


Name:	
Enrolment No:	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2022**

Course: Food Microbiology and Safety	Semester: 5 <sup>th</sup>
Program: B. Tech. Food Technology	Duration: 3 Hours
Course Code: HSFT 2002	Max. Marks: 100

**Instructions:**

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
<b>Q 1</b>			
<b>1</b>	<b>Define food microbiology</b>	<b>1.5</b>	<b>CO 1</b>
<b>2</b>	<b>State the importance of microorganisms in food</b>	<b>1.5</b>	<b>CO 1</b>
<b>3</b>	<b>List any three microorganisms in food preparation</b>	<b>1.5</b>	<b>CO 1</b>
<b>4</b>	<b>List the environmental sources of microorganisms in food</b>	<b>1.5</b>	<b>CO 1</b>
<b>5</b>	<b>Define sterilization</b>	<b>1.5</b>	<b>CO 1</b>
<b>6</b>	<b>Define food poisoning</b>	<b>1.5</b>	<b>CO 1</b>
<b>7</b>	<b>Identify any three fermented vegetable products</b>	<b>1.5</b>	<b>CO 2</b>
<b>8</b>	<b>Report the starter culture for yogurt and culture buttermilk</b>	<b>1.5</b>	<b>CO 2</b>
<b>9</b>	<b>Select the yeast species for top and bottom fermentation of beer</b>	<b>1.5</b>	<b>CO 2</b>
<b>10</b>	<b>Report the importance of cheese ripening</b>	<b>1.5</b>	<b>CO 2</b>
<b>11</b>	<b>Recognize any two characteristic features of spoiled foods</b>	<b>1.5</b>	<b>CO 2</b>
<b>12</b>	<b>Identify the equipment use for sterilization and its operating conditions</b>	<b>1.5</b>	<b>CO 2</b>
<b>13</b>	<b>Classify the microorganisms based on temperature</b>	<b>1.5</b>	<b>CO 2</b>
<b>14</b>	<b>Write the importance of aging in wine</b>	<b>1.5</b>	<b>CO 3</b>
<b>15</b>	<b>Write any two benefits of fermented foods</b>	<b>1.5</b>	<b>CO 3</b>
<b>16</b>	<b>Interpret the intrinsic factors of food borne illness</b>	<b>1.5</b>	<b>CO 3</b>
<b>17</b>	<b>Write about sausage</b>	<b>1.5</b>	<b>CO 3</b>
<b>18</b>	<b>Demonstrate the application of single cell protein in food</b>	<b>1.5</b>	<b>CO 3</b>
<b>19</b>	<b>Illustrate the importance of canning for food preservation</b>	<b>1.5</b>	<b>CO 3</b>
<b>20</b>	<b>Sketch the growth phases of bacteria.</b>	<b>1.5</b>	<b>CO 3</b>
<b>Section B</b> <b>(4Qx5M=20 Marks)</b>			

<b>Q 1</b>			
<b>1</b>	<b>Differentiate between top fermented and bottom fermented beer.</b>	<b>5</b>	<b>CO 4</b>
<b>2</b>	<b>Illustrate the process of miso production with the help of flowchart.</b>	<b>5</b>	<b>CO 3</b>
<b>3</b>	<b>Explain the principle of hurdle technology with suitable example.</b>	<b>5</b>	<b>CO 2</b>
<b>4</b>	<b>Define single cell protein. What are the merits and demerits of single cell protein?</b>	<b>5</b>	<b>CO 1</b>
<b>Section C</b> <b>(2Qx15M=30 Marks)</b>			
<b>Q 1</b>			
<b>1</b>	<b>“HACCP is critical for food safety”- defend the statement</b>	<b>15</b>	<b>CO 5</b>
<b>2</b>	<b>Examine the different microorganism detection methods in food</b>	<b>15</b>	<b>CO 4</b>
<b>Section D</b> <b>(2Qx10M=20 Marks)</b>			
<b>Q 1</b>			
<b>1</b>	<b>Write short notes on the following:</b> a. Spoilage of canned food b. Defects in vinegar c. Tempeh d. Fish sauce	<b>10</b>	<b>CO 3</b>
<b>2</b>	<b>Appraise the processing of cheese with the help of suitable flow diagram</b>	<b>10</b>	<b>CO 5</b>