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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET A**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JAN 2024**

**Semester :** Semester V - 2021

**Course Code :** CSE2020

**Course Name :** Blockchain Technology and Applications

**Program :** B.Tech.

**Date :** 09-JAN-2024

**Time :** 9:30AM - 12:30 PM

**Max Marks :** 100

**Weightage :** 50%

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**Instructions:**

- (i) Read all questions carefully and answer accordingly.
  - (ii) Question paper consists of 3 parts.
  - (iii) Scientific and non-programmable calculator are permitted.
  - (iv) Do not write any information on the question paper other than Roll Number.
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**PART A**

**ANSWER ALL THE QUESTIONS**

**4 X 5M = 20M**

1. Outline the structure of blockchain (CO1) [Knowledge]
2. what is cryptographic hash function and list the features of it . (CO2) [Knowledge]
3. What are some typical Solidity data types? (CO3) [Knowledge]
4. Discuss the challenges of blockchain in business? (CO4) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**5 X 10M = 50M**

5. Explain why SHA 256 is good fit for blockchain technology? Give reasons. (CO1) [Comprehension]
6. Describe the protocol of the Bitcoin network evolving as a result of the Bitcoin Improvement Proposal (BIP) process? (CO2) [Comprehension]

7. Describe the Ethereum network's gas fee calculation with a relevant example. (CO3) [Comprehension]
8. Explain in details why Should Supply Chains Use Blockchain Technology? (CO4) [Comprehension]
9. Write short notes on
- Types of Ethereum network
  - Mention two famous smart contract frameworks for Solidity

(CO3) [Comprehension]

### **PART C**

#### **ANSWER ALL THE QUESTIONS**

**2 X 15M = 30M**

10. In the event that you are giving advice to a group of people who are thinking about becoming Bitcoin miners, talk about the important considerations that they should have about miners, incentives, and the mining process as a whole. Identify the possible benefits and drawbacks of mining bitcoins, taking into account energy efficiency, hardware purchases, and the effect of mining incentives on the long-term viability and profitability of the mining business
11. Assume you are offering advice to a group of developers that are in charge of building a decentralised application (DApp) for the Ethereum network. Identify the crucial elements of the Ethereum ecosystem that the team must take into account in this scenario in order to successfully create and implement their DApp in-terms of Ethereum Virtual Machine (EVM), smart contracts, and compatibility with other decentralised platforms.

(CO1,CO2) [Application]

(CO4,CO3) [Application]