

BLOCKCHAIN TECHNOLOGY

Home Assignment

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Admission No: U19CS075

Q1. Block 0 of Bitcoin blockchain is known as genesis block.


<https://www.blockchain.com/btc/block/0>

How many transactions are there in the Genesis block? What is the coin base reward and what address is the beneficiary?

Ans: The genesis block has only 1 transaction and the coinbase reward for this block was 50 Bitcoins and the address which received it was 1A1zP1eP5QGefi2DMPTfTL5SLmv7DivfNa.

Q2. For the bitcoin blockchain block number 57043, report the number of transactions included in the block and its significant details.

Ans: There were only 2 transactions in block number 57043. One of the transactions was just the coinbase reward of 50.99 BTC and the other transaction was the first recorded purchase of a physical good using bitcoin. Laszlo Hanyecz paid 10000 BTC to purchase 2 Papa John's Pizza. Hence 22 May is celebrated as the Pizza Day in the Crypto Community.

Hash	00000000152340ca42227603908689183edc47355204e7aca59383b0aaac1fd8 
Confirmations	695,384
Timestamp	2010-05-22 23:46
Height	57043
Miner	Unknown
Number of Transactions	2
Difficulty	11.85
Merkle root	5c1d2211f598cd6498f42b269fe3ce4a6fdb40eaa638f86a0579c4e63a721b5a
Version	0x1
Bits	471,178,276
Weight	95,340 WU
Size	23,835 bytes
Nonce	188,133,155
Transaction Volume	10000.00000000 BTC
Block Reward	50.00000000 BTC
Fee Reward	0.99000000 BTC

Q3. Multiply Last 3 digits of your Admission ID with 9999, use modulo 751000 and resultant number is a block of your question of bitcoin blockchain.

For this block, report the following parameters:

Timestamp:

No. of transaction included:

Total bitcoins sent in the block:

Difficulty:

Coinbase reward:

Fee reward:


Nonce:

Merkle Root:

Ans: My Admission no is 75

Hence $75 \times 9999 = 7,49,925$

749925 modulo 751000 gives 749925 itself. So my designated block for the bitcoin network will be block number 749925.

Hash	00000000000000000000ff4e722cb3e49a0c5bc30328d1a568115399a1b4bc6 
Confirmations	2,502
Timestamp	2022-08-18 12:13
Height	749925
Miner	Unknown
Number of Transactions	2,918
Difficulty	28,174,668,481,289.41
Merkle root	ddac067162d4ba05fa020e4ddda5d72158005a2ccb0498e6873728fbbfc407d5
Version	0x3fff0000
Bits	386,530,686
Weight	3,992,999 WU
Size	1,547,264 bytes
Nonce	1,691,818,108
Transaction Volume	14593.16815439 BTC
Block Reward	6.25000000 BTC
Fee Reward	0.09925992 BTC

Q4. Multiply Last 3 digits of your Admission ID with 99999, use modulo 15000000 and resultant number is a block number of your question of ethereum blockchain.

(<https://www.blockchain.com/eth/block/blocknumber>)

For this block, report the following parameters:

Timestamp:

No. of transaction included:

Total ethers sent in the block:

Difficulty:

Block Reward:

Fee Reward:



Gas used:

Nonce:

Ans: My Admission no is 75

Hence $75 \times 99999 = 74,99,925$

$74,99,925 < 15000000$ hence modulo operator not required

Hash	0x9c099433f658383cc2509ffe45db0f14dcddaa2405c9b36d23e6c4a33d1c10cc 
Confirmations	7,966,598
Timestamp	2019-04-04 11:21
Height	7499925
Miner	0x5a0b54d5dc17e0aad383d2db43b0a0d3e029c4c 
Number of Transactions	168
Number of Internal Transactions	11
Difficulty	1,790,714,171,084,247.00
Total Difficulty	9,703,156,376,175,831,000,000
Size	31,622 bytes
Nonce	0xb31d16400835acbf
Sha3Uncles	0x1dcc4de8dec75d7aab85b567b6ccd41ad312451b948a7413f0a142fd40d49347
Number of Uncles	0
Gas Limit	8,000,029
Gas Used	7,989,403 (99.87%)
Block Reward	2.118877233477813825 ETH
Static Reward	2.00000000 ETH
Fee Reward	0.118877233477813825 ETH
Total Uncle Reward	0.00000000 ETH

Transaction Volume: 5,330.906463577217 ETH

A total of 5,330.906463577217 ETH (\$8,272,820.50) were sent in the block with the average transaction being 31.73158609 ETH (\$49,242.98).