


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester (Odd) Examination, December 2024.</b>			
Course: Food Microbiology		Semester: 3	
Program: M.Sc. FND		Time : 03 hrs.	
Course Code: HSMB8001		Max. Marks: 100	
<b>Instructions:</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
	Statement of question		
Q 1	Identify and explain the main causes of food spoilage	4	CO1
Q 2	Explain how temperature change can impact food preservation.	4	CO4
Q 3	Discuss the methods used for detecting food intoxication and food infection.	4	CO3
Q 4	What are the sources of microbes in fresh vegetables and fruits?	4	CO1
Q 5	Match following antioxidants with respective foods a) Ascorbic acid                                    i) Oil b) Butylated hydroxyanisole                  ii) Cheese c) Tocopherol                                        iii) Wine d) Gallic acid                                         iv) Cereals	4	CO2
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
	Statement of question		
Q7	a) Discuss Ohmic food processing? b) Write the advantages and disadvantages of Ohmic food processing.	5+5=10	CO1
Q 8	a) Write a short note on the canned food spoilage. b) Write names of microbes for spoilage of Soft Drink and Fruit Juices. c) How will you preserve such food?	4+3+3=10	CO2
Q 9	a) Evaluate how endplysin is advantageous over antibiotics? b) What are the critical factors of endolysin that should be analyze before it used as food preservatives?	5+5=10	CO2
Q 10	a) What is Hurdle Technology? b) Discuss the general characteristics of antimicrobial peptides c) Identify the advantages of using AMPs in food preservation compared to conventional chemical preservatives.	2+3+5=10	CO1
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
	Statement of question		

Q 11	<ul style="list-style-type: none"> <li>a) What is homofermentative and heterofermentative LAB?</li> <li>b) What is the limitation of biopreservation?</li> <li>c) Classify bacteriocin with one example.</li> <li>d) Can we use bacteriophage for food preservation? Explain.</li> </ul>	<p style="text-align: center;"><b>3+4+4+6+3 =20</b></p>	<p style="text-align: center;"><b>CO3</b></p>
Q 12	<ul style="list-style-type: none"> <li>a) Outline the steps involved in conducting a HACCP analysis?</li> <li>b) Discuss the benefits and challenges of implementing HACCP in food safety management?</li> <li>c) How many principles are there for HACCP?</li> <li>d) Explain how critical control points (CCPs) are determined and managed during food production</li> <li>e) Why auditing and record keeping is essential for an effective HACCP?</li> </ul>	<p style="text-align: center;"><b>4+4+4+4+4 =20</b></p>	