



BRAINWARE UNIVERSITY

Term End Examination 2023-2024 Programme – B.Sc.(ANCS)-Hons-2020/B.Sc.(ANCS)-Hons-2021 Course Name – Block Chain and Crypto Currency Course Code - BNCSD601A (Semester VI)

Full Marks: 60 Time: 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

- Choose the correct alternative from the following:
- (i) Identify the first step required to set up a Blockchain application.
 a) Create the Genesis Block
 b) Build the Blockchain Class
 c) Test the Blockchain
 d) Install necessary software and tools
 (ii) Identify the function of the transaction pool in a blockchain network.
 a) To store validated transactions
 b) To generate new blocks
 c) To validate transactions
 d) To secure the network
 (iii) Identify the option that correctly indicates the working principle of blockchain technology?
 - a) A decentralized ledger system
- b) A centralized database system

c) A peer-to-peer network

- d) A cloud storage system
- (iv) Identify the purpose of mining in a blockchain network.
 - a) To create new transactions

b) To validate transactions

c) To create new blocks

- d) To secure the network
- (v) Identify the purpose of organizing a blockchain project?
 - a) To increase network security
- b) To decrease transaction fees

c) To improve network speed

- d) To manage the development process
- (vi) Identify the term used to describe the first block in a blockchain network?
 - a) Hash block

b) Genesis block

c) Fork block

- d) Miner block
- (vii) Identify the term used to describe the process of double spending a new blockchain network?
 - a) Mining

b) Forking

c) Validating

- d) Transacting
- (viii) Indicate the function of the SHA-256 hash algorithm in a blockchain network?
 - a) To secure transactions

b) To create new blocks

c) To validate transactions

d) To generate unique block hashes

(ix)	Select the option that justifies the use of Noncalgorithm in a Blockchain network.		
	a) To increase network security c) To decrease block size	b) To decrease transaction feesd) To help miners find a valid block ha	sh
(x)	Which of the following option establishes the consensus algorithm?		
	a) To generate unique block hashes	b) To validate transactions	
(vi)	 c) To create new blocks Which of the following options would you choo 	d) To prevent double spending	
	project roadmap?		
	a) To improve network security c) To create new blocks	b) To manage project complexityd) To validate transactions	
(xii)	Which of the following would you identify as a transaction?	•	
) It is centrally controlled	b) It is reversible	
	t) It is transparent and immutable	d) It is validated by a single entity	
t	Which of the following would you identify as a plockchain network?	characteristic of a decentralized	
) High transaction fees	b) Distributed decision-making	
) Slow transaction speed Which of these interprets to balance calculatior	d) Centralized control	
) To validate transactions	b) To calculate the balance of a wallet	
	To mine new blocks	d) To create new transactions	
(xv) V b	Vhich of these options establishes the purpose lockchain?		
	To prevent double-spending To validate transactions	b) To ensure the integrity of the data d) To secure the network	
	Group	n-B	
	(Short Answer Ty		3 x 5=15
2. Desc	ribe the steps involved in building and testing	the Blockchain.	(3)
 Examine the impact of Bitcoin on the traditional financial system and its potential to disrupt (3) established financial institutions. 			t (3)
4. Expla	in the role of Cryptography in Blockchain secu	rity.	(3)
5. Explain how would you construct a new block and add it to the Blockchain.6. Design a Blockchain API that allows for retrieving and posting transactions.			(3)
	OR		(3)
Desig recov	n a business continuity plan for a blockchain p ery and backup.	roject, including procedures for disaster	(3)
	Group	-C	
	(Long Answer Type	o Ourantia and	x 6=30
7. Evalu	7. Evaluate the importance of business continuity planning in a blockchain project, and		
8. What	propose strategies to ensure business continuity in the event of a disruption. 8. What are the advantages of Blockchain technology?		
9. Define Blockchain and explain its significance.			(5)
10. Com	pare and contrast the concepts of cryptograph	y and encryption in the context of	(5) (5)
Block	chain technology.		(-)
TT. Expla	in the process of handling messages from pee	rs.	(5)

12. Develop a strategy to mitigate vulnerabilities in the Blockchain and identify potential threats. (5)

OR

Design a novel consensus mechanism for a Blockchain network that offers improved (5) scalability, security, and energy efficiency compared to traditional proof-of-work and proof-of-stake mechanisms.
