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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET-A**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION –MAY/JUNE 2024**

**Semester :** Semester VI - B.Tech CSE - 2021

**Date :** JUNE 06-2024

**Course Code :** CSE3020

**Time :** 01:00 PM-04:00 PM

**Course Name :** Smart Contract and Solidity

**Max Marks :**100

**Program :** B.Tech. Computer Science and Engineering

**Weightage :** 50%

- Note:**
- 1. Answer ALL 5 FULL Questions.**
  - 2. Each Full Question carries 20 Marks**
  - 3. Scientific and non-programmable calculator are permitted.**
  - 4. Do not write any information on the question paper other than Roll Number.**

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|------|---|-------|------------|
| 1.a. | List some key features of Solidity that make it suitable for smart contract development? [Knowledge]                    | (C03) | (04 Marks) |
| 1.b. | Explain Ethereum Wallet, and how does it differ from other Ethereum clients? [Comprehension]                            | (C03) | (06 Marks) |
| 1.c. | Apply the deployment scripts or tools that is used to automate the deployment process of smart contracts? [Application] | (C03) | (10 Marks) |

**Or**

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|------|---|-------|------------|
| 2.a. | Select the data types that are supported in Solidity, and how are they used in smart contracts? [Knowledge]                           | (C04) | (04 Marks) |
| 2.b. | Distinguish the different control structures that are available in Solidity for conditional and iterative operations? [Comprehension] | (C04) | (06 Marks) |
| 2.c. | Describe how EVM enables smart contract execution on the Ethereum blockchain? [Application]   | (C03) | (10 Marks) |
| 3.a. | List the difference between value types and reference types in Solidity? [Knowledge]  | (C05) | (04 Marks) |
| 3.b. | Explain some well-known third-party deployment libraries available for Ethereum smart contract deployment? [Comprehension]            | (C05) | (06 Marks) |
| 3.c. | Determine the process of compiling smart contracts from source code to bytecode? [Application]  | (C04) | (10 Marks) |

**or**

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|------|---|-------|------------|
| 4.a. | Outline multiple inheritance in smart contract transaction? [Knowledge] | (C05) | (04 Marks) |
|------|---|-------|------------|

4.b.	Distinguish an exception in the context of Solidity smart contracts? [Comprehension]	(C04)	(06 Marks)
4.c.	Classify the deployment scripts or tools that is used to automate the deployment process of smart contracts? [Application]	(C04)	(10 Marks)
5.a.	Match the different units of Ether used in Ethereum transactions and smart contracts? [Knowledge]	(C05)	(04 Marks)
5.b.	Distinguish the security precautions that should be taken when installing Solidity and Ethereum Wallet (e.g., verifying download sources, using checksums)? [Comprehension]	(C02)	(06 Marks)
5.c.	Illustrate the operating systems that are supported for Ethereum Wallet installation? [Application]	(C03)	(10 Marks)
<b>OR</b>			
6.a.	List the various ways of how events work in Solidity, and what are their applications in smart contracts [Knowledge]	(C03)	(04 Marks)
6.b.	Describe the role of smart contracts in enabling programmable money and financial instruments? [Comprehension]	(C04)	(06 Marks)
6.c.	Apply the concept of proof of existence in the context of blockchain and smart contracts? [Application]	(C04)	(10 Marks)
7.a.	List the functions defined and called in Solidity smart contracts? [Knowledge]	(C04)	(04 Marks)
7.b.	Explain an external function in Solidity, and how does it differ from other function types like public and internal? [Comprehension]	(C04)	(06 Marks)
7.c.	Determine the common use cases for integrating Oraclize into smart contracts? [Application]	(C05)	(10 Marks)
<b>OR</b>			
8.a.	Describe the various ways that smart contracts automate company processes and allow for self-executing agreements? [Knowledge]	(C05)	(04 Marks)
8.b.	Explain in what ways the third party libraries differ in terms of features, functionalities, and ease of use [Comprehension]	(C05)	(06 Marks)
8.c.	Apply some common installation methods for Web3.js in JavaScript projects? [Application]	(C05)	(10 Marks)
9.a.	List What is the Oraclize API, and what problem does it solve for smart contracts? [Knowledge]	(C04)	(04 Marks)
9.b.	Explain the advantages of using inheritance in smart contract development? [Comprehension]	(C05)	(06 Marks)
9.c.	Employee the role that Ethereum addresses in smart contract interactions? [Application]	(C04)	(10 Marks)
<b>OR</b>			
10.a.	Describe the ways carried out by third-party deployment libraries to enhance the deployment process smart contracts? [Knowledge]	(C05)	(04 Marks)

- 10.b Describe the key benefits of using third-party deployment libraries compared to manual deployment methods? **[Comprehension]** (C05) (06 Marks)
- 10.c Define the ways Web3.js is used to interact with the Ethereum blockchain and smart contracts? **[Application]** (C05) (10 Marks)