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| Name:  |   |  |     |
| Enrolment No:  |   |  |     |
| <b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b><br><b>End Semester (Odd) Examination, December 2024.</b> |   |  |     |
| Course: Food Microbiology  |   | Semester: V  |     |
| Program: B.Sc. FND and Int. B.Sc.M.Sc Microbiology   |   | Time : 03 hrs.   |     |
| Course Code: HSMB3029  |   | Max. Marks: 100  |     |
| <b>Instructions:</b>   |   |  |     |
| <b>SECTION A</b><br><b>(5Qx4M=20Marks)</b>   |   |  |     |
| S. No.   |   | Marks  | CO  |
|  | Statement of question   |  |     |
| Q 1  | Write Three non-thermal and two thermal processing methods of eggs.   | 4  | CO1 |
| Q 2  | Explain the impact of endolysin on controlling gram positive bacteria in food.  | 4  | CO4 |
| Q 3  | How will you differentiate food intoxication and infection. Explain with examples.  | 4  | CO3 |
| Q 4  | Write short notes on two important intrinsic factors that impact food spoilage.   | 4  | CO1 |
| Q 5  | What types of microbes can spoil high acid foods? Explain why.  | 4  | CO2 |
| <b>SECTION B</b><br><b>(4Qx10M= 40 Marks)</b>  |   |  |     |
|  | Statement of question   |  |     |
| Q7   | a) What are the different factors that contribute to the spoilage of dairy products?<br>b) Discuss ways to reduce spoilage in dairy products.<br>c) How does temperature affect food spoilage?  | 3+3+4=10   | CO1 |
| Q 8  | a) How do bacteria, molds, and yeasts contribute to meat deterioration with specific microbial example?<br>b) Describe the biochemical processes involved in the spoilage of meat.  | 5+5=10   | CO2 |
| Q 9  | a) How will you evaluate the spoiling of eggs?<br>b) Discuss egg preservation methods.  | 5+5=10   | CO2 |
| Q 10   | a) Write the name of the microbe that produces <i>staph</i> enterotoxin.<br>b) Write examples of foods contaminated by such bacteria.<br>c) Which media you will be using to grow them?<br>d) Write a short note on <i>staph</i> enterotoxin. | 2+2+2+4=10   | CO1 |
| <b>SECTION-C</b><br><b>(2Qx20M=40 Marks)</b>   |   |  |     |
|  | Statement of question   |  |     |
| Q 11   | a) Compare emerging technologies with the conventional technologies   | 5+2+4+6+3=20   | CO3 |

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|      | <ul style="list-style-type: none"> <li>b) What is bio-preservation?</li> <li>c) What are the ideal properties of bacteriocin?</li> <li>d) Write name of one example of bacteriocin from archaea, gram negative, and gram-positive bacteria.</li> <li>e) Write example of three commercially available bacteriocin.</li> </ul> |                                |  |
| Q 12 | <ul style="list-style-type: none"> <li>a) What is the HACCP?</li> <li>b) Why HACCP is needed in food processing?</li> <li>c) How many principles are there for HACCP?</li> <li>d) Discuss the principle I of HACCP?</li> <li>e) Why auditing and record keeping is essential for an effective HACCP?</li> </ul>               | <b>2+4+4+5+5</b><br><b>=20</b> |  |