BCT Question

Q1) Define Smart contract:

=> A smart contract is a self executing program that automates actions required in an agreement or contract. This removes needs of intermediatores, provides transparency & traceability & enables transactions b/w anonymous parties.

Q2) What are the characteristics & the benifits of smart contract.

=> Smart contracts have several benefits & characteristics which make it a very powerfull tool.

Benefits:

1. efficiency: smart contracts automate processes which removes needs of intermediatores.
2. Cost Saving: Since it removes Intermediators, it leads to reduces costs as brokerage or similar costs are cut.
3. Speed: Smart contracts can speed up processes which traditionally required manual effort of Intermediators
4. Trust & Transparency: Smart contracts deployed on blockchain provide transactions are recorded. & can be audited, this created trust that they are legitimate as blockchain data is immutable.

characteristics:

1. Automation: Smart contracts automate task by reducing manual. human intervention.
2. Execution In Blockchain:

Q5. Explain working of Smart Contracts with example.

→ To understand working of smart contract let's consider a simple eg. below:

let's say Alice wants to buy a digital artwork from Bob using smart contract.

① Creation of SC:

Alice & Bob agree on terms of transaction, such as price of artwork & conditions for transaction & startup. The smart contract includes

- Alice's wallet (&)
- Bob's wallet (&)
- The price of artwork
- conditions for fund release.

② Funding of Smart Contract:

Alice sends the agreed upon payment to the smart contract (&). The funds are held as within contract until conditions are met

③ Execution of contract:

The Smart contract is deployed on Ethereum BC & becomes point of decentralized computing.

④ Confirmation & triggers.

Alice receives a digital work from Bob & confirms its receipt by interacting with smart contract through own wallet via Dapp (Decentralised App)

Q4. What are different types of Smart Contracts?

(1) Financial Smart Contracts:
these are most well known & widely used smart contracts. They automate financial transactions including payments, loans & insurance without need of intermediatores.

(2) Escrow Smart Contracts:
These contracts hold funds or asset in escrow until predefined condition are met.
eg. they can be used real estate transaction or online market places to ensure trust b/w parties.

(3) Multi-signature wallets contracts:
multi sig. contract require multiple parties to sign off as a transaction before it can be executed. They enhance security & are often used in crypto currency wallets & corporate governance.

(4) Token Contracts:
token contracts are used to create & manage token on BC platforms. These token can represent assets, access rights and other digital assets.

Q5. Write short note on DApps.
Dapps also known as decentralised application are crucial component of BC tech.

DApps are S/W app. that can run on decentralized n/w, typically BC platforms further than typical servers. The aim is to provide open, trustless & transparent services.

BC based :

DApps are hosted on BC platforms BC's transparency & immutability.

Smart Contract :

smart contract are heavily used in many dapps

Notable DApps :

- Uniswap (Defi)
- Brave (privacy based browser)