0.1-0.2	(4)	0.7-0.9	
35.	The ideal packaging material for	or high pr	essure processed food :	
	(1) Metal cans	(2)	Flexible pouches	
	(3) Glass	(4)	Rigid trays	
36.	Which of the following is a non	-climacter	ric fruit?	
	(1) Apple	(2)	Elephant apple	
	(3) Mango	(4)	Papaya	
37.	"Salt balance" theory was given by:			
	(1) Samuel and Hill	(2)	Summer and Schultz	
	(3) Singer and Nicholson	(4)	Sommer and Hart	
38.	The main function of the stabi	lizers in i	ce-cream is to:	
	(1) Improve and provide unif	orm whip	ping quality	
	(2) Produce a drier ice-cream	with smo	ther body and texture	
	(3) Prevent formation of ice of	rystals		
	(4) None of the above			
39.	White pepper is produced con-	ventionall	y from:	
	(1) Ripe berries	(2)	Fermented berries	
	(3) Unripe berries	(4)	Discolored berries	
40.	Scoville value measures the:	SH ALW	Self-Self-Self-Self-Self-Self-Self-Self-	
	(1) Sweetness of sugar	(2)	Saltiness of NaCl	
	(3) Pungency of chilli	(4)	Sourness of lemon	

			Code-A		
Question No.	Ques	tions	3		
41.	Which of the following is/are used f	or lac	quering?		
	(1) Epoxy Phenolic group lacquers	(2)	White vinyl lacquers		
	(3) Organosol group	(4)	All of the above		
42.	Bitter component present in Saffro	n is:			
	(1) Safranic acid	(2)	Safranal		
	(3) Safranone	(4)	All of the above		
43.	ISO 22000 is related to:				
	(1) QMS	(2)	HACCP		
	(3) FSMS	(4)	TQM		
44.	Which of the following is a cyanobacteria?				
	(1) Nostoc	(2)	Boletus		
	(3) Glomus	(4)	Amanita		
45.	With proper tempering of fat, we can avoid:				
	(1) Rancidity	(2)	Fat bloom		
	(3) Reversion	(4)	All of the above		
46.	During the extraction of oil from oil seeds the process of removal of				
	mucilaginous material is termed a	s:			
	(1) Tempering	(2)	Winterizing		
	(3) Bleaching	(4)	Degumming		
47.	The primary amino acid (exclusive	ly) fo	und in tea is:		
	(1) Theaflavin	(2)	Thearubigin		
	(3) Theanine	(4)	Caffeine		
48.	Which of the following enzyme is u	ised a	as anti-staling agent in bread?		
	(1) a amylase	(2)	Protease		
	(3) Lipase	(4)	Ligase		

Question No.	Questions			
49.	Which of the following is used as anticaking agent?			
	(1) Tricalcium phosphate	(2)	Calcium silicate	
	(3) Magnesium silicate	(4)	All of the above	
50.	Calculate the specific heat	of Orange ju	uice concentrate having a soli	
	content of 35%:			
	(1) 0.72 BTU/(lb°F)	(2)	0.24 BTU/(lb°F)	
	(3) 0.48 BTU/(lb°F)	(4)	0.96 BTU/(lb°F)	
51.	A Completely Randomized I	Design (CRD) is most appropriate when:	
	(1) Experimental units are	heterogeneo	ous	
	(2) Experimental units are homogeneous			
	(3) There are blocking factors			
	(4) There are multiple trea	tments and	replicates	
52.	Factorial design allows a researcher to:			
1	(1) Test one factor at a time			
	(2) Ignore confounding			
	(3) Reduce sample size drastically			
	(4) Study interaction effect	ts between fa	ctors	
53.	Sampling error arises due t	o:		
	(1) Poor measurement techniques			
	(2) Sample not representing the population			
	(3) Data recording mistake	9		
	(4) None of these			
54.	In food analysis, composite			
	(1) Reduce analytical cost and variability			
	(2) Increase number of analyses			
	(3) Decrease representativeness			
	(4) Increase variability			

uestion No.	Questions			
55.	During data compilation, the first step is:			
	(1)	Interpretation	(2)	Editing and coding
	(3)	Data collection	(4)	Hypothesis formulation
56.	The	ANOVA (Analysis of vari	ance) techn	nique assumes that:
	(1) Samples are dependent			
	(2)	Population variances are	equal	
	(3)	Error are not normally di	istributed	
	(4)	Treatments are independ	lent	
57.	Nor	n-sampling errors are caus	ed by:	
	(1)	Random variation	(2)	Improper sample size
	(3)	Data recording mistake of	or bias (4)	Using wrong population
58.	Plagiarism refers to:			
	(1) Unintentional spelling mistakes			
	(2) Copying another's work without credit			
	(3) Publishing in multiple journals			
	(4)	Peer-review rejection		
59.	CO	PE stands for :		
	(1) Committee on Publication Ethics			
	(2) Council of Publication Editors			
	(3) Conference of Paper Ethics			
	(4) Consortium of Professional Editor			
60.	Wł	nich of the following is an e	example of	publication misconduct?
	(1)	Peer reviewing	(2)	Duplicate submission
	(3)	Citation indexing	(4)	Data archiving

Question No.	Questions
61.	The null hypothesis (H ₀) generally states that:
	(1) There is no significant difference
	(2) There is a significant difference
	(3) Variables are dependent
	(4) Data are biased
62.	The t-test is used to compare:
	(1) Variances of two samples
	(2) Frequencies of categories
	(3) Proportions of sample
	(4) Means of two independent samples
63.	Intellectual Property Rights (IPR) exists primarily to:
	(1) Prevent publication of new ideas
	(2) Reward plagiarism
	(3) Protect and encourage creator's innovation
	(4) Restrict public access to knowledge
64.	Patent protection in food technology is usually granted for:
	(1) Discovery of natural food components
	(2) Novel process, formulations, or packaging methods
	(3) New Traditional recipes
	(4) Public domain knowledge
65.	A Geographical Indication (GI) tag in foods refers to:
	(1) A patent for a regional product
	(2) Protection of a product's reputation based on its origin
	(3) A copyright of food company
	(4) Trademark of a company

Question No.	Questions
66.	The acceptable similarity index for a Ph.D. thesis (as per UGC norms,
	India) is usually:
	(1) Below 50%
	(2) Below 30%
	(3) Below 10-15% (excluding references and quotes)
	(4) Exactly 20%
67.	In research ethics, acknowledgement of funding and collaborators is
	necessary because:
	(1) It increases citation count
	(2) It ensures transparency and accountability
	(3) It is optional courtesy
	(4) It reduces plagiarism score
68.	Falsification refers to:
	(1) Deliberate manipulation of research data or methods to
	misrepresent results
	(2) Typographical errors
	(3) Honest mistake in analysis
	(4) Reuse of methodology
69.	Redundant publication occurs when:
	(1) A paper is co-authored by several authors
	(2) Review and original papers overlap
	(3) The same research data are published in more than one journs
	without acknowledgement
	(4) A thesis is uploaded in an institutional repository

Question No.	· · · · · · · · · · · · · · · · · · ·				
70.	The ORCID (Open Researcher an	d Contributor ID) system is used for:			
	(1) Checking plagiarism				
	(2) Assigning unique identifiers t	to researcher to distinguish their work			
	(3) Indexing journals				
	(4) Measuring impact factor				
71.	One-way ANOVA is used to test:				
	(1) Relationship between two qu	antitative variables			
	(2) Difference between means of	two groups			
	(3) Difference between means of	three or more groups on a single factor			
	(4) Correlation strength				
72.	If the computed F-value>critical F-value at 5% level, then:				
	(1) Accept H ₀	(2) Reject H ₀			
	(3) Accept H ₁	(4) Both (2) and (3)			
73.	Which database introduced the h-index concept?				
	(1) Web of Science				
	(2) Scopus				
	(3) Google Scholar				
	(4) Independently by Jorge Hirs	sch			
74.	Impact Factor is published annua	ally in :			
	(1) Scopus Metrics	(2) Journal Citation Reports (JCF			
	(3) Research Gate	(4) Cross Reference			
75.	Which of the following is not a m	easure of dispersion?			
	(1) Range	(2) Variance			
	(3) Standard Deviation	(4) Mean			

Question	Questions Questions					
No.						
76.	Scopus Author ID helps in:					
	(1) Checking plagiarism					
	(2) Identifying and grouping publications of the same author					
	(3) Ranking universities					
	(4) Creating reference lists					
77.	The null hypothesis (H_0) is a statement that:					
	(1) There is a significant relationship between variables					
	(2) Variables are dependent					
	(3) There is no significant difference or relationship					
	(4) Means are unequal					
78.	The Standard Error of Mean (SEM) decreases when:					
	(1) Sample size decreases (2) Sample variance increases					
	(3) Sample size increase (4) Mean decrease					
79.	The standard deviation is the:					
	(1) Square of variance					
	(2) Square root of variance					
	(3) Reciprocal of variance					
	(4) Difference between mean and Median					
80.	A correlation coefficient r=0 implies:					
	(1) Strong positive correlation (2) Strong negative correlation					
	(3) Non linear correlation (4) Perfect correlation					
81.	The correlation coefficient (r) measures:					
	(1) The degree of linear relationship between two variables					
	(2) The average of two variables					
	(3) The ratio of two variances					
	(4) The difference between two means					

Question No.	Questions					
82.	In food analysis, composite sampling means:					
	(1) Mixing several subsamples for one representative sample					
	(2) Testing one unit only					
	(3) Randomly ignoring outliers					
	(4) Averaging duplicates					
83.	Duplicate analysis helps in:					
	(1) Checking precision and accuracy					
	(2) Reducing sample size					
	(3) Avoiding bias					
	(4) Increasing dispersion					
84.	A variable is:					
	(1) A constant value					
	(2) A measurable characteristic that varies					
	(3) Experimental varied data					
	(4) None					
85.	A hypothesis is rejected when:					
	(1) p-value $<\alpha$ (2) p-value $>\alpha$					
	(3) Confidence level = 1 (4) Data incomplete					
86.	Web of Science is maintained by:					
	(1) Elsevier (2) Springer					
	(3) Clarivate Analytics (4) Scopus					
87.	Scopus is owned by:					
	(1) Elsevier (2) Clarivate					
	(3) Wiley (4) Taylor & Francis					

Question No.	Questions				
88.	Google Scholar is:				
	(1) Paid Journal	(2)	Peer-review system		
	(3) University database	(4)	Free citation database		
89.	The h-index measures:				
	(1) Productivity and citation	impact of	a researcher		
	(2) Journal quality research articles				
	(3) Funding level				
	(4) Experimental accuracy				
90.	Authorship should be based o	n:	1		
	(1) Supervisory role only				
	(2) Financial support only				
	(3) Substantial contribution to conception or analysis				
	(4) None				
91.	Citation management software examples include:				
	(1) PowerPoint	(2)	Mendeley, Zotero, EndNote		
	(3) Excel, SPSS	(4)	None		
92.	Appeals and complaints process in journals aims to:				
	(1) Resolve disputes fairly	(2)	Delay publication		
	(3) Remove reviewers	(4)	Increase fees		
93.	The first step in the scientific	research p	process is:		
	(1) Data collection	(2)	Defining the problem		
	(3) Hypothesis formulation	(4)	Experimentation		
94.	Sampling error occurs due to	:			
	(1) Mistakes in data entry				
	(2) Random selection of samples				
	(3) Bias in selection or inad	equate sar	nple size		
	(4) Faults during sampling				

Question No.	Questions				
95.	The term replication in experimental design refers to:				
	(1) Repeating the experiment to estimate error				
	(2) Randomizing samples				
	(3) Using control group				
	(4) Avoiding bias				
96.	The most crucial feature of a scientific experiment is:				
	(1) Subjectivity (2) Objectivity				
	(3) Randomness (4) Cost				
97.	Factorial experiments are used to:				
	(1) Study interaction of factors simulataneously				
	(2) Study of one factor only				
	(3) Test unrelated factor variables				
	(4) Control random error				
98.	Documentation of data ensures:				
	(1) Destruction of raw data				
	(2) Confidentiality				
	(3) Reproducibility and transparency				
	(4) Reduction of sample size				
99.	When data are highly skewed, the best measure of central tendency is:				
	(1) Mean (2) Median				
	(3) Mode (4) Range				
100.	Corresponding author is responsible for:				
	(1) Only submitting the paper				
	(2) Reviewing all submissions in the journal				
	(3) Being the most senior author				
	(4) Handling communication between journal and all co-authors				
	ensuring integrity and approval				

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PHD-EE, November-2025 FOOD TECHNOLOGY

Sr. No.10014

Code B		Sr. No. <u>22</u>
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				Code		
Question No.	questions					
1.	One-way ANOVA is used to test:					
	(1) Relationship between two quantitative variables					
	(2) Difference between means of two groups					
	(3)					
	(4)	Correlation strength				
2.	If the	he computed F-value>critical	F-value	e at 5% level, then:		
	(1)	Accept H ₀	(2)	Reject H ₀		
	(3)	Accept H ₁	(4)	Both (2) and (3)		
3.	Wh	ich database introduced the h	-index	concept?		
	(1)	Web of Science		*		
	(2)	Scopus		West-Random en anglishadar.		
	(3)	Google Scholar		1		
	(4)	Independently by Jorge Hirs	sch	and the contract of the Contra		
4.	Impact Factor is published annually in:					
	(1)	Scopus Metrics	(2)	Journal Citation Reports (JCR)		
	(3)	Research Gate	(4)	Cross Reference		
5.	Which of the following is not a measure of dispersion?					
	(1)	Range	(2)	Variance		
	(3)	Standard Deviation	(4)	Mean		
6.	Sco	opus Author ID helps in :		THE PARKETS OF THE PA		
	(1)	Checking plagiarism				
	(2)	Identifying and grouping pu	blicatio	ons of the same author		
	(3)	Ranking universities		Charland and the Control of the Cont		
	(4)	Creating reference lists				

Question No.	Questions				
7.	The null hypothesis (H ₀) is a statement that:				
	(1) There is a significant relationship between variables				
	(2) Variables are dependent				
	(3) There is no significant differen	ice or	relationship		
	(4) Means are unequal	ice of	Totationship		
8.	The Standard Error of Mean (SEM) deci	reases when ·		
	(1) Sample size decreases	(2)	Sample variance increases		
	(3) Sample size increase	(4)	Mean decrease		
9.	The standard deviation is the:	(-/			
	(1) Square of variance				
	(2) Square root of variance				
	(3) Reciprocal of variance				
	(4) Difference between mean and Median				
10.	A correlation coefficient r=0 implie	s:	A B in Assert City		
	(1) Strong positive correlation	(2)	Strong negative correlation		
	(3) Non linear correlation	(4)	Perfect correlation		
11.	A Completely Randomized Design (CRD) is most appropriate when:				
	(1) Experimental units are heterogeneous				
	(2) Experimental units are homogeneous				
	(3) There are blocking factors				
	(4) There are multiple treatments		replicates		
12.	Factorial design allows a researche	er to:			
	(1) Test one factor at a time				
	(2) Ignore confounding				
	(3) Reduce sample size drastically (4) Study interaction effects between		etora		
	(4) Study interaction effects between		ictors		

	Code					
Question No.	Questions					
13.	Sampling error arises due to:					
	(1) Poor measurement techniques					
	(2) Sample not representing the population					
	(3) Data recording mistake					
	(4) None of these					
14.	In food analysis, composite sampling is used to:					
	(1) Reduce analytical cost and variability					
	(2) Increase number of analyses					
	(3) Decrease representativeness					
	(4) Increase variability					
15.	During data compilation, the first step is:					
	(1) Interpretation (2) Editing and coding					
	(3) Data collection (4) Hypothesis formulation					
16.	The ANOVA (Analysis of variance) technique assumes that:					
	(1) Samples are dependent					
	(2) Population variances are equal					
	(3) Error are not normally distributed					
	(4) Treatments are independent					
17.	Non-sampling errors are caused by:					
	(1) Random variation (2) Improper sample size					
	(3) Data recording mistake or bias (4) Using wrong population					
18.	Plagiarism refers to:					
	(1) Unintentional spelling mistakes					
	(2) Copying another's work without credit					
	(3) Publishing in multiple journals					
	(4) Peer-review rejection					

Question	Questions			
No.				
19.	COPE stands for:			
	(1) Committee on Publication Ethics			
	(2) Council of Publication Editor	cs		
	(3) Conference of Paper Ethics			
	(4) Consortium of Professional I	Editor		
20.	Which of the following is an exan	ple of p	publication misconduct?	
	(1) Peer reviewing	(2)	Duplicate submission	
a State of	(3) Citation indexing	(4)	Data archiving	
21.	A rheogram is a graphical repre	sentati	on of the flow behavior, which	
	shows the relationship between:			
	(1) Rate constant and temperate	ure (2)	Pressure and temperature	
	(3) Viscosity and temperature	(4)	Shear stress and shear rate	
22.	Vitamin D ₂ is also known as:			
	(1) Cholecalciferol	(2)	Cobalamine	
	(3) Ergocalciferol	(4)	Pyridoxine	
23.	The limit of iodine in iodized salt	is:		
	(1) 20-60 mg	(2)	80-100 mg	
	(3) 100-200 mg	(4)	250-500 mg	
24.	Water activity (aw) of fruit juice concentrate is			
	(1) 0.2-0.3	(2)	0.5-0.6	
	(3) 0.1-0.2	(4)	0.7-0.9	
25.	The ideal packaging material for high pressure processed food:			
	(1) Metal cans	(2)	Flexible pouches	
	(3) Glass	(4)	Rigid trays	
26.	Which of the following is a non-cl	imacte	ric fruit?	
	(1) Apple	(2)	Elephant apple	
	(3) Mango	(4)	Papaya	

O			Code-I		
Question No.	Questions				
27.	"Salt balance" theory was given by:				
	(1) Samuel and Hill	(2)	Summer and Schultz		
	(3) Singer and Nicholson	(4)	Sommer and Hart		
28.	The main function of the stabi	lizers in ic	e-cream is to:		
	(1) Improve and provide unife				
	(2) Produce a drier ice-cream	with smot	ther body and texture		
	(3) Prevent formation of ice co	rystals			
	(4) None of the above				
29.	White pepper is produced conv	entionally	from:		
	(1) Ripe berries	(2)	Fermented berries		
	(3) Unripe berries	(4)	Discolored berries		
30.	Scoville value measures the:	Service was a single			
	(1) Sweetness of sugar	(2)	Saltiness of NaCl		
	(3) Pungency of chilli	(4)	Sourness of lemon		
31.	The major edible oilseed cultivated in India by area is:				
	(1) Soybean	(2)	Groundnut		
	(3) Mustard-rapeseed	(4)	Sesame		
32.	The major limiting amino acid in millets is:				
	(1) Lysine	(2)	Methionine		
	(3) Leucine	(4)	Tryptophan		
33.	Steam distillation is used in spi	ce process	sing mainly to obtain:		
	(1) Oleoresins	(2)	Essential oils		
	(3) Pigments	(4)	Resin acids		
34.	The most heat-resistant enzyme	in milk i	8:		
	(1) Lipase	(2)	Catalase		
	(3) Alkaline Phosphatase	(4)	Peroxidase		

Ot'	Code-E				
Question No.	Questions				
35.	Browning reaction in milk occurs due to reaction between:				
	(1)	Lipid and lactose	(2)	Lysine and maltose	
	(3)	Glucose and maltose	(4)	Lysine and lactose	
36.	In a	a refrigeration cycle, expar	nsion of refi	rigerant through the expansion	
		ve is at constant:			
	(1)	Temperature	(2)	Pressure	
1.00	(3)	Enthalpy	(4)	Relative humidity	
37.	Tri	methylamine (TMA) is spo	iled fish is	produced by :	
	(1) Protein oxidation				
	(2) Bacterial reduction of trimethylamine oxide				
	(3) Lipid hydrolysis				
	(4)	Maillard reaction	9/11/24/1	Parit effici abivos	
38.	Tenderization of meat by papain acts through:				
	(1) Carbohydrate hydrolysis				
	(2) Cleavage of connective tissue proteins				
	(3) Oxidation of fat				
	(4)	Heat coagulation			
39.	The person square calculation is related to:				
	(1)	Momentum balance	(2)	Energy balance	
	(3)	Mass balance	(4)	All of these	
40.	Oil coating of eggs preserves quality by:				
	(1) Inhibiting microbial growth by creating anaerobic conditions				
	(2)	Reducing water loss			
	(3)	Increasing air cell			
	(4)	Preventing yolk moveme	ent *		

	Code-I					
Question No.	Questions					
41.	Citation management software examples include:					
	(1) PowerPoint (2) Mendeley, Zotero, EndNote					
	(3) Excel, SPSS (4) None					
42.	Appeals and complaints process in journals aims to:					
	(1) Resolve disputes fairly (2) Delay publication					
	(3) Remove reviewers (4) Increase fees					
43.	The first step in the scientific research process is:					
	(1) Data collection (2) Defining the problem					
	(3) Hypothesis formulation (4) Experimentation					
44.	Sampling error occurs due to:					
	(1) Mistakes in data entry					
	(2) Random selection of samples					
	(3) Bias in selection or inadequate sample size					
	(4) Faults during sampling					
45.	The term replication in experimental design refers to:					
	(1) Repeating the experiment to estimate error					
	(2) Randomizing samples					
	(3) Using control group					
	(4) Avoiding bias					
46.	The most crucial feature of a scientific experiment is:					
	(1) Subjectivity (2) Objectivity					
	(3) Randomness (4) Cost					
47.	Factorial experiments are used to:					
	(1) Study interaction of factors simulataneously					
	(2) Study of one factor only					
	(3) Test unrelated factor variables					
	(4) Control random error					

Question No.	Questions				
48.	Doo	cumentation of data ensures:			
	(1)	Destruction of raw data			
	(2)	Confidentiality			
	(3)	Reproducibility and transparency			
	(4)	Reduction of sample size			
49.	Wh	en data are highly skewed, the best measure of central tendency is:			
	(1)	Mean (2) Median			
	(3)	Mode (4) Range			
50.	Cor	responding author is responsible for:			
	(1) Only submitting the paper				
	(2) Reviewing all submissions in the journal				
	(3) Being the most senior author				
	(4)	Handling communication between journal and all co-author			
		ensuring integrity and approval			
51.	The null hypothesis (H ₀) generally states that:				
	(1) There is no significant difference				
	(2)	There is a significant difference			
	(3)	Variables are dependent			
	(4)	Data are biased			
52.	The	e t-test is used to compare:			
	(1)	Variances of two samples			
	(2)	Frequencies of categories			
	(3)	Proportions of sample			
	(4)	Means of two independent samples			

Owentien	Code-E
Question No.	Questions
53.	Intellectual Property Rights (IPR) exists primarily to:
	(1) Prevent publication of new ideas
	(2) Reward plagiarism
	(3) Protect and encourage creator's innovation
	(4) Restrict public access to knowledge
54.	Patent protection in food technology is usually granted for:
	(1) Discovery of natural food components
	(2) Novel process, formulations, or packaging methods
	(3) New Traditional recipes
	(4) Public domain knowledge
55.	A Geographical Indication (GI) tag in foods refers to:
	(1) A patent for a regional product
	(2) Protection of a product's reputation based on its origin
	(3) A copyright of food company
	(4) Trademark of a company
56.	The acceptable similarity index for a Ph.D. thesis (as per UGC norms
	India) is usually:
	(1) Below 50%
	(2) Below 30%
	(3) Below 10-15% (excluding references and quotes)
	(4) Exactly 20%
57.	In research ethics, acknowledgement of funding and collaborators is
	necessary because:
	(1) It increases citation count
	(2) It ensures transparency and accountability
	(3) It is optional courtesy
	(4) It reduces plagiarism score

Question	Code
No.	Questions
58.	Falsification refers to:
	(1) Deliberate manipulation of research data or methods
	misrepresent results
	(2) Typographical errors
	(3) Honest mistake in analysis
	(4) Reuse of methodology
59.	Redundant publication occurs when:
	(1) A paper is co-authored by several authors
	(2) Review and original papers overlap
	(3) The same research data are published in more than one journ
	without acknowledgement
	(4) A thesis is uploaded in an institutional repository
60.	The ORCID (Open Researcher and Contributor ID) system is used for
	(1) Checking plagiarism
	(2) Assigning unique identifiers to researcher to distinguish their wor
	(3) Indexing journals
	(4) Measuring impact factor
61.	The correlation coefficient (r) measures:
	(1) The degree of linear relationship between two variables
	(2) The average of two variables
	(3) The ratio of two variances
	(4) The difference between two means
62.	In food analysis, composite sampling means:
	(1) Mixing several subsamples for one representative sample
	(2) Testing one unit only
((3) Randomly ignoring outliers
((4) Averaging duplicates

Overtion			Code-E			
Question No.	questions					
63.	Duplicate analysis helps in:					
	(1) Checking precision and acc	uracv				
	(2) Reducing sample size					
	(3) Avoiding bias					
	(4) Increasing dispersion					
64.	A variable is:					
	(1) A constant value					
	(2) A measurable characteristic	c that va	ries			
	(3) Experimental varied data					
	(4) None	,				
65.	A hypothesis is rejected when:					
	(1) p-value<α	(2)	p-value>α			
	(3) Confidence level = 1	(4)	Data incomplete			
66.	Web of Science is maintained by:					
	(1) Elsevier	(2)	Springer			
	(3) Clarivate Analytics	(4)	Scopus			
67.	Scopus is owned by:					
	(1) Elsevier	(2)	Clarivate			
	(3) Wiley	(4)	Taylor & Francis			
68.	Google Scholar is:	E. 1537				
	(1) Paid Journal	(2)	Peer-review system			
	(3) University database	(4)	Free citation database			
69.	The h-index measures:					
	(1) Productivity and citation impact of a researcher					
	(2) Journal quality research articles					
	(3) Funding level					
	(4) Experimental accuracy					

Code-B				
Questions				
Authorship should be based on:				
(1) Supervisory role only				
(2) Financial support only				
(3) Substantial contribution to	concepti	on or analysis		
(4) None				
Which of the following is/are use	d for lac	equering?		
(3) Organosol group	(4)	All of the above		
Bitter component present in Saff	ron is:	Yakin Barana		
(1) Safranic acid	(2)	Safranal		
(3) Safranone	(4)	All of the above		
ISO 22000 is related to:				
(1) QMS	(2)	HACCP		
(3) FSMS	(4)	TQM		
Which of the following is a cyanobacteria?				
(1) Nostoc	(2)	Boletus		
(3) Glomus	(4)	Amanita		
With proper tempering of fat, we	can avo	oid:		
(1) Rancidity	(2)	Fat bloom		
(3) Reversion	(4)	All of the above		
During the extraction of oil from oil seeds the process of removal				
mucilaginous material is termed as:				
(1) Tempering	(2)	Winterizing		
(3) Bleaching	(4)	Degumming		
	Authorship should be based on: (1) Supervisory role only (2) Financial support only (3) Substantial contribution to (4) (4) None Which of the following is/are used (1) Epoxy Phenolic group lacqued (3) Organosol group Bitter component present in Saff (1) Safranic acid (3) Safranone ISO 22000 is related to: (1) QMS (3) FSMS Which of the following is a cyanod (1) Nostoc (3) Glomus With proper tempering of fat, we (1) Rancidity (3) Reversion During the extraction of oil from mucilaginous material is termed (1) Tempering	Authorship should be based on: (1) Supervisory role only (2) Financial support only (3) Substantial contribution to conception (4) None Which of the following is/are used for lace (1) Epoxy Phenolic group lacquers (2) (3) Organosol group (4) Bitter component present in Saffron is: (1) Safranic acid (2) (3) Safranone (4) ISO 22000 is related to: (1) QMS (2) (3) FSMS (4) Which of the following is a cyanobacteria (1) Nostoc (2) (3) Glomus (4) With proper tempering of fat, we can avoid (1) Rancidity (2) (3) Reversion (4) During the extraction of oil from oil semucilaginous material is termed as: (1) Tempering (2)		

			Code-D				
Question No.	Questions						
77.	The primary amino acid (exclusively) found in tea is:						
	(1) Theaflavin	(2)	Thearubigin				
	(3) Theanine	(4)	Caffeine				
78.	Which of the following enzyme is us	Which of the following enzyme is used as anti-staling agent in bread?					
	(1) α amylase	(2)	Protease				
	(3) Lipase	(4)	Ligase				
79.	Which of the following is used as an	ticak					
	(1) Tricoloium nh - 1	(2)	Calcium silicate				
	(3) Magnesium silicate	(4)	All of the above				
80.							
	content of 35%:	9 ,					
	(1) 0.72 BTU/(lb°F)	(2)	0.24 BTU/(lb°F)				
	(3) 0.48 BTU/(lb°F)	(4)	0.96 BTU/(lb°F)				
81.	Critical Control Points (CCPs) in HACCP refer to:						
	(1) Steps where control can be applied to eliminate or reduce hazards						
	(2) Quality parameters for sensory evaluation						
	(3) Packaging steps						
	(4) Equipment cleaning stages						
82.	FSSAI (Food Safety and Standards Authority of India) was established						
	under:						
	(1) PFA Act, 1954						
	(2) Food Safety and Standards Act, 2006						
	(3) Essential Commodities Act, 19	55					
1	(4) Consumer Protection Act, 1986	;					

Question			Code-B		
No.	Questions				
83.	Energy balance in food processing	is esse	ential for:		
	(1) Calories intake calculation				
	(2) Determining thermal efficience	y and	optimizing equipment		
	(3) Quality control studies				
	(4) Storage design				
84.	Recombinant Saccharomyces cer	evisia	e is commonly used in the		
	production of:				
	(1) Bioethanol	(2)	Vinegar		
	(3) Antibiotics	(4)	Vitamins		
85.	Batch fermentation is characterized by:				
	(1) Continuous addition of substrate				
	(2) No inflow or outflow during fermentation				
	(3) Removal of product continuou				
	(4) Steady-state growth		THE WAY OF THE SECOND		
86.	Aspergillus oryzae is the mold used	l in:			
	(1) Soy sauce fermentation	(2)	Bread leavening		
	(3) Beer brewing	(4)	Yogurt production		
87.	Which of the following compound	ds con			
	buttery flavor in dairy products?				
	(1) Diacetyl	(2)	Acetoin		
	(3) Hexanal	(4)	Isoamyl accetate		
88.	Which analytical technique is mos	t wid			
	flavor compounds?		· · · · · · · · · · · · · · · · · · ·		
	(1) HPLC	(2)	GC-MS		
	(3) IR Spectroscopy				
	(b) III opecitoscopy	(4)	UV-Vis Spectrophotometry		

	Code-p				
Question No.	Questions				
89.	The electronic nose (E-nose) operates on the principle of:				
	(1) Mass spectrometry				
	(2) Sensor array detecting volatile patterns				
	(3) FTIR				
	(4) Chromatographic separation				
90.	Phytosterols are used in functional foods mainly to:				
	(1) Improve taste (2) Increase sugar content				
	(3) Enhance protein quality (4) Lower cholesterol absorption				
91.	The color stability of canned peas is maintained primarily by				
	controlling:				
	(1) pH and blanching time (2) Sodium chloride content				
	(3) Oxygen and vacuum sealing (4) Vitamin C concentration				
92.	Hydrostatic Pressure Processing (HPP) primarily inactivates				
	microorganisms by:				
	(1) Rupturing cell walls mechanically				
-	(2) Creating thermal gradients				
	(3) Altering food pH				
	(4) Denaturation of membrane proteins				
93.	Hurdle technology is based on:				
	(1) Application of one lethal preservation method				
	(2) Using multiple mild preservation factors synergistically				
	(3) Employing non-thermal preservation exclusively				
	(4) Combining physical and chemical sterilization				
94.	Microfiltration and bacteriofugation are mainly applied in:				
	(1) Dairy processing (2) Fruit juice concentration				
	(3) Cereal milling (4) Meat tenderization				

0			Code		
Question No.	Questions				
95.	In pasteurization, the key paran	neter to e	ensure microbial safety is:		
	(1) Total solids content	(2)	Lethal rate (F-value)		
	(3) Time-temperature combination	tion (4)	Viscosity of the food		
96.	Thermo sonication enhance micr	robial in	activation by:		
	(1) Combining moderate heat v	vith ultra	asonic cavitation		
	(2) Increasing pH and reducing	gaw			
	(3) Generating radiation energ	у			
	(4) Using filtration and drying simultaneously				
97.	The most heat-resistant spoilage organism in canned foods is:				
	(1) Clostridium botulinum	(2)	$Bacillus\ stear other mophilus$		
	(3) Aspergillus niger	(4)	Lactobacillus bulgaricus		
98.	The primary spoilage in tomato ketchup is due to:				
	(1) Yeast fermentation	(2)	Lactic acid bacteria		
	(3) Spore-forming bacteria	(4)	Molds and osmophilic yeasts		
99.	The aleurone layer in cereals is	rich in:			
	(1) Starch	(2)	Protein and minerals		
	(3) Cellulose	(4)	Lipids only		
100.	The key enzyme in dough devel	opment	affecting elasticity is:		
	(1) Protease	(2)	Amylase		
	(3) Lipase	(4)	Polyphenol oxidase		

SET-"Y" (Total No. of printed pages: 17)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

PHD-EE, November-2025 FOOD TECHNOLOGY

10003 Sr. No.

Code

Time: 1¼ Hours Roll No	Total Quest (in figure)	ions : 100	Max. Marks: 100 (in words)
Name:		Date of Birth:	
Father's Name:		Mother's Name:	
Date of Examination:			

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. All questions are compulsory.

2. The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.

3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by

the candidate.

4. Question Booklet along-with answer key of all the A,B,C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.

5. The candidate MUST NOT do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself. Answers

MUST NOT be ticked in the Question book-let.

6. There will be negative marking and a deduction of 0.25 marks for each wrong answers. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.

Use only Black or Blue BALL POINT PEN of good quality in the OMR Answer-

Sheet

8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.

Question No.	Questions				
1.	Which of the following is/are used for lacquering?				
	(1) Epoxy Phenolic group				
	(3) Organosol group	(4)	All of the above		
2.	Bitter component present i	n Saffron is :			
	(1) Safranic acid	(2)	Safranal		
	(3) Safranone	(4)	All of the above		
3.	ISO 22000 is related to:				
	(1) QMS	(2)	HACCP		
	(3) FSMS	(4)	TQM		
4.	Which of the following is a cyanobacteria?				
	(1) Nostoc	(2)	Boletus		
	(3) Glomus	(4)	Amanita		
5.	With proper tempering of fat, we can avoid:				
	(1) Rancidity	(2)	Fat bloom		
	(3) Reversion	(4)	All of the above		
6.	During the extraction of oil from oil seeds the process of removal of				
	mucilaginous material is te				
	(1) Tempering	(2)	Winterizing		
	(3) Bleaching	(4)	Degumming		
7.	The primary amino acid (ex	clusively) fou	nd in tea is :		
	(1) Theaflavin	(2)	Thearubigin		
	(3) Theanine	(4)	Caffeine		
8.	Which of the following enzyme is used as anti-staling agent in bread?				
	(1) a amylase	(2)	Protease		
	(3) Lipase	(4)	Ligase		

			Code-C		
Question No.	Que	estions	s		
9.	Which of the following is used as	antical	king agent?		
	(1) Tricalcium phosphate	(2)	Calcium silicate		
	(3) Magnesium silicate	(4)	All of the above		
10.	Calculate the specific heat of Or	range ji	uice concentrate having a solid		
	content of 35%:				
	(1) 0.72 BTU/(lb°F)	(2)	0.24 BTU/(lb°F)		
	(3) 0.48 BTU/(lb°F)	(4)	0.96 BTU/(lb°F)		
11.	Critical Control Points (CCPs) in	HACC	P refer to:		
	(1) Steps where control can be a	applied	to eliminate or reduce hazards		
	(2) Quality parameters for sens				
	(3) Packaging steps				
	(4) Equipment cleaning stages				
12.	FSSAI (Food Safety and Standar	rds Aut	hority of India) was established		
	under:				
	(1) PFA Act, 1954				
	(2) Food Safety and Standards		06		
	(3) Essential Commodities Act,				
	(4) Consumer Protection Act, 1		111		
13.	Energy balance in food processing is essential for:				
	(1) Calories intake calculation		1 di ining aguinment		
	(2) Determining thermal efficient	ency an	d optimizing equipment		
	(3) Quality control studies				
	(4) Storage design	cerevisi	iae is commonly used in the		
14.	100001131111111	cerevisi	de is commonly used in		
	production of:	(2)) Vinegar		
	(1) Bioethanol	(4)			
	(3) Antibiotics	(2)	VIUMINIO		

Quanting			Code-C		
Question No.		tions			
15.	Batch fermentation is characterized	d by:	Make and Apple 18		
	(1) Continuous addition of substrate				
	(2) No inflow or outflow during fer	rment	ation		
	(3) Removal of product continuous	sly			
	(4) Steady-state growth				
16.	Aspergillus oryzae is the mold used	in:			
	(1) Soy sauce fermentation	(2)	Bread leavening		
	(3) Beer brewing	(4)	Yogurt production		
17.	Which of the following compoun	ds cor	ntributes to the characteristic		
	buttery flavor in dairy products?				
	(1) Diàcetyl	(2)	Acetoin		
	(3) Hexanal	(4)	Isoamyl accetate		
18.	Which analytical technique is most widely used for identifying volatile				
	flavor compounds?		Allegan series		
	(1) HPLC	(2)	GC-MS		
	(3) IR Spectroscopy	(4)	UV-Vis Spectrophotometry		
19.	The electronic nose (E-nose) operates on the principle of:				
	(1) Mass spectrometry				
	(2) Sensor array detecting volatile patterns				
	(3) FTIR				
	(4) Chromatographic separation				
00	Phytosterols are used in functions		ds mainly to :		
20.					
	(1) Improve taste	(2)			
	(3) Enhance protein quality	(4)	Lower cholesterol absorption		

Question No.	Questions				
21.	The color stability of canned peas is maintained primarily by				
	controlling:				
	(1) pH and blanching time (2) Sodium chloride content				
	(3) Oxygen and vacuum sealing (4) Vitamin C concentration				
22.	Hydrostatic Pressure Processing (HPP) primarily inactivates				
	microorganisms by:				
	(1) Rupturing cell walls mechanically				
	(2) Creating thermal gradients				
	(3) Altering food pH				
	(4) Denaturation of membrane proteins				
23.	Hurdle technology is based on:				
	(1) Application of one lethal preservation method				
	(2) Using multiple mild preservation factors synergistically				
	(3) Employing non-thermal preservation exclusively				
	(4) Combining physical and chemical sterilization				
24.	Microfiltration and bacteriofugation are mainly applied in:				
	(1) Dairy processing (2) Fruit juice concentration				
	(3) Cereal milling (4) Meat tenderization				
25.	In pasteurization, the key parameter to ensure microbial safety is:				
	(1) Total solids content (2) Lethal rate (F-value)				
	(3) Time-temperature combination (4) Viscosity of the food				
26.	Thermo sonication enhance microbial inactivation by:				
	(1) Combining moderate heat with ultrasonic cavitation				
	(2) Increasing pH and reducing aw				
	(3) Generating radiation energy				
	(4) Using filtration and drying simultaneously				

Question		0-		Code-C	
Na	Questions				
27.	The	most heat-resistant spoilage or	ganis	sm in canned foods is:	
	(1)	Clostriaium botulinum	(2)	$Bacillus\ stear other mophilus$	
20	(3)	Aspergillus niger	(4)	Lactobacillus bulgaricus	
28.	The	primary spoilage in tomato ket	chup	is due to:	
	(1)	reast fermentation	(2)	Lactic acid bacteria	
	(3)	a decieria	(4)	Molds and osmophilic yeasts	
29.	The	aleurone layer in cereals is rich	in:		
	(1)	Starch	(2)	Protein and minerals	
	(3)	Cellulose	(4)	Lipids only	
30.	The	key enzyme in dough developm	ent a	ffecting elasticity is:	
	(1)	Protease	(2)	Amylase	
	(3)	Lipase	(4)	Polyphenol oxidase	
31.	Citation management software examples include:				
	(1)	PowerPoint	(2)	Mendeley, Zotero, EndNote	
	(3)	Excel, SPSS	(4)	None	
32.	Appeals and complaints process in journals aims to:				
	(1)	Resolve disputes fairly	(2)	Delay publication	
	(3)	Remove reviewers	(4)	Increase fees	
33.	The first step in the scientific research process is:				
	(1)	Data collection	(2)	Defining the problem	
	(3)	Hypothesis formulation	(4)	Experimentation	
34.	San	ipling error occurs due to:			
	(1)	Mistakes in data entry			
	(2)	Random selection of samples			
12.752.6	(3)	Bias in selection or inadequate	sam	ple size	
13	(4)	Faults during sampling			

O	Code-(
Question No.	Questions				
35.	The term replication in experimental design refers to:				
	(1) Repeating the experiment to estimate error				
	(2) Randomizing samples				
	(3) Using control group				
	(4) Avoiding bias				
36.	The most crucial feature of a scientific experiment is:				
	(1) Subjectivity (2) Objectivity				
	(3) Randomness (4) Cost				
37.	Factorial experiments are used to:				
	(1) Study interaction of factors simulataneously				
	(2) Study of one factor only				
	(3) Test unrelated factor variables				
	(4) Control random error				
38.	Documentation of data ensures:				
	(1) Destruction of raw data				
	(2) Confidentiality				
	(3) Reproducibility and transparency				
	(4) Reduction of sample size				
39.	When data are highly skewed, the best measure of central tendency is:				
	(1) Mean (2) Median				
	(3) Mode (4) Range				
40.	Corresponding author is responsible for:				
	(1) Only submitting the paper				
	(2) Reviewing all submissions in the journal				
	(3) Being the most senior author				
	(4) Handling communication between journal and all co-authors				
	ensuring integrity and approval				

	Code-C
Question No.	Questions
41.	The null hypothesis (H ₀) generally states that:
	(1) There is no significant difference
	(2) There is a significant difference
	(3) Variables are dependent
	(4) Data are biased
42.	The <i>t-test</i> is used to compare:
	(1) Variances of two samples
	(2) Frequencies of categories
	(3) Proportions of sample
	(4) Means of two independent samples
43.	Intellectual Property Rights (IPR) exists primarily to:
	(1) Prevent publication of new ideas
	(2) Reward plagiarism
	(3) Protect and encourage creator's innovation
	(4) Restrict public access to knowledge
44.	Patent protection in food technology is usually granted for:
	(1) Discovery of natural food components
	(2) Novel process, formulations, or packaging methods
	(3) New Traditional recipes
	(4) Public domain knowledge
45.	A Geographical Indication (GI) tag in foods refers to:
	(1) A patent for a regional product
	(2) Protection of a product's reputation based on its origin
	(3) A copyright of food company
	(4) Trademark of a company

	code-C			
Question No.	Questions			
46.	The acceptable similarity index for a Ph.D. thesis (as per UGC norms,			
	India) is usually:			
100	(1) Below 50%			
	(2) Below 30%			
	(3) Below 10-15% (excluding references and quotes)			
	(4) Exactly 20%			
47.	In research ethics, acknowledgement of funding and collaborators is			
	necessary because:			
	(1) It increases citation count			
	(2) It ensures transparency and accountability			
	(3) It is optional courtesy			
	(4) It reduces plagiarism score			
48.	Falsification refers to:			
	(1) Deliberate manipulation of research data or methods to			
	misrepresent results			
	(2) Typographical errors			
	(3) Honest mistake in analysis			
	(4) Reuse of methodology			
49.	Redundant publication occurs when:			
	(1) A paper is co-authored by several authors			
	(2) Review and original papers overlap			
	(3) The same research data are published in more than one journal			
	without acknowledgement			
	(4) A thesis is uploaded in an institutional repository			

Question	Questions				
No					
50.	The ORCID (Open Researcher and Contributor ID) system is used for:				
	(1) Checking plagiarism				
	(2) Assigning unique identifiers to researcher to distinguish their work				
	(3) Indexing journals				
	(4) Measuring impact factor				
51.	A rheogram is a graphical repres	entatio	on of the flow behavior, which		
	shows the relationship between:				
	(1) Rate constant and temperatu	re(2)	Pressure and temperature		
	(3) Viscosity and temperature	(4)	Shear stress and shear rate		
52.	Vitamin D ₂ is also known as:				
	(1) Cholecalciferol	(2)	Cobalamine		
	(3) Ergocalciferol	(4)	Pyridoxine		
53.	The limit of iodine in iodized salt is:				
	(1) 20-60 mg	(2)	80-100 mg		
	(3) 100-200 mg	(4)	250-500 mg		
54.	Water activity (aw) of fruit juice co	ncenti	cate is		
	(1) 0.2-0.3	(2)	0.5-0.6		
	(3) 0.1-0.2	(4)	0.7-0.9		
55.	The ideal packaging material for	high p	ressure processed food :		
	(1) Metal cans	(2)	Flexible pouches		
	(3) Glass	(4)	Rigid trays		
56.	Which of the following is a non-climacteric fruit?				
	(1) Apple	(2)	Elephant apple		
	(3) Mango	(4)	Papaya		
57.	"Salt balance" theory was given b	y:			
	(1) Samuel and Hill	(2)	Summer and Schultz		
	(3) Singer and Nicholson	(4)	Sommer and Hart		

Question No.	Questions				
58.	The main function of the stabilizers in ice-cream is to:				
	(1) Improve and provide uniform whipping quality				
	(2) Produce a drier ice-cream w	with smot	her body and texture		
	(3) Prevent formation of ice cry	rstals			
	(4) None of the above				
59.	White pepper is produced conve	ntionally			
	(1) Ripe berries	(2)	Fermented berries		
	(3) Unripe berries	(4)	Discolored berries		
60.	Scoville value measures the:				
	(1) Sweetness of sugar	(2)	Saltiness of NaCl		
	(3) Pungency of chilli	(4)	Sourness of lemon		
61.	One-way ANOVA is used to test	: *			
	(1) Relationship between two quantitative variables				
	(2) Difference between means of two groups				
	(3) Difference between means of three or more groups on a single factor				
	(4) Correlation strength				
62.	If the computed F-value>critical F-value at 5% level, then:				
	(1) Accept H ₀	(2)	Reject H ₀		
	(3) Accept H ₁	(4)	Both (2) and (3)		
63.	Which database introduced the h-index concept?				
	(1) Web of Science				
	(2) Scopus				
	(3) Google Scholar				
	(4) Independently by Jorge Hir	rsch			
0.4	Impact Factor is published annu	ually in:			
64.					
64.	(1) Scopus Metrics	(2)	Journal Citation Reports (JCR)		

Question		0	41	Code-C		
Na			estion			
65.	Whi	ich of the following is not a me	asure	of dispersion?		
	(1)	Range	(2)	Variance		
	(3)	Standard Deviation	(4)	Mean		
66.	Scopus Author ID helps in:					
	(1)	Checking plagiarism				
	(2) Identifying and grouping publications of the same author					
	(3)	Ranking universities				
	(4)	Creating reference lists				
67.	The null hypothesis (H ₀) is a statement that:					
	(1) There is a significant relationship between variables					
	(2) Variables are dependent					
	(3) There is no significant difference or relationship					
	(4)	Means are unequal				
68.	The Standard Error of Mean (SEM) decreases when:					
	(1)	Sample size decreases	(2)	Sample variance increases		
	(3)	Sample size increase	(4)	Mean decrease		
69.	The	e standard deviation is the :		Same Marketing		
	(1)	Square of variance				
	(2)	Square root of variance		La Marie Mar		
	(3)	Reciprocal of variance				
	(4)	Difference between mean an	d Medi	an		
70.	A co	orrelation coefficient r=0 impl	ies:			
	(1)	Strong positive correlation	(2)	Strong negative correlation		
	(3)	Non linear correlation	(4)	Perfect correlation		

Question No.	Questions					
71.	The correlation coefficient (r) measures:					
	(1) The degree of linear relationship between two variables					
	(2) The average of two variables					
	(3) The ratio of two variances					
	(4) The difference between tw	o means				
72.	In food analysis, composite sam	pling mea	ns:			
	(1) Mixing several subsample	s for one re	epresentative sample			
	(2) Testing one unit only					
	(3) Randomly ignoring outlier	S				
	(4) Averaging duplicates					
73.	Duplicate analysis helps in:					
	(1) Checking precision and accuracy					
	(2) Reducing sample size					
	(3) Avoiding bias					
	(4) Increasing dispersion					
74.	A variable is:					
	(1) A constant value					
	(2) A measurable characteristic that varies					
	(3) Experimental varied data					
	(4) None					
75.	A hypothesis is rejected when					
	(1) p-value<α	(2)	p-value>α			
	(3) Confidence level = 1	(4)	Data incomplete			
76.	Web of Science is maintained	by:				
	(1) Elsevier	(2)	Springer			
	(3) Clarivate Analytics	(4)	Scopus			

Question	Q	uestions				
No. 77.	Scopus is owned by:		Canada Aria Cara Cara Cara Cara Cara Cara Cara C			
	(1) Elsevier	(2)	Clarivate			
	(3) Wiley	(4)	Taylor & Francis			
78.	Google Scholar is:					
	(1) Paid Journal	(2)	Peer-review system			
	(3) University database	(4)	Free citation database			
79.	The h-index measures:					
	(1) Productivity and citation in	mpact of a	a researcher			
	(2) Journal quality research a					
	(3) Funding level					
	(4) Experimental accuracy					
80.	Authorship should be based on	:				
	(1) Supervisory role only		Commission of the Commission o			
	(2) Financial support only					
	(3) Substantial contribution to conception or analysis					
	(4) None					
81.	The major edible oilseed cultivated in India by area is:					
	(1) Soybean	(2)	Groundnut			
	(3) Mustard-rapeseed	(4)	Sesame			
82.	The major limiting amino acid	in millets	s is:			
	(1) Lysine	(2)	Methionine			
	(3) Leucine	(4)	Tryptophan			
83.	Steam distillation is used in sp	ice proces	ssing mainly to obtain:			
	(1) Oleoresins	(2)	Essential oils			
	(3) Pigments	(4)	Resin acids			

Question No.	Questions				
84.	The most heat-resistant enzyme in milk is:				
	(1) Lipase	(2)	Catalase		
	(3) Alkaline Phosphatase	(4)	Peroxidase		
85.	Browning reaction in milk occu	irs due to	reaction between:		
	(1) Lipid and lactose	(2)	Lysine and maltose		
	(3) Glucose and maltose	(4)	Lysine and lactose		
86.	In a refrigeration cycle, expans	sion of ref	rigerant through the expansion		
	valve is at constant:				
	(1) Temperature	(2)	Pressure		
	(3) Enthalpy	(4)	Relative humidity		
87.	Trimethylamine (TMA) is spoiled fish is produced by:				
	(1) Protein oxidation				
	(2) Bacterial reduction of trin	nethylam	ine oxide		
	(3) Lipid hydrolysis				
	(4) Maillard reaction				
			The state of the s		
88.	Tenderization of meat by papa	ain acts th	rough:		
88.	(1) Carbohydrate hydrolysis	ain acts th	rough:		
88.					
88.	(1) Carbohydrate hydrolysis				
88.	(1) Carbohydrate hydrolysis (2) Cleavage of connective tis				
88.	(1) Carbohydrate hydrolysis(2) Cleavage of connective tis(3) Oxidation of fat	ssue prote	eins		
	 (1) Carbohydrate hydrolysis (2) Cleavage of connective tis (3) Oxidation of fat (4) Heat coagulation 	ssue prote	d to:		

	Code
Question No.	Questions
90.	Oil coating of eggs preserves quality by:
	(1) Inhibiting microbial growth by creating anaerobic conditions
	(2) Reducing water loss
	(3) Increasing air cell
	(4) Preventing yolk movement
91.	A Completely Randomized Design (CRD) is most appropriate when:
	(1) Experimental units are heterogeneous
	(2) Experimental units are homogeneous
	(3) There are blocking factors
	(4) There are multiple treatments and replicates
92.	Factorial design allows a researcher to:
	(1) Test one factor at a time
	(2) Ignore confounding
	(3) Reduce sample size drastically
	(4) Study interaction effects between factors
93.	Sampling error arises due to:
	(1) Poor measurement techniques
	(2) Sample not representing the population
	(3) Data recording mistake
	(4) None of these
94.	In food analysis, composite sampling is used to:
	(1) Reduce analytical cost and variability
	(2) Increase number of analyses
	(3) Decrease representativeness
	(4) Increase variability

Question	Code					
No.	Questions					
95.	During data compilation, the first step is:					
	(1) Interpretation (2) Editing and coding					
	(3) Data collection (4) Hypothesis formulation					
96.	The ANOVA (Analysis of variance) technique assumes that:					
	(1) Samples are dependent					
	(2) Population variances are equal					
	(3) Error are not normally distributed					
	(4) Treatments are independent					
97.	Non-sampling errors are caused by:					
	(1) Random variation (2) Improper sample size					
	(3) Data recording mistake or bias (4) Using wrong population					
98.	Plagiarism refers to:					
	(1) Unintentional spelling mistakes					
	(2) Copying another's work without credit					
	(3) Publishing in multiple journals					
	(4) Peer-review rejection					
99.	COPE stands for:					
	(1) Committee on Publication Ethics					
	(2) Council of Publication Editors					
	(3) Conference of Paper Ethics					
	(4) Consortium of Professional Editor					
	Which of the following is an example of publication misconduct?					
	(1) Peer reviewing (2) Duplicate submission					
	(3) Citation indexing (4) Data archiving					
1	o) Oldavion manning					

SET-"Y" (Total No. of printed pages : 17)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

PHD-EE, November-2025 **FOOD TECHNOLOGY**

10016

Sr. No.

od D

Time: 11/4 Hours	Total Quest	ions : 100	Max. Marks : 100
Roll No.	(in figure)		(in words)
Name:	((III words)
Father's Name:			e:
Date of Examination:			
(Signature of the candid		(Signa	ture of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING, INFORMATION/ INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

All questions are compulsory.

The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.

Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by

the candidate.

Question Booklet along-with answer key of all the A,B,C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.

The candidate MUST NOT do any rough work or writing in the OMR Answer-5. Sheet. Rough work, if any, may be done in the question book-let itself. Answers

MUST NOT be ticked in the Question book-let.

There will be negative marking and a deduction of 0.25 marks for each wrong answers. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.

Use only Black or Blue BALL POINT PEN of good quality in the OMR Answer-

Sheet.

BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.

Question		Question	Code-L			
No.						
1.	The major edible oilseed cultivated in India by area is:					
	(1) Soybean	(2)	Groundnut			
	(3) Mustard-rapeseed	(4)	Sesame			
2.	The major limiting amino acid in millets is:					
	(1) Lysine	(2)	Methionine			
	(3) Leucine	(4)	Tryptophan			
3.	Steam distillation is used in sp	pice proces	ssing mainly to obtain:			
	(1) Oleoresins	(2)	Essential oils			
	(3) Pigments	(4)	Resin acids			
4.	The most heat-resistant enzyn	ne in milk	is:			
	(1) Lipase	(2)	Catalase			
	(3) Alkaline Phosphatase	(4)	Peroxidase			
5.	Browning reaction in milk occurs due to reaction between:					
	(1) Lipid and lactose	(2)	Lysine and maltose			
	(3) Glucose and maltose	(4)	Lysine and lactose			
6.	In a refrigeration cycle, expansion of refrigerant through the expansion					
	valve is at constant:					
	(1) Temperature	(2)	Pressure			
	(3) Enthalpy	(4)	Relative humidity			
7.	Trimethylamine (TMA) is spoiled fish is produced by:					
	(1) Protein oxidation					
	(2) Bacterial reduction of trimethylamine oxide					
	(3) Lipid hydrolysis					
	(4) Maillard reaction					

			code-D		
Question No.	Questions				
8.	Tenderization of meat by papain acts through:				
	(1) Carbohydrate hydrolysis				
	(2) Cleavage of connective tissue	prote	eins		
	(3) Oxidation of fat				
	(4) Heat coagulation				
9.	The person square calculation is r	elated	l to:		
	(1) Momentum balance	(2)	Energy balance		
	(3) Mass balance	(4)	All of these		
10.	Oil coating of eggs preserves quali	ty by			
	(1) Inhibiting microbial growth by	y crea	ting anaerobic conditions		
	(2) Reducing water loss				
	(3) Increasing air cell				
	(4) Preventing yolk movement				
11.	Citation management software exa	mple	s include :		
	(1) PowerPoint	(2)	Mendeley, Zotero, EndNote		
	(3) Excel, SPSS	(4)	None		
12.	Appeals and complaints process in	journ	als aims to:		
	(1) Resolve disputes fairly	(2)	Delay publication		
	(3) Remove reviewers	(4)	Increase fees		
13.	The first step in the scientific resea	rch p	rocess is:		
	(1) Data collection	(2)	Defining the problem		
	(3) Hypothesis formulation	(4)	Experimentation		
14.	Sampling error occurs due to:		3		
	(1) Mistakes in data entry				
	(2) Random selection of samples				
	(3) Bias in selection or inadequate	sam	ple size		
	(4) Faults during sampling				
		7			

Question	Code-D
No.	questions
15.	The term replication in experimental design refers to:
	(1) Repeating the experiment to estimate error
	(2) Randomizing samples
	(3) Using control group
	(4) Avoiding bias
16.	The most crucial feature of a scientific experiment is:
	(1) Subjectivity (2) Objectivity
	(3) Randomness (4) Cost
17.	Factorial experiments are used to:
	(1) Study interaction of factors simulataneously
1	(2) Study of one factor only
	(3) Test unrelated factor variables
	(4) Control random error
18.	Documentation of data ensures:
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19.	When data are highly skewed, the best measure of central tendency is:
	(1) Mean (2) Median
	(3) Mode (4) Range
20.	Corresponding author is responsible for:
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	(3) Being the most senior author
	(4) Handling communication between journal and all co-authors,
	ensuring integrity and approval

Question No.		
21. 22.	One-way ANOVA is used to test: (1) Relationship between two quantitative (2) Difference between means of two grous (3) Difference between means of three or means of two grous of three or means of three or mean	ore groups on a single factor
		Both (2) and (3)
23.	Which database introduced the h-index cor (1) Web of Science (2) Scopus (3) Google Scholar (4) Independently by Jorge Hirsch	cept?
24.	(3) Research Gate (4) (Tournal Citation Reports (JCR) Cross Reference
25.	(1) hange	dispersion? Variance Mean
26.	Scopus Author ID helps in: (1) Checking plagiarism (2) Identifying and grouping publications (3) Ranking universities (4) Creating reference lists	of the same author

0	Code-L				
Question No.	Questions				
27.	The null hypothesis (H ₀) is a statement that:				
	(1) There is a significant relationship between variables				
	(2) Variables are dependent				
	(3) There is no significant difference or relationship				
	(4) Means are unequal				
28.	The Standard Error of Mean (SEM) decreases when:				
	(1) Sample size decreases (2) Sample variance increases				
	(3) Sample size increase (4) Mean decrease				
29.	The standard deviation is the:				
	(1) Square of variance				
	(2) Square root of variance				
	(3) Reciprocal of variance				
	(4) Difference between mean and Median				
30.	A correlation coefficient r=0 implies:				
	(1) Strong positive correlation (2) Strong negative correlation				
	(3) Non linear correlation (4) Perfect correlation				
31.	A Completely Randomized Design (CRD) is most appropriate when:				
	(1) Experimental units are heterogeneous				
	(2) Experimental units are homogeneous				
	(3) There are blocking factors				
91	(4) There are multiple treatments and replicates				
32.	Factorial design allows a researcher to:				
	(1) Test one factor at a time				
	(2) Ignore confounding				
	(3) Reduce sample size drastically				
	(4) Study interaction effects between factors				

Question No.	Questions				
33.	Sampling error arises due to:				
	(1) Poor measurement techniques				
	(2) Sample not representing the population				
	(3) Data recording mistake				
	(4) None of these				
34.	In food analysis, composite sampling is used to:				
	(1) Reduce analytical cost and variability				
	(2) Increase number of analyses				
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	(1) Samples are dependent				
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	(4) Treatments are independent				
37.	Non-sampling errors are caused by:				
	(1) Random variation (2) Improper sample size				
	(3) Data recording mistake or bias (4) Using wrong population				
38.	Plagiarism refers to:				
	(1) Unintentional spelling mistakes				
	(2) Copying another's work without credit				
	(3) Publishing in multiple journals				
	(4) Peer-review rejection				

Question		0		Code-D	
No.	4.41		estion	S	
39.		PE stands for :			
	(1)	Committee on Publication Et	hics		
	(2)	Council of Publication Editor	'S		
	(3)	Conference of Paper Ethics			
	(4)	Consortium of Professional E	ditor		
40.	Wh	ich of the following is an exam	ple of r	publication misson due 42	
	(1)	Peer reviewing	(2)	Duplicate submission	
	(3)	Citation indexing	(4)	Data archiving	
41.	Ar	heogram is a graphical repre	sentati	on of the flow heb arises article	
	sho	ws the relationship between:		on of the now benavior, which	
	(1)		re(2)	Pressure and temperature	
	(3)		(4)	Shear stress and shear rate	
42.	Vitamin D ₂ is also known as:				
	(1)	Cholecalciferol	(2)	Cobalamine	
	(3)	Ergocalciferol	(4)	Pyridoxine	
43.	The limit of iodine in iodized salt is:				
	(1)	20-60 mg	(2)	80-100 mg	
	(3)	100-200 mg	(4)	250-500 mg	
44.	Water activity (aw) of fruit juice concentrate is				
	(1)	0.2-0.3	(2)	0.5-0.6	
	(3)	0.1-0.2	(4)	0.7-0.9	
45.	The ideal packaging material for high pressure processed food:				
,	(1)	Metal cans	(2)	Flexible pouches	
	(3)	Glass	(4)	Rigid trays	
46.	Whi	ch of the following is a non-cli	macter	ric fruit ?	
	(1)	Apple	(2)	Elephant apple	
	(3)	Mango	(4)	Papaya	

Question No.	Ques	stion	ns .			
47.	"Salt balance" theory was given by:					
	(1) Samuel and Hill (2) Summer and Schultz					
	(3) Singer and Nicholson	(4)	Sommer and Hart			
48.	The main function of the stabilizers					
	(1) Improve and provide uniform v	whip	ping quality			
	(2) Produce a drier ice-cream with	smo	ther body and texture			
	(3) Prevent formation of ice crysta	1				
	(4) None of the above		and an an annual of the state o			
49.	White pepper is produced convention	nally	y from:			
	(1) Ripe berries	(2)	Fermented berries			
	(3) Unripe berries	(4)	Discolored berries			
50.	Scoville value measures the:	giv: o	All oals east monetive also be			
	(1) Sweetness of sugar	(2)	Saltiness of NaCl			
	(3) Pungency of chilli	(4)	Sourness of lemon			
51.	Critical Control Points (CCPs) in HA	ACC:	P refer to:			
	(1) Steps where control can be applied to eliminate or reduce hazards					
	(2) Quality parameters for sensory	eval	uation			
	(3) Packaging steps					
	(4) Equipment cleaning stages					
52.	FSSAI (Food Safety and Standards	Auth	nority of India) was established			
	under:					
	10F1					
	- 3 C C - d Standards Act.	- 19 64 and Standards Act. 2006				
	1 Commodities Act. 195		logh (fil Apple			
	Destaction Act. 1986		and Market			
((4) Consumer Protection Net, 1995		CIP			

Question	Questions Code—D					
No.						
53.	Energy balance in food processing is essential for:					
	(1) Calories intake calculation					
	(2) Determining thermal efficien	(2) Determining thermal efficiency and optimizing equipment				
	(3) Quality control studies					
	(4) Storage design					
54.	Recombinant Saccharomyces ce	revisio	ae is commonly used in the			
	production of :					
	(1) Bioethanol	(2)	Vinegar			
	(3) Antibiotics	(4)	Vitamins			
55.	Batch fermentation is characterized by:					
	(1) Continuous addition of substrate					
	(2) No inflow or outflow during fermentation					
	(3) Removal of product continuously					
	(4) Steady-state growth					
56.	Aspergillus oryzae is the mold use	d in:				
	(1) Soy sauce fermentation	(2)	Bread leavening			
	(3) Beer brewing	(4)	Yogurt production			
57.	Which of the following compounds contributes to the characteristic					
	buttery flavor in dairy products?					
	(1) Diacetyl	(2)	Acetoin			
	(3) Hexanal	(4)	Isoamyl accetate			
58.	Which analytical technique is most widely used for identifying volatile					
	flavor compounds?		TO SEE THE SECOND SECON			
	(1) HPLC	(2)	GC-MS			
	(3) IR Spectroscopy	(4)	UV-Vis Spectrophotometry			

			Code-D				
Question No.	Questions						
59.	The electronic nose (E-nose) operate	n the principle of:					
	(1) Mass spectrometry						
	(2) Sensor array detecting volatile patterns						
	(3) FTIR						
	(4) Chromatographic separation						
60.	Phytosterols are used in functional	food	s mainly to:				
	(1) Improve taste	(2)	Increase sugar content				
	(3) Enhance protein quality	(4)	Lower cholesterol absorption				
61.	Which of the following is/are used f	or la	cquering?				
	(1) Epoxy Phenolic group lacquers	(2)	White vinyl lacquers				
	(3) Organosol group	(4)	All of the above				
62.	Bitter component present in Saffron						
	(1) Safranic acid	(2)	Safranal				
	(3) Safranone	(4)	All of the above				
63.	ISO 22000 is related to:		TT L CCD				
	(1) QMS	(2)	HACCP				
	(3) FSMS	(4)	TQM				
64.	Which of the following is a cyanoba		a?				
	(1) Nostoc	(2)	Boletus				
	(3) Glomus	(4)	Amanita				
65.	With proper tempering of fat, we ca	n avo	oid:				
	(1) Rancidity	(2)	Fat bloom				
	(a) Descension	(4)	All of the above				
66.	During the extraction of oil from oil seeds the process of removal of						
00.	mucilaginous material is termed as	:					
	(1) Tempering	(2)	Winterizing				
	(3) Bleaching	(4)	Degumming				
	(U) Dictionary) Cada D				

Question			Code-D					
No.	Questions							
67.	The primary amino acid (exclusively) found in tea is:							
4	(1) Theaflavin	(2)	Thearubigin					
	(3) Theanine	(4)	Caffeine					
68.	Which of the following enzyme is used as anti-staling agent in bread?							
	(1) α amylase	(2)	Protease					
	(3) Lipase	(4)	Ligase					
69.	Which of the following is used as anticaking agent?							
	(1) Tricalcium phosphate	(2)	Calcium silicate					
	(3) Magnesium silicate	(4)	All of the above					
70.	Calculate the specific heat of Orange juice concentrate having a solid							
	content of 35%:							
	(1) 0.72 BTU/(lb°F)	(2)	0.24 BTU/(lb°F)					
	(3) 0.48 BTU/(lb°F)	(4)	0.96 BTU/(lb°F)					
71.	The null hypothesis (H ₀) generally states that:							
	(1) There is no significant difference							
	(2) There is a significant difference							
	(3) Variables are dependent							
	(4) Data are biased							
72.	The t-test is used to compare:							
	(1) Variances of two samples							
	(2) Frequencies of categories							
	(3) Proportions of sample							
	(4) Means of two independent	samples						

	Code-D
Question No.	Questions
73.	Intellectual Property Rights (IPR) exists primarily to:
	(1) Prevent publication of new ideas
	(2) Reward plagiarism
	(3) Protect and encourage creator's innovation
Syr)	(4) Restrict public access to knowledge
74.	Patent protection in food technology is usually granted for:
	(1) Discovery of natural food components
	(2) Novel process, formulations, or packaging methods
	(3) New Traditional recipes
	(4) Public domain knowledge
75.	A Geographical Indication (GI) tag in foods refers to:
	(1) A patent for a regional product
	(2) Protection of a product's reputation based on its origin
	(3) A copyright of food company
	(4) Trademark of a company
76.	The acceptable similarity index for a Ph.D. thesis (as per UGC norms,
	India) is usually:
	(1) Below 50%
	(2) Below 30%
	(3) Below 10-15% (excluding references and quotes)
	(4) Exactly 20%
77.	In research ethics, acknowledgement of funding and collaborators is
	necessary because:
	(1) It increases citation count
	(2) It ensures transparency and accountability
	(3) It is optional courtesy
	(4) It reduces plagiarism score

o don	Code-D			
Question No.	Questions			
78.	Falsification refers to:			
	(1) Deliberate manipulation of research data or methods to			
	misrepresent results			
	(2) Typographical errors			
	(3) Honest mistake in analysis			
	(4) Reuse of methodology			
79.	Redundant publication occurs when:			
	(1) A paper is co-authored by several authors			
	(2) Review and original papers overlap			
	(3) The same research data are published in more than one journal			
	without acknowledgement			
	(4) A thesis is uploaded in an institutional repository			
80.	The ORCID (Open Researcher and Contributor ID) system is used for:			
	(1) Checking plagiarism			
	(2) Assigning unique identifiers to researcher to distinguish their work			
	(3) Indexing journals			
	(4) Measuring impact factor			
81.	The color stability of canned peas is maintained primarily by			
	controlling:			
	(1) pH and blanching time (2) Sodium chloride content			
	(3) Oxygen and vacuum sealing (4) Vitamin C concentration			
82.	Hydrostatic Pressure Processing (HPP) primarily inactivates			
	microorganisms by:			
	(1) Rupturing cell walls mechanically			
	(2) Creating thermal gradients			
	(3) Altering food pH			
	(4) Denaturation of membrane proteins			

Questions					
Hundle technology is besed on :					
(2) Heiner Wildersteild preservation factors synergistically					
(3) Employing non thormal pr	reservatio	n exclusively			
(-) -		Fruit juice concentration			
		Meat tenderization			
		Lethal rate (F-value)			
	E . L. 17 A L. X	Viscosity of the food			
Thermo sonication enhance microbial inactivation by:					
(1) Combining moderate heat with ultrasonic cavitation					
(2) Increasing pH and reducing aw					
(3) Generating radiation energy					
(4) Using filtration and drying	g simultar	neously			
The most heat-resistant spoilage organism in canned foods is:					
(1) Clostridium botulinum	(2)	Bacillus stearothermophilu			
(3) Aspergillus niger	(4)	Lactobacillus bulgaricus			
The primary spoilage in tomato ketchup is due to:					
(1) Yeast fermentation	(2)	Lactic acid bacteria			
(3) Spore-forming bacteria	(4)	Molds and osmophilic yeas			
The aleurone layer in cereals is rich in:					
(1) Starch	(2)	Protein and minerals			
(3) Cellulose	(4)	Lipids only			
	Hurdle technology is based on (1) Application of one lethal p (2) Using multiple mild prese (3) Employing non-thermal pr (4) Combining physical and cl Microfiltration and bacteriofug (1) Dairy processing (3) Cereal milling In pasteurization, the key para (1) Total solids content (3) Time-temperature combin Thermo sonication enhance mid (1) Combining moderate heat (2) Increasing pH and reducing (3) Generating radiation ener (4) Using filtration and drying The most heat-resistant spoilag (1) Clostridium botulinum (3) Aspergillus niger The primary spoilage in tomate (1) Yeast fermentation (3) Spore-forming bacteria The aleurone layer in cereals is (1) Starch	Hurdle technology is based on: (1) Application of one lethal preservation (2) Using multiple mild preservation far (3) Employing non-thermal preservation (4) Combining physical and chemical standard (4) Combining physical and chemical standard (5) Dairy processing (2) (2) (3) Cereal milling (4) In pasteurization, the key parameter to (1) Total solids content (2) (3) Time-temperature combination (4) Thermo sonication enhance microbial into (1) Combining moderate heat with ultro (2) Increasing pH and reducing aw (3) Generating radiation energy (4) Using filtration and drying simultandard (5) The most heat-resistant spoilage organism (1) Clostridium botulinum (2) (3) Aspergillus niger (4) The primary spoilage in tomato ketchup (1) Yeast fermentation (2) (3) Spore-forming bacteria (4) The aleurone layer in cereals is rich in: (1) Starch (2)			

Question No.	Questions Code-D				
90.					
	The key enzyme in dough development affecting elasticity is: (1) Protease				
	(3) Linase (2) Amylase				
91.	The correlation coefficient (r) measures:				
	(1) The degree of linear and the				
	(1) The degree of linear relationship between two variables(2) The average of two variables				
	(3) The ratio of two variances				
	(4) The difference between two means				
92.	In food analysis composite and li				
	In food analysis, composite sampling means: (1) Mixing several subscriptor for				
	(1) Mixing several subsamples for one representative sample(2) Testing one unit only				
	(3) Randomly ignoring outliers				
	(4) Averaging duplicates				
93.	Duplicate analysis helps in:				
	(1) Checking precision and accuracy				
	(2) Reducing sample size				
	(3) Avoiding bias				
	(4) Increasing dispersion				
94.	A variable is:				
	(1) A constant value				
	(2) A measurable characteristic that varies				
	(3) Experimental varied data				
	(4) None				
95.	A hypothesis is rejected when:				
	(1) p-value< α (2) p-value> α				
	(3) Confidence level = 1 (4) Data incomplete				
	(1) Data incomplete				

Question			Code-			
No.	Questions					
96.	Web of Science is maintained by:					
	(1) Elsevier	(2)	Springer			
	(3) Clarivate Analytics	(4)	Scopus			
97.	Scopus is owned by:					
	(1) Elsevier	(2)	Clarivate			
	(3) Wiley	(4)	Taylor & Francis			
98.	Google Scholar is:	200				
	(1) Paid Journal	(2)	Peer-review system			
	(3) University database	(4)	Free citation database			
99.	The h-index measures:					
	(1) Productivity and citation imp	pact of a	a researcher			
	(2) Journal quality research arts	icles				
	(3) Funding level					
	(4) Experimental accuracy					
100.	Authorship should be based on:					
	(1) Supervisory role only					
((2) Financial support only					
	(3) Substantial contribution to conception or analysis					
(4) None					

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1	1	3		
2	4	4	4	3
3	2	4	2	1
4	1	2	3	2
5	3	4	1	3
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8	4		3	2
9	2	3	1	2
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11	3	3	1	1
12		2	1	2
13	1	4	2	1
14	2	2	2	2
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36		4	1	2
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37	4	2	1	3
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39	1	3	2	1
40	3	1	4	2
41	4	2	1	4
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44	1	3	2	4
45	2	1	2	2
46	4	2	3	2
47	3	1	2	4
48	1	3	1	3
19	4	2	3	1
50	1	4	2	3

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51	2	1	4	1
52	4	4	3	2
53	2	3	1	2
54	1	2	4	1
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56	2	3	2	1
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93	2	2	2	1
94	3	1	1	2
95	1	3	2	1
96	2	1	2	3
97	1	2	3	1
98	3	4	2	4
99	2	2	1	1
100	4	1	2	3

Comment of the Contract of the