


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
<b>Course: Advance Functional Thinking</b> <b>Program: B.Tech-CSE-BD</b> <b>Course Code: CSBD 3002</b>		<b>Semester: V</b> <b>Time: 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions: Explain in short. (60-70 words)</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Explain the salient feature of SCALA language	4	CO1
Q 2	State Lambda function used on Java .8	4	CO1
Q 3	Recall concepts of Laziness in SCALA	4	CO1
Q 4	Define RDD and state the creation of RDD	4	CO2
Q 5	State the importance of action in SCALA. List various action performed on RDD	4	CO2
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
<b>Instruction: Write brief notes. (100-150 words). Explain Each of the pattern with java code</b>			
Q 6	Elucidate the Working of Prototype Pattern. Explain the consequence and problem of the same.	10	CO1
Q 7	Illustrate the difference between Creational and structural pattern. Explain the working of Facade Pattern.	10	CO4
Q 8	Paraphrase the MVC architecture pattern	10	CO2
Q 9	Explain the working of Factory pattern: State Problem, Solution and Consequence <b>Or</b> Abstract factory pattern: State Problem, Solution and Consequence	10	CO3
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
<b>Instruction: Write long answer. (Up to 350 words while explaining)</b> <b>Attempt any part of question no. 10 as there is an option “a” OR “b”.</b> <b>There is no choice for question no.11.</b>			

Q 10	<p>1. Write a recursive function with two unsigned int parameters, m and n. The precondition requires <math>0 \leq m</math> and <math>m \leq n</math>. The function prints a line of m asterisks, then a line of m+1 asterisks, and so on up to a line of n asterisks. Then the same pattern is repeated backward: a line of n asterisks, then n-1, and so on down to m. The only loop allowed in your implementation is a loop to print a line of m asterisks. You may have two copies of this loop in different places of the implementation.</p> <p>2. Explain the following concepts:</p> <ol style="list-style-type: none"> <li>Mutable</li> <li>H base</li> </ol> <p><b>Or</b></p> <p>1. Write a recursive function that has one parameter which is a size_t value called x. The function prints x asterisks, followed by x exclamation points. Do NOT use any loops. Do NOT use any variables other than x.</p> <p>2. Explain the following concepts:</p> <ol style="list-style-type: none"> <li>Immutable</li> <li>Zookeeper</li> </ol>	20	CO3
Q 11	Justify the following statement “Coalgebra after counit for a monad can be given by adjunction”.	20	CO4