


Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2023

Course: Microbial Food Spoilage and Food Borne Diseases

Semester: VI

Program: B.Sc. Microbiology

Time: 03 hrs.

Course Code: HSMB3006

Max. Marks: 100

Instructions: Read question carefully.

SECTION A

S. No.	MCQ's /Fill in the blanks/ T&F (1.5 marks each)	30 Marks	CO
1	Which of the following tapeworms parasite is usually found in raw pork? a) <i>Taenia saginata</i> b) <i>Taenia solium</i> c) <i>Ascaris lumbricoides</i> d) <i>Trichuris trichiura</i>	1.5	CO3
2	The microbiological examination of moulds in foods preferably use- (a) Mac Conkey broth (b) Violet Red Bile agar (c) Eosine Methylene blue agar (d) Potato dextrose agar	1.5	CO2
3	Which of the following are the intrinsic factors for microbial growth? (a) pH (b) Moisture (c) Oxidation-Reduction Potential (d) All of the above	1.5	CO2
4	Spoilage in food because of microbial activity can be prevented or delayed by a) Prohibiting the entry of micro-organisms in food b) Physical removal of micro-organisms c) Hindering the activity of micro-organisms d) All of above	1.5	CO4
5	Pasteurization is the heat treatment, designed primarily to kill a) Vegetable forms of microorganisms b) All form of microorganisms c) Spore	1.5	CO4

	d) None of above		
6	<p><i>Staphylococcus</i> is</p> <p>a) Bacteria b) Mold c) Yeast d) Virus</p>	1.5	CO4
7	<p>Which of the following is a type of foodborne illness?</p> <p>a) Salmonellosis b) HIV c) Corona d) Influenza</p>	1.5	CO2
8	<p>The most spoilage bacteria grows at</p> <p>a) Acidic pH b) Neutral pH c) Alkaline pH d) All of the above</p>	1.5	CO4
9	<p>Amebiasis is a common infection transmitted to humans through contaminated water and food, name the pathogen associated with the disease?</p> <p>a) Coxsackievirus b) <i>Clostridium perfringens</i> c) <i>Entamoeba histolytica</i> d) <i>Toxoplasma gondii</i></p>	1.5	CO5
10	<p>Which of the following is not a method of food preservation?</p> <p>a) Canning b) Freezing c) Fermentation d) Cooking</p>	1.5	CO3
11	<p>What is the most effective way to prevent foodborne illness?</p> <p>a) Washing hands frequently b) Cooking food thoroughly c) Keeping cold food cold and hot food hot d) All of the above</p>	1.5	CO4
12	<p>Shigellosis is also known as.....</p> <p>a) Chagas disease b) Typhoid c) Schistosomiasis d) Bacillary dysentery</p>	1.5	CO4

13	Which of the following is a foodborne virus? a) <i>Escherichia coli</i> b) <i>Listeria monocytogenes</i> c) <i>Hepatitis A</i> d) <i>Clostridium botulinum</i>	1.5	CO1
14	The hepatitis infection that is most commonly transmitted through the fecal-oral route is caused by which of the following types of hepatitis virus? Select the correct answers: a) Hep E virus b) Hep B virus c) Hep D virus d) Hep A virus	1.5	CO1
15	The causative agent of Cholera is a member of the genus a) <i>Salmonella</i> b) <i>Vibrio</i> c) <i>Treponema</i> e) <i>Helicobacter</i>	1.5	CO1
16	Which bacteria do not belong to <i>Enterobacteriaceae</i> family a) <i>Salmonella</i> b) <i>Shigella</i> c) <i>Staphylococcus</i> d) <i>Proteus</i>	1.5	CO1
17	“Some gram-negative bacteria are a part of normal inhabitants of human body and incidentally cause disease. Such microbes are known as_____.	1.5	CO1
18	<i>Entamoeba histolytica</i> is caused by a) Bacteria b) Virus c) Parasite d) Fungi	1.5	CO1
19	<i>Salmonella typhi</i> is a) Gram positive cocci b) Gram positive bacilli c) Gram negative cocci d) Gram positive bacilli	1.5	CO1
20	A bacterial food intoxication refers to a) illness caused by presence of pathogens b) food borne illness caused by the presence of a bacterial toxin formed in food c) both (a) and (b)	1.5	CO3

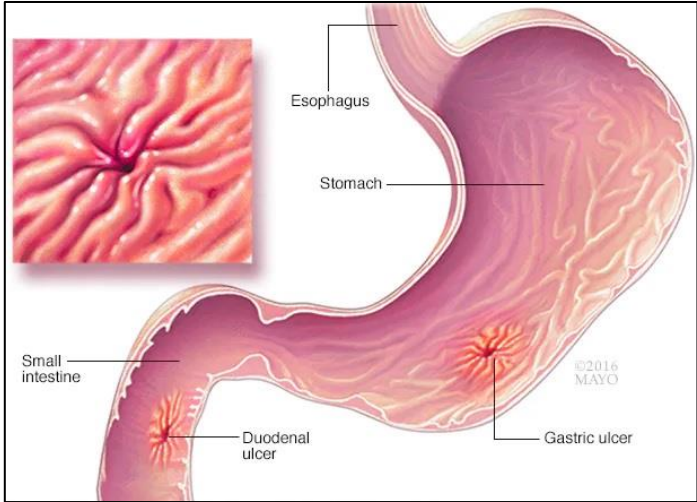
	d) none of the above		
SECTION B (5 marks each question)			
Q	Short Answer Type Question (5 marks each) Scan and Upload 4 questions 5 marks. Word limit (100-120)	20 Marks	CO
1	Write down the factors which affects microbial growth in food?	5	CO2
2	Write down the common drugs to treat Amoebiasis.	5	CO3
3	What is food spoilage? Which microorganisms are responsible for food spoilage.	5	CO1
4	Write down the common drugs to treat Typhoid fever?	5	CO1
SECTION C 30 marks			
Q	Two case studies 15 marks each subsection	30 Marks	CO
1	<p>Case Study 1 (Word limit-250-300)</p>  <p>©2016 MAYO</p> <p>Q1: Identify the disease from the above images. Q2: Name of the causative agent of the disease. Q3: How the disease transmitted to human? Q4: How the infection can be diagnosed? Q5: Mention the available drugs, used to treat the disease?</p>	15 (2+2+4+5+2)	CO1
2	Case Study 2 (Word limit- 250-300)	15 (3+3+3+6)	CO5



Fig 1

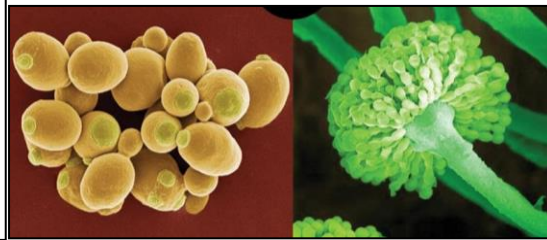


Fig 2

- Q1.** Which microorganism is responsible for spoilage in Fig 1?
Q2. How it causes spoilage to the food product? (Fig 1)
Q3. Which microorganisms are responsible for high acidic food spoilage?
Q4. Identify the microorganisms shown in Fig 2 and write down how it impact the self-life of food products.

SECTION- D 20 marks

Q Long Answer type Questions Scan and Upload (10 marks each) Word limit 200-250

**20
Marks**

CO

1 The below figure represents the spoilage of food.



MILK PRODUCT



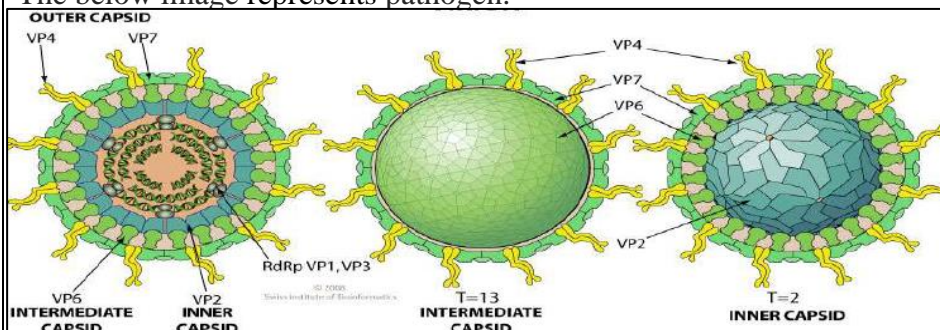
MEAT

**10
(5+5)**

CO4

Identify and describe the factors, responsible for spoilage of the above food items.

2 The below image represents pathogen.



**10
(2+2+3+3)**

CO3

	<p>Q1: Identify the pathogen from the above figure?</p> <p>Q2: What types of diseases they cause?</p> <p>Q3: Write different symptoms, associated with the disease.</p> <p>Q4: What are the diagnostic methods can be used to verify the infection?</p>		
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