


Name: Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022			
Course: B.Tech (CSE) + Blockchain Program: Introduction to Blockchain Course Code: CSBL2004		Semester : IIIrd Time : 03 hrs. Max. Marks: 100	
SECTION A (5Qx4M=20Marks)			
S. No.	Question	Marks	CO
Q 1	Name the common type of ledgers that can be considered by users in Blockchain?	4	CO1
Q 2	How Blockchain is useful for social media platforms. Draw neat and clean diagram to explain and give examples.	4	CO2
Q 3	Differentiate between pure and viewable function. Give examples.	4	CO3
Q 4	How Do You Recover an Ethereum Account with No Private Key?	4	CO4
Q 5	<p>Suppose, there is no error in following code. Write output of program when you:</p> <p>I. Click setLarge Button to set the value as LARGE then click getChoice to get the selected choice.</p> <p>II. Click getDefaultChoice Button to get the default choice.</p> <pre>pragma solidity ^0.5.0; contract test { enum FreshJuiceSize { SMALL, MEDIUM, LARGE } FreshJuiceSize choice; FreshJuiceSize constant defaultChoice = FreshJuiceSize.MEDIUM; function setLarge() public { choice = FreshJuiceSize.LARGE; } function getChoice() public view returns (FreshJuiceSize) { return choice; } function getDefaultChoice() public pure returns (uint) { return uint(defaultChoice); } }</pre>	4	CO5
SECTION B (4Qx10M= 40 Marks)			
Q 4	<p>Modify the following code to:</p> <p>I. Add pages, publisher, isbn number and publication year in book structure.</p>	10	CO4

	<p>II. Create at least 5 book entries.</p> <p>III. Write getter function to retrieve all book information in one execution and write the output as well.</p> <pre>pragma solidity ^0.5.0; contract test { struct Book { string title; string author; uint book_id; } Book book; function setBook() public { book = Book('Learn Java', 'TP', 1); } function getBookId() public view returns (uint) { return book.book_id; } }</pre>		
Q 5	What Is the Difference Between Bitcoin and Ethereum Blockchain? Tell Us About the Type of Ethereum Networks That Exist. How to Mine Ethers?	10	CO1, CO2
Q 6	<p>(i) Write output of following code when you click getSum and callSumWithTwoArguments functions in deployment?</p> <p>(ii) Extend this program to add external function computing subtraction and modulus operations.</p> <pre>pragma solidity ^0.5.0; contract Test { function getSum(uint a, uint b) public pure returns(uint){ return a + b; } function getSum(uint a, uint b, uint c) public pure returns(uint){ return a + b + c; } function callSumWithTwoArguments() public pure returns(uint){ return getSum(1,2); } function callSumWithThreeArguments() public pure returns(uint){ return getSum(1,2,3); } }</pre>	10	CO2, CO3
Q 7	<p>List the main Steps of Smart Contract Development from A Business Perspective? Give examples.</p> <p style="text-align: center;">OR</p> <p>What Makes Blockchain Secure: Key Characteristics & Security Architecture. List the layers in Security Architecture in The Blockchain Technology.</p>	10	CO5
<p>SECTION-C (2Qx20M=40 Marks)</p>			

Q 8	<ul style="list-style-type: none"> i. What Comprises blockchain-enabled Supply Chain Management for healthcare? ii. What exactly are the actions in a blockchain supported supply chain operation for healthcare equipment? Draw neat and clean diagram to explain. iii. What do you comprehend by a distribution channel in healthcare section? How does blockchain based supply chain management ensure distributed computing and channel. iv. Can you differentiate between Indirect & Direct Distribution Channels in healthcare supply chain management? v. In blockchain supported healthcare supply chain management, What do You understand by Affreightment? Do you've some experience collaborating with suppliers that are working in firms overseas? 	20	CO1, CO2, CO3
Q 9	<ul style="list-style-type: none"> (i) How blockchain is useful in Fair trade. Consider the following problem statement and suggest solution using blockchain and other advanced technologies. (ii) Discuss the pros and cons of integrating blockchain for stakeholders including suppliers, producers, and workers. (iii) Discuss the cryptography primitives and protocols used in blockchain for Fair trade. Name them and discuss their features briefly. <p>Case Study:</p> <p>Fair Trade guaranteed means the firm complies with the ten principles of Fair Trade and to reassure the firm's compliance they need to conduct peer evaluations, independent audits and self assessment reports. One of the ten principles of World Fair Trade Organization (WFTO) is transparency and accountability which require their members to involve employees, producers and members in their management process. This principle ensures all relevant information is shared among stakeholders to guarantee transparent supply chains. The guarantee process of transparency is established through disclosing information such as production sites, suppliers and workers salaries.</p> <p style="text-align: center;">OR</p> <p>Write solidity-based smart contract fulfilling the requirements of following use case.</p> <p>Millions of dollars are spent every year on processing claims in the insurance industry. Even more money is wasted due to fraudulent claims. Smart contracts strengthen claim processing through frequent error checks, helping administer policies from individuals or organizations. Shorter processing times will result in lower costs for consumers – including premium rates. For example, Lloyd's of London confirms that insurance companies will also be able to fill in the gaps in coverage that come with the underwriting process, as they will be able to manage risks from corporate buyers much better. Write smart contract for insurance industry and provide maximum security using cryptography primitives and protocols.</p>	20	CO4, CO5