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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2021

Course: Food contamination and food borne diseases **Semester: III**

Program: M.Sc. Microbiology **Duration: 03 hrs.**

Course Code: HSMB0005P **Max. Marks: 100**

Instructions:

	SECTION A **(Type the answers in test box)**	**(20Q x1.5M= 30 Marks)**	**CO**
	MCQs or Fill in the blanks	**1.5**	**CO**
Q1	The food undergoes physical and chemical changes by which food becomes inedible or hazardous to eat known as _____	**1.5**	**CO1**
Q2	What are the intrinsic factors in food responsible for microbial growth? a. pH b. Moisture c. Oxidation-Reduction Potential d. All of the above	**1.5**	**CO1**
Q3	Yeast and mould count determination requires _____ A Nutrient agar B Acidified potato agar C Mc Conkey agar D Violet Red bile agar	**1.5**	**CO2**
Q4	Which of the following terms is used to describe the time required to kill all of the microbes within a sample at a given temperature? **a.** D-value b. Thermal death point c. Thermal death time d. Decimal reduction time	**1.5**	**CO4**
Q5	Which of the following microbial control methods does not actually kill microbes or inhibit their growth but instead removes them physically from samples? a. filtration b. desiccation c. lyophilization d. nonionizing radiation	**1.5**	**CO1**
Q6	The principal microorganism for yogurt formation are _____	**1.5**	**CO1**
Q7	Water activity can act as	**1.5**	**CO1**

	a. an intrinsic factor determining the likelihood of microbial proliferation b. a processing factor c. an extrinsic factor d. All of the above		
CQ8	The target microorganism in canning is a. Clostridium botulinum b. Streptococcus thermophiles c. PA 3679 d. Lactobacillus bulgaricus	**1.5**	**CO2**
Q9	Pasteurization is the heat treatment designed to kill a. All types of microorganism b. Spore forming c. Both d. None	**1.5**	**CO4**
Q10	Scientific and systematic way of defining, evaluating and controlling hazards to ensure the safety of food? a. Hazard analysis and critical control point (HACCP) b. Food safety objectives (FSO) c. Good hygiene practices (GHP) d. Good manufacturing practices (GMP)	**1.5**	**CO3**
Q11	Potentially hazardous food (PHF) refers to which category of food? a. Semi-perishable foods b. Perishable foods c. Non-perishable foods d. None of the above	**1.5**	**CO4**
Q12	Food preservation at low temperature works mainly by a) Killing the microbe b) reducing the generation time c) increasing the lag phage **d)** none of the above	**1.5**	**CO4**
Q13	Common food additive (preservative) helps to prevent food spoilage from microorganisms? True/False	**1.5**	**CO1**
Q14	Types of food contaminants? a. Bacterial toxins b. Pesticide residues c. Chemicals produced during processing d. All of the above	1.5	CO2
Q15	Food spoilage is not caused due to: a. Action of enzymes b. Growth of microorganisms c. Heating of food d. Food intoxication	**1.5**	**CO1**
Q16	Dairy molds are due to: *a. A.niger* *b. A.flavus* *c. A.paraciticus* *d. All of the above*	**1.5**	**CO 2**

Q17	1. Statement 1: Botulism is more dangerous than Staphylococcus. Statement 2: Botulism is encountered by humans only if they've eaten the toxin. The organism in itself is no harm. Staphylococcus needs air and grows on warm food only. a. True, False b. True, True c. False, False d. False, True	**1.5**	**CO2**
Q18	Bacteria multiply rapidly between 10 to 60^{O}C. This range being called as ----------	**1.5**	**CO4**
Q19	Spoilage of eggs is called as ----------	**1.5**	**CO1**
Q20	---------- is a pathogen causing food intoxication.	**1.5**	**CO2**
	SECTION B **(Scan and upload)**	**(4Qx5M=20 Marks)**	**CO**
Q	Short Answer Type Question (5 marks each)		
Q1	Enlist various ways to preserve dairy products from microbial spoilage	**5M**	**CO1**
Q2	Discuss various factors responsible for the animal products spoilage	**5M**	**CO1**
Q3	Elaborate the factors affecting growth of microorganism in foods	**5M**	**CO2**
Q4	Elaborate on food borne infection by C. jejuni.	**5M**	**CO2**
	SECTION C **(Scan and upload)**	**(2Qx15M=30 Marks)**	**CO**
Q	**Two case studies 15 marks each subsections**		
Q1	In villages, people often consume raw milk for its rich flavor and benefits. In one such hypothetical situation, raw milk was consumed by few people who developed abdominal pain, weight loss, anemia, pain, fever and night sweats. Answer the following questions based on this : a) What could be the serious disease and what is its likely causative? (2M) b) How is milk treated to avoid this and many other dieases? (4M) c) What are other microbes causing spoilage of milk? (2M) d) Why is this method of choice for preservation of milk? (2M) e) What are some methods for enumerating microbes in milk? (5M)	**15M**	**CO4**
Q2	A couple decided to go on vacation and keep only eggs in refrigerator. However, they mistakenly turned off electricity of house and when they came putrid odor was all over in fridge with following sight of few eggs	**15M**	**CO3**

	 a) What is this and what are potential causatives? (3M) b) What other types of spoilage happens in eggs? (7M) c) What causes eggs to be spoilt by microbes? (2M) d) How are eggs treated to prevent major food borne illnesses? (3M)		
	SECTION- D **(Scan and upload)**	**(2Qx10M=20 Marks)**	**CO**
Q	Long Answer type Question		
Q1	Discuss various types of canning methods and types of spoilage of canned food products with examples	**10M**	**CO1**
Q2	What procedures can be used for reducing health hazards associated with foods and for extending the shelf-life of foods	**10M**	**CO3**