


Name:			
Enrolment No:			
UPES End Semester Examination, May 2024			
Course: Food Microbiology		Semester : IV	
Program: Integrated B.Sc. M.Sc. Microbiology		Duration : 3 Hours	
Course Code: HSFT2011		Max. Marks: 100	
Instructions:			
S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q1	Which phrase best describes how food microbes affect food production? a) Must be killed in food before it is consumed b) Can be beneficial, neutral, or harmful to humans c) Must be prevented from entering the food supply d) Always pose a threat to producers, processors and consumers	1.5	CO4
Q2	Which food product requires microbial fermentation in its preparation? a) Pasta b) Bread c) Soup d) Tomato catch-up	1.5	CO4
Q3	<i>Penicillium roqueforti</i> is used to ripen which of the following? a) Swiss cheese b) Cottage cheese c) Cheddar Cheese d) Blue cheese	1.5	CO4
Q4	Which of the following used for accelerated cheese ripening? a) Addition of acid producing microbes. b) Addition of microbes produce diacetyl. c) Curing at high temperature d) Curing at high pressure.	1.5	CO3
Q5	Overripe bananas are the example of a) Chemical spoilage b) Self-enzymatic spoilage c) Microbial spoilage d) All of the above	1.5	CO1

Q6	<p>What is the best way to limit food spoilage from mould growth?</p> <ul style="list-style-type: none"> a) Reduced oxygen b) Lower pH c) Low temperatures d) Increase the humidity in environment 	1.5	CO1
Q7	<p>Which of the following is about Pin-Spot molding of eggs?</p> <ul style="list-style-type: none"> a) Very early spoilage of eggs. b) Small and compact moulds on the egg shel surface. c) Color of the pin-spot varies with mold types. d) All of the above. 	1.5	CO1
Q8	<p>What is the meaning of the term “redox”?</p> <ul style="list-style-type: none"> a) An intrinsic factor of a foods ability to accept or transfer electrons b) A time period in which bacteria in a population of bacteria will double c) The surface or material on which bacteria will grow and get oxygen d) None of the above 	1.5	CO1
Q9	<p>Which extrinsic factor can induce microbial growth in ““Dried meat products are vacuum packaged””?</p> <ul style="list-style-type: none"> a) Temperature b) Time c) Atmosphere d) Relative humidity 	1.5	CO2
Q10	<p>Which definition applies to microbial foodborne infection? Select all that apply.</p> <ul style="list-style-type: none"> a) Illness results from eating food which requires bacterial growth during its preparation. b) Illness results from eating food in which illness causing pathogens are present. The pathogens multiply in tissues in the body. c) Illness results from eating food that has been contaminated with chemicals (toxins) during preparation d) Illness results from eating food with pre-formed toxins from bacteria, fungus, algae or other microbes. The toxins are present in the food before it is ingested. 	1.5	CO2
Q11	<p>Why should food service workers understand how foodborne illnesses are identified and controlled?</p> <ul style="list-style-type: none"> a) Food service workers are the most common source of pathogens in prepared food. b) Food service workers are usually the first ones to be informed of a foodborne illness. c) Food service workers are not responsible for management and control food safety. d) None of the above 	1.5	CO6

Q12	<p>What is the relationship between cleaning and sanitizing?</p> <p>a) Cleaning is important to remove debris before sanitizing occurs.</p> <p>b) Sanitizing uses harsher chemicals than cleaning.</p> <p>c) Sanitizing is done more frequently than cleaning.</p> <p>d) Cleaning is unnecessary in areas that are sanitized.</p>	1.5	CO2
Q13	<p>Which etiologic agent is most commonly associated with eggs?</p> <p>a) <i>Pseudomonas</i></p> <p>b) <i>Salmonella</i></p> <p>c) <i>Bacillus cereus</i></p> <p>d) <i>Clostridium perfringens</i></p>	1.5	CO1
Q14	<p>Which of the following produces the toxic substance mycotoxin?</p> <p>a) Fungal organisms</p> <p>b) Lactic acid bacteria</p> <p>c) Probiotic microbes</p> <p>d) Primary fermentation</p>	1.5	CO2
Q15	<p>Which phrase best describes pathogenic microbes?</p> <p>a) They harm or cause disease in a host organism.</p> <p>b) They trigger an allergic reaction when ingested.</p> <p>c) They promote digestive health and remain in the gut.</p> <p>d) They provide nutrients essential to the fermentation process.</p>	1.5	CO2
Q16	<p>What are the two most important ways for food handlers to prevent the spread of pathogenic microbes in this list?</p> <p>a) Ensure that hand washing is done properly and frequently to prevent contamination of food.</p> <p>b) Ensure that clothing standards are adequate and adhere to code.</p> <p>c) Ensure that correct sanitizers are used and results are monitored.</p> <p>d) Ensure that food-grade gloves are worn by workers and changed as often as necessary to prevent contamination of food</p>	1.5	CO2
Q17	<p>For which two of the following food preparation processes heating to a specific temperature for a specific time most critical??</p> <p>a) Canning</p> <p>b) Smoking</p> <p>c) Dehydration</p> <p>d) Freeze drying</p>	1.5	CO2
Q18	<p>At what point does a HACCP strategy become important in a new food service establishment?</p> <p>a) As soon as staff are hired</p> <p>b) When the facility is being designed</p>	1.5	CO6

	c) As soon as the equipment has been installed d) When the menus or products have been determined		
Q19	Which statement explains why hazard analysis and critical control points are essential in the food preparation industry? a) Critical control points are needed due to the time it takes to prepare the food. b) Microbial contamination of foods is always a result of poor temperature control. c) Microbial contamination of foods can occur at many different steps during processing. d) Critical control points are specific to the type of equipment used by a processing facility.	1.5	CO6
Q20	Which of the following is an intrinsic factor limiting microbial growth in food? a) Curing b) Acidity c) Freezing d) Sodium benzoate	1.5	CO1
Section B (4Qx5M=20 Marks)			
Q 1	Write short note on meat spoilage.	5	CO1
Q 2	a) What is the difference in soft and hard cheese? b) What types of issues are associated with the maintenance of starter culture?	3+2=5	CO4
Q 3	Discuss the biochemistry of yogurt?	5	CO4
Q 4	Compare food intrinsic and extrinsic factors.	5	CO1
Section C (2Qx15M=30 Marks)			
Q 1	Recently, a group of students admitted to hospital with mucoid diarrhea (bloody), abdominal pain, and stomach cramps. Their travel history showed that they travelled back from Thailand 24h ago and had raw and under cooked foods that includes, oyster, chicken, raw salad, etc. there. a) Do you think it might be a case of food-borne illness? Discuss why and what types of illness according to you. b) What types of causative agents may be involved in such cases? c) What precautionary measure the travelers should have taken? a) Write the microbes associated with meat, eggs, and vegetables that can cause food-bore illness.	6+2+4=3= 15	CO1
Q 2	A young girl has fever, frequent urination, dysuria, pyuria, or pain upon urination. Upon enquiry it found that she ate half-	3+6+6=15	CO2

	<p>boiled eggs. She said that the egg yolk was having some unfamiliar red spots and she smell very mild odor.</p> <p>a) What types of food infection it may be?</p> <p>b) Discuss other types of microbial spoilage of eggs.</p> <p>c) What are the best practices for preserving eggs from such contamination?</p>		
<p>Section D (2Qx10M=20 Marks)</p>			
Q 1	<p>a) What microbes will you use to produce acetic acid?</p> <p>b) Write step by step process for production of acetic acids. Mention the substrate, parameters, and separation of the acid.</p>	2+8=10	CO5
Q 2	<p>a) What is FDA, HACCP, and FSSAI?</p> <p>b) Why HACCP adoption is must in food industry?</p> <p>c) Write the seven principles of HACCP.</p>	3+2+5=10	CO6