


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
<b>Course: Chemistry of life process and bioactive compounds</b> <b>Program: MSc Chemistry</b> <b>Course Code: CHEM8025P</b>		<b>Semester: III</b> <b>Time: 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions:</b> Read all the below mentioned instructions carefully and follow them strictly: <ol style="list-style-type: none"> <li>Mention Roll No. at the top of the question paper.</li> <li>ATTEMPT ALL THE PARTS OF A QUESTION AT ONE PLACE ONLY.</li> </ol>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Write a short note on ketone bodies. How are these formed in the liver? Explain with appropriate reactions involved.	4	CO2
Q 2	Draw the structure of chlorophyll-a.	4	CO2
Q 3	Differentiate nucleosides and nucleotides. Write the names and structures of two purine bases.	4	CO2
Q 4	Discuss about fat-soluble and water-soluble vitamins. Write one example of each category.	4	CO3
Q 5	What is detoxication? State it along with its significance and chemistry.	4	CO2
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q 1	Differentiate high energy and low energy compounds. Give two examples of each. Draw the structure of energy currency.	10	CO1
Q 2	Which is the rate determining step of photosynthesis? Where does it take place? Explain the process for the formation of one glucose molecule.	10	CO2
Q 3	Carry out following conversions: a. Aspartic acid to oxaloacetic acid b. Oxaloacetic acid to aspartic acid.	10	CO2

Q 4	<p>Where are nucleic acids transformed to uric acid in the body? Show the conversion of guanosine monophosphate to uric acid.</p> <p style="text-align: center;"><b>OR</b></p> <p>Draw the structures of all the nucleotides found in DNA and name them.</p>	<b>10</b>	<b>CO2</b>
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
Q 1	<p>Write short notes on the following:</p> <ol style="list-style-type: none"> <li>a. Juvenile hormones</li> <li>b. Precocenes</li> <li>c. Mechanism of hormone action</li> </ol> <p style="text-align: center;"><b>‘OR’</b></p> <ol style="list-style-type: none"> <li>a. Write short notes on the following: <ol style="list-style-type: none"> <li>i. Advantages and disadvantages of antifeedants</li> <li>ii. Structure of pyrethroids</li> </ol> </li> <li>b. Write any two hormones secreted by pituitary gland with their functions.</li> </ol>	<b>5+5+10</b>	<b>CO3</b>
Q 2	<ol style="list-style-type: none"> <li>a. Draw the structure of one of the following vitamins. Also mention the dietary sources and the diseases caused by its deficiency: <ol style="list-style-type: none"> <li>i. Vitamin A</li> <li>ii. Vitamin C</li> </ol> </li> <li>b. Convert malonic acid to palmitic acid with reactions involved in the process.</li> <li>c. State the possible ways of single point mutation responsible for genetic errors.</li> </ol>	<b>5+10+5</b>	<b>CO3 CO2 CO2</b>