General Studies-3; Topic: Science and Technology- developments and their applications and effects in everyday life

Cryptocurrencies and Blockchain Technology

1) **Introduction**
   - A cryptocurrency (CC) is a digital asset generated by miners across the world by solving complex mathematical problems. Eg: Bitcoin, Ethereum, Litecoin, Dash and Ripple.
   - Bitcoin was one of biggest buzzwords of 2017, in India and in the world.
   - The price of bitcoin not only shot up over 1000% in one year but also fluctuated wildly.

2) **Blockchains**
   - Blockchains are basically digital ledgers of financial transactions
   - Each bitcoin transaction on the network can be traced on this Blockchain
   - They are immutable and instantly updated across the world on thousands of computers — the blockchain.
   - They aid in ease of doing business.
   - They have the potential to streamline payment mechanisms and make them transparent.
   - It eliminates the need for trust
   - On Ethereum, a blockchain platform that calls itself "the android of the cryptocurrency world," we can set up an application that enables people to rent out idle storage space on their laptop.
   - We can monetise a resource through blockchain technology.
   - Programmable money is another example of a decentralised blockchain-based application.
   - Digital currencies are software programs, one can program a particular CC such that, it cannot be used to buy the product of a company that violates any law.
   - Artificial Intelligence and Internet of Things (IoT) can gain immensely from blockchain applications
   - In an IoT world, thousands of devices would need to rapidly and seamlessly transact with each other in real time
   - It has enormous scope for increased efficiency and cost-saving
   - Blockchain technology could be used in property transactions, asset registries, bank records, etc.
   - In Amaravati, the Capital of Andhra Pradesh, about one lakh land records have blockchain protection.

3) **Bitcoins in India**
   - Investment in bitcoin and other Cryptocurrencies increased tremendously in India in 2017.
   - India accounts for more than 11% of global cryptocurrency trade
   - The Finance Ministry recently issued a statement warning against investing in bitcoin and other Cryptocurrencies.
   - Likening CCs to 'Ponzi schemes', it linked them to terror-funding, smuggling, drug-trafficking, and money-laundering.
   - The government's caution comes on top of three warnings issued by the Reserve Bank of India since 2013.

4) **International Practice**
   - South Korea and the U.S. are intensifying regulatory scrutiny of the market.
   - South Korea recently proposed legislation to either heavily regulate exchanges or ban them.

- In U.S., a court ordered a popular cryptocurrency platform to hand over information related to 14,000 accounts to the Internal Revenue Service
- Global tech firms such as IBM are developing their own cryptocurrency platforms for transactions in a secure and transparent manner.
- World's top central bankers are preparing to issue their own Central Bank Digital Currency (CBDCs).
- Japan has recognised Bitcoin exchanges as legal.

5) Concerns / Challenges

- Most of the new users have little knowledge about the technology, or how to verify the genuineness of a particular cryptocurrency.
- A number of investors have put their money into less well-established and often spurious Cryptocurrencies.
- Some private cryptocurrency operators in India have said that almost 90% of the currencies are scams.
- Cryptocurrencies may or may not emerge as a useful tool because they are anonymous and non-fiat currencies.
- It poses challenge to states and central banks
- Reports of hackings at several exchanges have exposed the risks attached to such investments.
- Intense volatility of cryptocurrency makes it an unacceptably risky investment for many.

6) W ay Forward

- There is a need for more investor awareness on Cryptocurrencies
- Investors must spend time educating themselves about bitcoin and the technology behind it
- India must be careful to differentiate between Cryptocurrencies and the blockchain technology
- SEBI will have to proactively consider allowing trading of Bitcoins under existing or new laws.
- Explore the use of blockchain technology in areas such as education, health and agriculture.