



10 BRIEF INFO ABOUT THE COURSE (PCB9-RAFTAAR)

- UPSC Syllabus Strategy Cut-off: <https://mrunal.org/syllabus>
- Economy PCB8 Course- how much I'll teach, what books do you've to read on your own etc. <https://mrunal.org/pcb9>
- Basically this PCB9-Raftaar Course deals only with Prelims-Specific Economy.
- This is NOT Mains Economy. Not Microeconomics. (separate courses for it, u don't have to pay extra, it's part of your Netflix/Unacademy subscription). More explained in [Lecture#1](#)
- Only for serious competitive exam mindset candidates shd attend this. Timepass Babushona/ Faaltu-ki-PHD krnewalle shd avoid my courses.

10.2.1 What has UPSC asked from Economy in recent years?

Mrunal's Economy: 6 Pillars™	Prelims P1 (GS 100 MCQs)							Mains GSM-1-2-3 (750 Marks)							Remarks
	2016	2017	2018	2019	2020	2021	2022	2016	2017	2018	2019	2020	2021	2022	
1_Money Banking, Finance & Insurance	6	6	7	7	9	6	8	25	0	0	0	15	15	0	Most useful in Prelims but less in Mains
2_Budget, FC, GST, FRBM	3	3	4	1	1	1	3	12.5	30	25	25	15	20	0	Second lowest utility after 5_Infra
3_Intl_Trade, BoP	11	4	4	7	7	2	4	25	0	30	0	15	15	0	Third lowest utility after 2_Budget.
4_Sectors, GDP, Inflation, Microeconomics	4	8	3	8	5	5	4	25	60	50	65	55	60	85	Useful for both prelims and Mains.
5_Infrastructure	2	4	1	3	1	0	2	37.5	10	15	15	15	30	20	Lowest utility among 6 pillars.
6_HRD	3	4	6	2	0	0	0	50	40	60	75	85	45	20	Useful for both prelims and Mains.
Total	29Qs	29Qs	25Qs	28Qs	23Qs	14Qs	21Qs	175m	140m	180m	180m	200m	185m	125m	

Economy Pillar #1-A1) Money: Barter to Bitcoin

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10.3 🍎 💼 BARTER SYSTEM & ITS DISADVANTAGES: (वस्तु विनिमय प्रणाली)



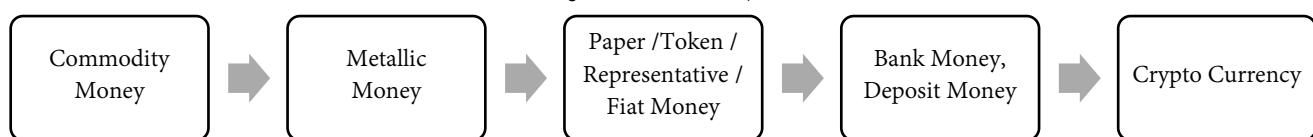
Barter system was introduced by Mesopotamian tribes. It has following challenges: (चुनौतिया)

- 😢 Double co-incidence of Wants (आवश्यकताओं का दोहरा संयोग नहीं होगा तो व्यापार असंभव).
- 😢 Search Cost & Transaction cost is high. (सही दाम पर चीज ढूँढ़ने व लेनदेन की लागत बढ़ जाती हैं)
- 😢 Storage of perishable commodities is difficult, results in loss of value. (नाशवान वस्तुओं का मूल्यहास)
- 😢 Doesn't encourage specialization and division of labour (श्रम विभाजन को प्रोत्साहित नहीं करता).

10.4 💳 MONEY: FUNCTIONS OF (पैसे के कार्य)

Primary: 2 functions [प्राथमिक]	Secondary (S-T-D) 3 functions [सहायक कार्य]	Contingent 3 functions [प्रासंगिक कार्य]
<p>1. 💳 Measure of Value: gm=wt, ml=vol, ₹=value (मूल्य का मापक).</p> <p>2. 💳 Medium of Exchange: Buy & Sell goods and services using money as the 'medium'. (विनिमय का माध्यम).</p>	<p>1. 💳 💳 Store of Value (मूल्य का संचय)</p> <p>2. 💳 Transfer of Value (मूल्य का स्थानांतरण). Soldier in Kashmir to parents in Kanyakumari</p> <p>3. 💳 Deferred Payments (स्थगित भुगतानों का मानक). E.g. Buy iphone12 @₹3177 only per month x 36 months' Equated Monthly Installments (EMIs) = ₹1,14,372. Actual price is ₹79,900, but ₹34,472 extra Interest. (ब्याज पर किश्तों में खरीदारी संभव)</p>	<p>1. Basis of credit system, Financial markets (share, bond etc.: More in 💳 Pillar#1C-sharemarket) वित्तीय बाजार का आधार है पैसा</p> <p>2. Employing factor of production i.e. Land, Labour, Capital (More in 💳 Pillar#4C) उत्पादन के कारक जुटाने में मदद करता है है पैसा</p> <p>3. Creation & Redistribution of National Income via taxation. (💳 Pillar#2) अमीरों पे ज्यादा कर वसूल के राष्ट्रीय आय के पुनःवितरण करने में मदद</p>

10.5 💳 MONEY: EVOLUTION & TYPES (मुद्रा की उत्कर्त्ति व् प्रकार)





10.5.1 Commodity Money / वस्तु मुद्रा (Intrinsic value: अंतर्भूत मूल्य? Yes)



- ⇒ Iron Nails, Bear Pelts, Cocoa Beans, Whale Teeth, Gold Nuggets
- ⇒ **Problems?** Perishable, not uniform, not pure, foreigners may not accept.
नाशवान, एकसमान नहीं, शुद्ध नहीं, अस्वीकार भी कर सकते हैं.

10.5.2 Metallic Money / धातु मुद्रा (Intrinsic value? Yes)

- ⇒ Traders & Kings stamped their marks on gold nuggets for uniformity & trust. (सोने पर अपना चिन्ह/छाप लगा देते – ताकि लोगों को उसकी शुद्धता पे यक़ीन हो)
- ⇒ Indo Greek kings & Kushana kings issued gold coins, but Gupta Gold coins most spectacular- king is playing Veena, shooting animals, standing with wife. (इन राजाओंने सोने के सिक्के निकाले थे)
- ⇒ Delhi Sultanate Kings: **Silver Tanka**. Sher Shah Suri **Rupiyah** silver coin. Akbar: **Mehr**.

Further SELF STUDY: History of Indian coins from History Lecture/Notes.

10.5.3 Metallic Money → Full Bodied vs Token Coins

Table 1: Types of Coins



Gupta Coin: ~8 gm GOLD



50 paisa modern coin: ~4 gm steel

Full Bodied Coins	Token Coins (प्रतीककात्मक)
Intrinsic Value (अंतर्भूत मूल्य) is Equal to or MORE than its Face Value (अंकित मूल्य)	LESS. (धातु एकदम सस्ती वाली इस्तेमाल करते हैं या बहुत ही कम वजन की धातु इस्तेमाल करते हैं)
Challenge? ⇒ Debasement: decreasing the amount of metal in coins. Usually happens when king's rule gets weak/poor e.g. Aurangzeb, Roman Kings. सिक्के में धातु की मात्रा को कम किया जाए तब लोगों का उस राजा के शासन से विश्वास कम होने लगता है	<ul style="list-style-type: none"> ⇒ 1330s: Tughlaq's Token coin experimentation = #EPICFAIL (Why? Prepare in History subject). ⇒ Modern Indian coins are token coins. Cupronickel metal used to discourage melting. ⇒ Coinage Act 2011 prohibits melting of coins. (सिक्का पिघलाना एक अपराध है)

10.5.4 Intrinsic value

PRECIOUS METAL COINS (धातु के सिक्के)	PAPER CURRENCY (कागजी मुद्रा/नोट)
Metal has INTRINSIC VALUE i.e. Metallic money = Use it as "money", or you can melt the metal → use that metal for making jewellery / weapons because metal itself has its value / usages. (उस मुद्रा की धातु पिघला कर कुछ और चीजें भी बना सकते हैं. क्योंकि धातु का अपना : अंतर्भूत मूल्य / उपयोगिता है)	You can't use currency-note's paper as a notebook or diary. So currency notes have no intrinsic value. (उसके कागज का उपयोगिता कुछ नहीं है, क्योंकि उसपे छपाई कर दी है.)



10.5.5 ₹ Paper Money / कागजी मुद्रा (Intrinsic Value? No)

Fiat money (वैधानिक मुद्रा): It MUST fulfil two conditions **SIMULTANEOUSLY**: दो शर्तें का एकसाथ पालन :

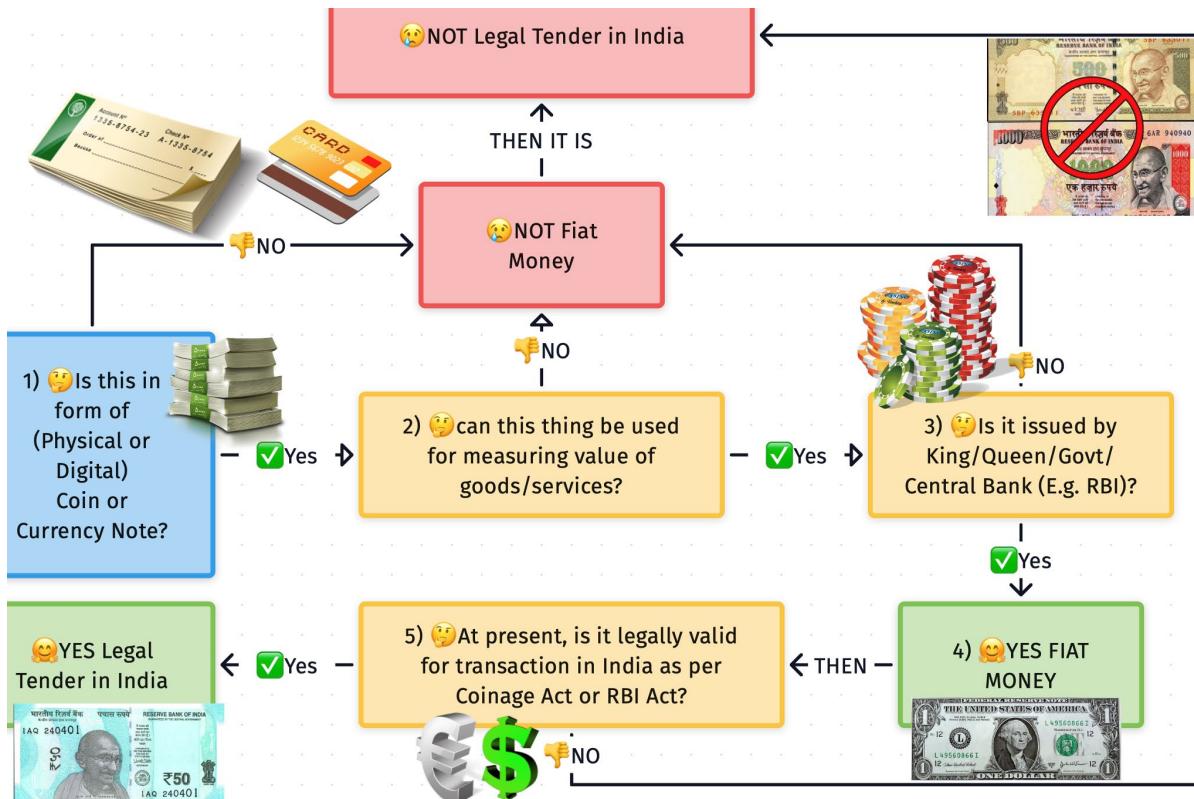
1. It MUST BE in the form of Physical Currency Coin / Physical Currency Notes / VirtualCoin/DigitalCoin/ CryptoCoin which can measure value **AND simultaneously** और साथ ही साथ
2. It MUST BE issued by the order of a King / Queen / Government / Central Bank.

	<ul style="list-style-type: none"> ⇒ Govt issues all coins upto ₹ 1,000, using powers of Coinage Act 2011. ⇒ Presently, govt issues Rs.50 paisa to Rs.20 coins. ⇒ Rs.20 coin: 12-sided Polygon shape (Dodecagon आकार: बारह बाजुओं वाला चतुष्कोण है) ⇒ ₹ 1 Note signed by Finance Secretary (वित्त सचिव) ⇒ ₹ 1 note doesn't contain "I promise to pay bearer..."
	<ul style="list-style-type: none"> ⇒ RBI issues: Currency notes other than ₹ 1 Note under RBI Act 1934. ⇒ Currency notes have Governor's sign: "I promise to pay bearer..."

💡 FAQ: why is it like this!!!?? WHY CAN'T RBI ISSUE BOTH coins & currency notes!!?

Ans. Send your suggestion to PM, to merge above two laws. Until it's implemented, remember table for passing exam. प्रधानमंत्री को कागज लिखो- दोनों कानूनों का एकीकरण करने के लिए. जब तक वह नहीं होता तो इस handout को रटो।

10.5.6 ₹ Legal Tender (वैधानिक निविदा)



To become a 'legal tender', a given coin/currency MUST fulfil two conditions **SIMULTANEOUSLY**: एक साथ दो शर्तें को पूरा करना होगा.

1. It must be a FIAT MONEY (जो हमने ऊपर के सेक्षण में पढ़ा). **AND SIMULTANEOUSLY** और साथ ही साथ
2. It must be legally valid for all debts & transactions throughout the country. Other party can't refuse to accept. (लेनदार उसको अस्वीकार नहीं कर सकता)



Table 2: fiat money and legal tender in India

ITEM	A) Is it in form of a physical coin OR physical Note OR Digital Coin that can measure 'value'?	B) Is it issued by Central Bank / Govt / King / Queen	C) Result: Is it Fiat money? (YES If Both Cell A+B give <input checked="" type="checkbox"/> + <input checked="" type="checkbox"/>)	D) At present, is it legally valid for transaction in India as per Coinage Act or RBI Act?	E) Is it LEGAL Tender in India (Yes, IF C+D give <input checked="" type="checkbox"/> + <input checked="" type="checkbox"/>)
₹ Indian Rupee: Coins & Notes, CBDC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Demonetized (विमुद्रीकृत) ₹500, ₹1000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dollar\$, Yuan, Yen, Euro etc	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G-Sec, T-Bill (what is this-Ans. explained in video)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Shares, Bonds, DD, Cheque, ATM, Cards, Kirana coin, Casino coin, Filmstar-Notes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Marshall Island: SOV Venezuela: Petro coin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bitcoins	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ##	<input checked="" type="checkbox"/>

⇒ ##Bitcoin is not a Fiat money, yet it is legal tender in El-Salvador nation. But it is an exception.

(बिट-कोइन का अल-साल्वाडोर देश में वेधनिक निविदा होना केवल एक अपवाद है, वो पूरी दृनिया के लिए नियम/व्याख्या नहीं है।)

⇒ Commemorative Coins = Fiat money yes but not legal tender unless notified by

RBI/Government to be used as legal tenders. (स्मृतिचिन्ह रूप सिक्के- सामान्य भुगतान में इस्तेमाल नहि हो सकते, सिवाय के सरकार/आरबीआई उसकी अनुमति दे।)

🤔 FAQ: we can use cheque / credit card to pay fees. So, why are they not fiat money/legal tender?

**Money is a unit of measurement for value.
Just like cm/km = unit of measurement of length**



1 Tea Cup = ₹15



2 Tea Cups = ₹30



3 Tea Cups = ₹45



= Rupee is MONEY

1 Tea Cup=NOT 1 Cheque leaf



2 Tea Cups=NOT 2 Cheque leaves



3 Tea Cups=NOT 3 Cheque leaves



👉💡 Cheque itself is not money, but 'tool/instrument' to use money

🤔 FAQ: I did not understand this thing and/or I want to engage in intellectual debate why "X" thing is legal tender? Ans. Please watch lecture's recorded video again, more peacefully.



10.5.7 ₹ ₹ Legal Tender (वैधानिक निविदा)- Limited and Unlimited

Table 3: Fiat Money: Two types of legal tenders

A) ₹ Limited legal tenders (सीमित वैधानिक निविदा)	B) ∞ Unlimited legal tenders: (असीमित वैधानिक निविदा)
	
<p>Recipient can refuse accepting payment beyond a limit (एक हद से ज्यादा छूटटे पेसे स्वीकारने से सामने वाला मना कर सकता है)</p> <p>⇒ Coinage Act 2011 ⇒ Paper Note: Rs. 1 (एक रुपए की कागजी नोट) ⇒ Coins Rs. 1 / above → upto Rs.1000 ⇒ Coins 50 paisa x 20 coins → upto Rs.10 ⇒ Below 50 paisa coins are withdrawn (in 2011) So, 10 paisa, 25 paisa are ₹ not legal tenders. (10 पैसा और 25 पैसा वैधानिक निविदा नहीं है। 50 पैसा वैधानिक निविदा है)</p>	<p>No such restriction. **</p> <p>⇒ RBI Act 1934 - Section 26: Every bank note is legal tender in India. ⇒ They can be used for settling any amount of debt in India**, lender can't refuse to accept it.</p>

Although in real life, Finance Act 2017: "Cash transactions for less than Rs.2 lakh only. Beyond that use Cheque, DD, NEFT etc. else penalty." This rule is to discourage tax-evasion / black money. For more Ref: ₹ Pillar#2. But for MCQs, simply accept that **bank notes = unlimited legal tenders. हालांकि वास्तविक जीवन में काले धन / करचोरी को रोकने के लिए नगदी लेनदेन पर कुछ सीमा के बाद रोक है, किन्तु MCQ के लिए स्वीकार लो की

► ₹ FAQ# my shopkeeper doesn't accept 50 paisa. Then how it is legal tender? मेरा दुकानदार नहीं लेता 50 पैसा का सिक्का। तो आप कैसे कह सकते हैं वो वैधानिक निविदा है?

Ans. as per RBI notification, 50 paisa is legal tender. So, accept it for MCQ & move to next topic. Further, feel free to file police case against shopkeeper, if you have plenty of free time/outrage for it.

₹ ? MCQ: Which correctly describes the meaning of legal tender money? (Pre-2018)

- (a) The money which is tendered in courts of law to defray the fee of legal cases
- (b) The money which a creditor is under compulsion to accept in settlement of his claims
- (c) The bank money in the form of cheques, drafts, bills of exchange, etc.
- (d) The metallic money in circulation in a country

₹ ? MCQ: Consider the following statements (Asked in UPSC-CDS-2011-II)

1. In India the minimum denomination coin acceptable for transaction is 50 paise.
2. Coins below 50 paise is not a legal tender for payment.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2



10.5.8 🚶 ₹ RBI's App to help the blind identify currency notes

80 lakh people in India are blind (नेवहीन). To help them identify currency notes:

- ⇒ Old series of Gandhi notes have square (50), triangle (100) shaped markings.
- ⇒ New series of Gandhi notes have bleed lines, raised printing of Gandhi etc.
- ⇒ But, so many varieties of notes, difficult for VH persons to remember size & shapes so,

2020-Jan: RBI launched 'Mobile Aided Note Identifier (=MANI)' App.

- ⇒ Mobile camera scan & identifies the note (Even if it's half folded), gives audio notification in Hindi/English, also works offline
- ⇒ But can't validate whether note is genuine or fake (Counterfeit जाली नोट नहीं पकड़ सकता यह ऐप),
- ⇒ If a user is both blind and deaf, the app will tell him by giving vibrations.(मोबाइल कंपन)

10.5.9 ₹ Currency related General Knowledge:



Which note has what colour, which note has Red Fort / Sun Temple photo etc? General Knowledge

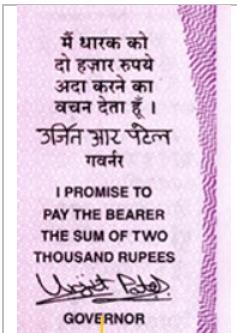
👉 Less important for UPSC-exams, more IMP for Non-UPSC Exams. So I'm removing it from Raftaar-Handout. You can learn such general knowledge from <https://paisabolthai.rbi.org.in/>

New rupee symbol	₹: selected through a competition by Dept of Economic Affairs in 2010. Designed by D.Udaya Kumar, a Professor @IIT Guwahati.
Nation Symbol	- Lion Emblem: Sarnath Pillar, Uttar Pradesh से लिया गया है - "Satyamev Jayate": slogan from Mundaka Upanishad से लिया गया है
Languages	While Constitution's 8 th Schedule has 22 languages, but currency note has only 17. (15 on Reverse + Hindi & English on frontside (obverse) = 17) 👉 FAQ: Why it is like this? Ans. Either some Indian languages have similar fonts and/or send suggestion to RBI.
Museum	Budget-2020: a museum on numismatics and trade (सिक्काशास्त्र और व्यापार का संग्रहालय) will be built at the historic 'Old Mint Building' in Kolkata .

10.5.10 ₹ “I promise to pay the bearer...”: Meaning of this promise?

Currency note is zero interest, anonymous bearer bond / Promissory Note.

	Colonial era: Promised to convert into full bodied gold or silver bars / coins worth the equal value in weight. E.g. 1 US Dollar = ~14 grams of gold. 1 British pound = ~73 grams of gold. (👉 in my handout ‘~’ means ‘approximate’)
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- ⇒ **Modern era:** Conversion into other Bank notes and “token coins” of equal face value. ₹ 2000 = 500 x 4 Nos.= 100 x 20 Nos etc.
- ⇒ Not inflation adjusted value. Not linked with weight of gold or silver.

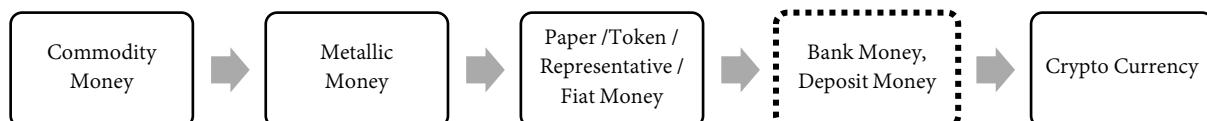
10.5.11 💵 Demonetization of Fiat Money (विमुद्रीकरण: Previously 1946, 1978)

Definition? Demonetization is the wholesale withdrawal of currency notes from circulation. (मुद्राचलन में से कुछ खास किस की नोटों को सरकार द्वारा हटा देने की क्रिया को विमुद्रीकरण या नोटबंदी कहते हैं)

- ⇒ 8/Nov/2016: Finance Ministry → Dept of Economic Affairs → notification to ban the “Specified Bank Notes” (SBN) of Mahatma Gandhi series ₹ 500 and 1000.
- ⇒ Specified Bank Notes (Cessation of Liabilities) Act 2017= RBI not required to honor “I promise to pay...”.
- ⇒ Banned notes (500,1000) can't be kept except for research or numismatics or museum- and that too in limited amount! *More in 📊 pillar#2: taxation → black money.*

10.6 💳 💵 💼 REDENOMINATION: IRAN'S TOMAN CURRENCY

- ⇒ Removed for #RAFTAAR. Those who want to waste time/satisfy curiosity can learn it from last course (PCB6) at <https://unacademy.com/course/mrunals-economy-course-for-upsc-prelims-mains-2022-52/I1OWWV6Y> (मेरे को अब ये परीक्षा के नजरिये से बहुत काम का नहीं लगता, इसलिए टॉपिक हटा दिया है)



10.7 💳 💵 BANK MONEY / DEPOSIT MONEY



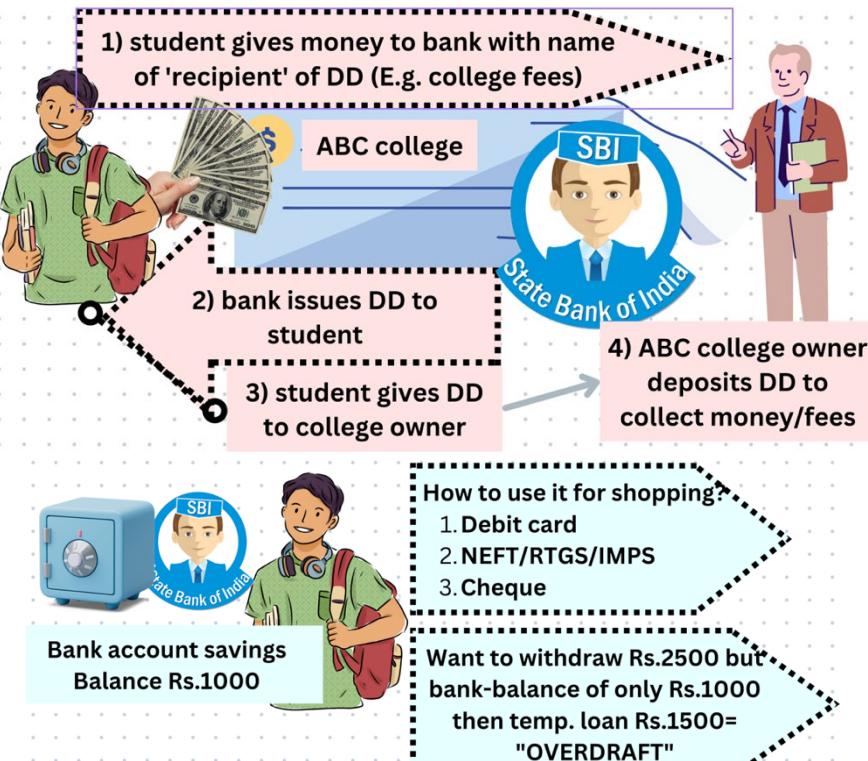
10.7.1 💳 💵 Paper orders: Cheque, Demand Draft (DD)

Law	Viceroy Ripon's Negotiable Instruments Act, 1881: Primary Objective? Cheque dishonor & forgery (परक्राम्य लिखत अधिनियम: बैंक खाते में अप्राप्त रकम के चलते चेक अस्वीकार होना/जालसाजी के स्थिलान्त्र करना).
Cheque	<ul style="list-style-type: none"> - THREE parties in a cheque: 1) Drawer (Sender), 2) Drawee (Bank), 3) Payee (Recipient) - Types of cheques: 1) Stale: Not withdrawn in 3 months (3 महीनों में नहीं डाला तो बासी/अस्वीकार्य होगा), 2) Post-dated: After a specific date, 3) Ante-Dated: notimp for IAS exam. - Open / bearer cheque: No ‘crossing’. Anyone can encash.



IFSC	IFSC code: Indian Financial System Code- 11 alphanumeric numbers to identify the bank branch, just like PINCODE identifies an area. (कौन सी बैंक ब्रांच है उसे चिन्हित करता है)
MICR	MICR code: Magnetic Ink Character Recognition. 9 digits code written in Iron Oxide ink for automated clearance. (चुम्बकीय स्थाही से चेक के नम्बर को जाँचने के लिए।)

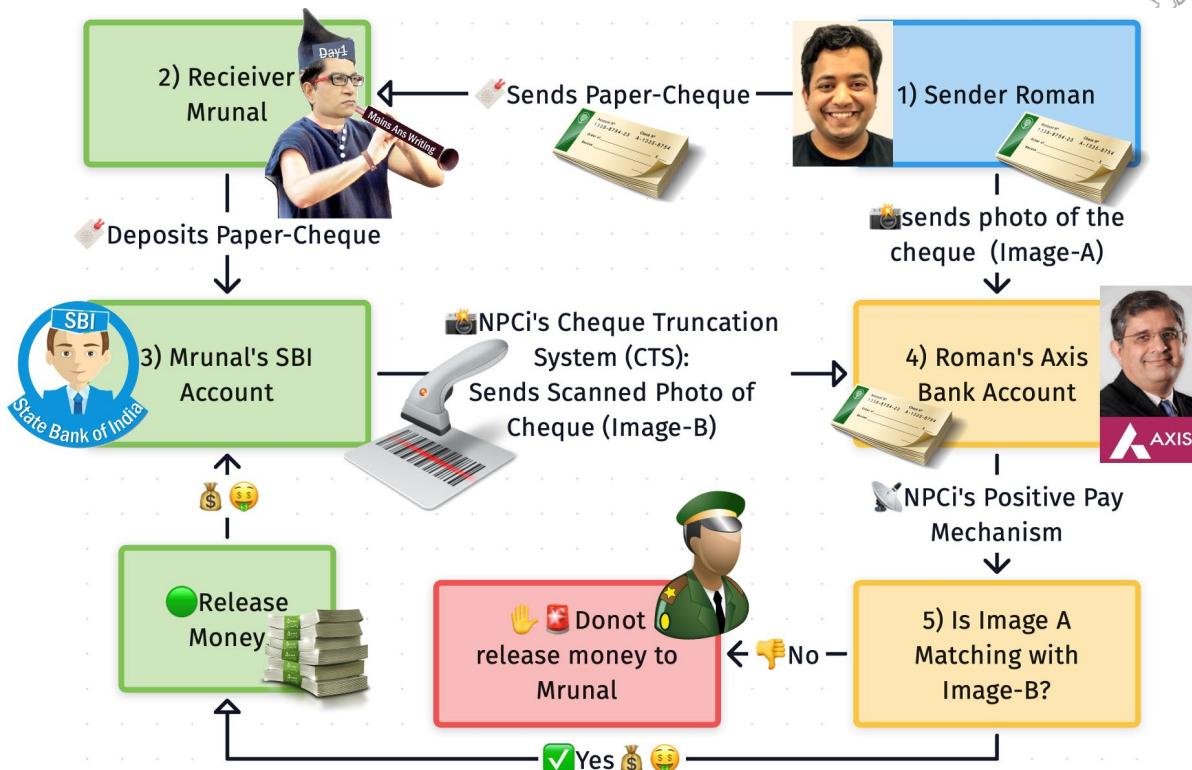
10.7.2 💵 DD and Overdraft



- **Overdraft:** When person has insufficient bank balance, still he may withdraw money from his account (as a loan). Such facility is called **Overdraft**. Pradhan Mantri Jan-Dhan account has *Overdraft* upto Rs 10,000/- with certain conditions. (*More in Pillar1D: Financial Inclusion*).
 - o **Overdraft** is mainly for short-term operating expenses. (अस्थाई रूप से लघु अवधि के लिए कर्ज)
 - o **Loans** is mainly for longer term higher value expenses. (दीर्घ अवधि के लिए मोटी रकम का कर्ज लेना)

10.7.3 💵 Cheque → NPCi's Cheque Truncation System (CTS) & Positive Pay Mechanism

- Basically, scanned image of cheque electronically sent to the drawee branch for faster clearance without theft or tempering. <see diagram given on next page>



💡 FAQ: I've 500 doubts about how James Bond villain can misuse it? Ans. NOT IMP.#RAFTAAR.

10.8 💳 💵 ELECTRONIC ORDERS / DIGITAL PAYMENT

Payment & Settlement System Act 2007 empowers RBI to regulate card payment, e-payment related products and services. (भुगतान और निपटान प्रणाली अधिनियम 2007)

10.8.1 💳 💵 CBS (full form: Core Banking Solution /system)

⇒ It is a banking software with web-platform for centralized data management & branch-less banking. E.g. Finacle software; BanCS software; E-Kuber (used in RBI)

▶ 🧑🎓 FAQ I didn't understand this. Ans. Watch lecture, sufficiently explained in it.

▶ 🧑🎓 FAQ: What is the difference between Core Banking Solution (CBS) versus Core Banking System (CBS)? Ans. Fundamentally it is the same thing. Dictionary word difference/legal pedantry/academic pedantry/hairsplittery= notimp4exam. #ಅಂಥೋ-ಪಢೋ-ಆಗೋ-ಬಡೋ

10.8.2 💳 💵 RBI's Next Generation Treasury Application (NGTA), 2020-Oct

- Deleting from handout. Because yet to be implemented & topic didn't progress much after 2020.

💡 ? MCQ: The term 'Core Banking Solutions' correct term? (UPSC Prelims-2016)

1. It is a networking of a bank's branches which enables customers to operate their accounts regardless of where they open their accounts.
2. It is an effort to increase RBI's control over commercial banks through computerization.



3. It is a detailed procedure by which a bank with huge non-performing assets is taken over by another bank.

Answer Codes: (a) 1 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3

Table 4: Digital Payment Systems- transaction limits may differ, depending on banks

	RBI's centralised payment systems (CPS) ^{##}	NPCI's IMPS
Type	RBI's RTGS: Real Time Gross Settlement	RBI's NEFT: National Electronic Funds Transfer
Transfer Amount	Min ₹2 lakh to ₹2000 crores (SBI).	upto ₹10 lakhs (SBI). ₹ 1 to maximum ₹5 lakhs
Target customers	Bizmen wanting high value transactions instantly	Ordinary retail customers (आम जनता के छोटे भुगतानों के लिए है)
Settlement mechanism	Instant settlement (झटपट/ तुरंत निपटारा)	- Settles net amount between banks at interval of 30 min. Instant settlement
Timing	BEFORE: only weekday office hours. After RBI reforms 24/7.	BEFORE: only weekday office hours. After RBI reforms 24/7. 24/7 on all days (दिन रात अविरल रूप से)
Fees	BEFORE: fee + GST Tax** After RBI Reforms: Rs.0	fee + GST#
Who can provide this facility?	<ul style="list-style-type: none"> - BEFORE-2021: Only Banks can provide this facility - 2021: RBI announces that non-bank entities can also become members of centralized payment systems (CPS = NEFT & RTGS). - So, in future, Amazonpay, PhonePe etc could also directly allow this 	Banks + Prepaid Payment Instrument (PPI)/ / mobile-wallet companies like Phonepe, MobiKwik etc.

⇒ # Although some banks don't charge IMPS fees for transactions upto ₹ "X"/- (EXACT Fig NOTIMP)

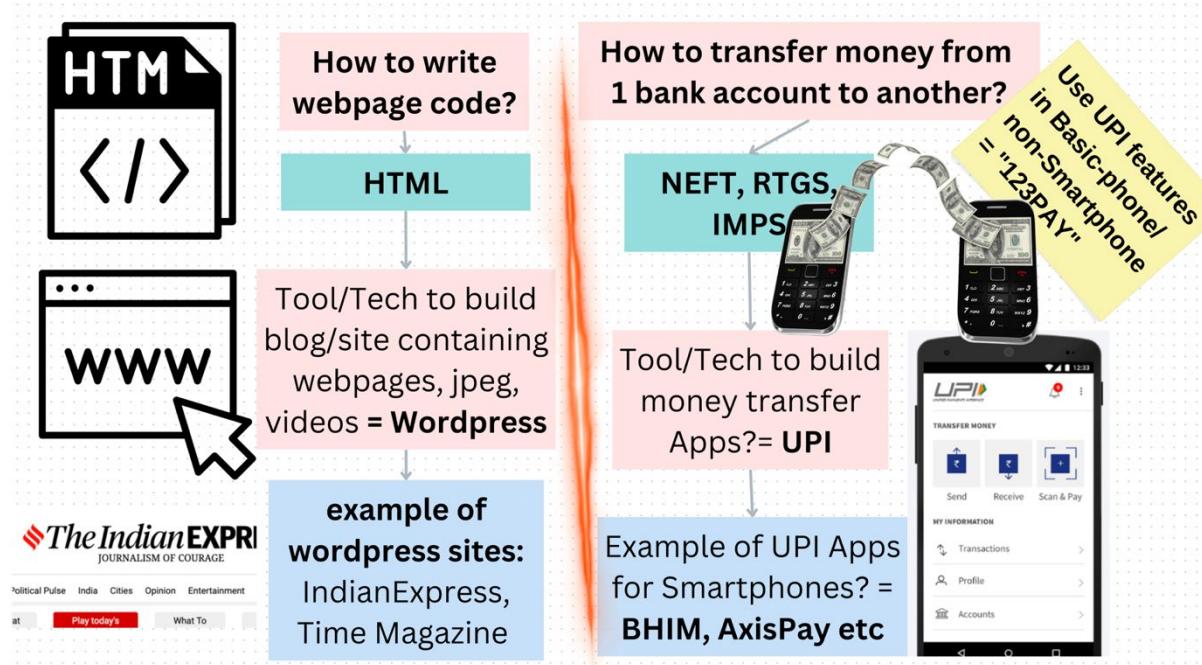
⇒ ##FAQ: Why doesn't RBI Merge RTGS & NEFT? Ans. RBI may have some technical operational reasons for it. RBI never bothered to disclose it in some big press release or newspaper headline. So I never bothered to do James-Bond Google search/PHD on it. Because it is an inefficient way of preparing for UPSC. Nonetheless, if u feel morally-outraged then Send suggestion to RBI Governor. Until implemented, prepare things as given in handout. Also, Plz change your 'approach' towards preparation of competitive exam. PHD-walli academic curiosity is of no use.



💡 Mrunal comments before next section: In the digital wallet apps → companies introduce new features & RBI introduces new technical norms on daily basis. We are not here to write a MBA research paper on their business-model & RBI regulations. Q.“sir u said x thing can't be done in phonepe App but now it can be done...as per my experience!! Ans. I've given simple illustration to explain thing. They keep adding new features in the App. UPSC asking only general broad MCQs from this. #UPI थोड़ा-पढ़ो-आगे-बढ़ो

10.9 🕵️ NATIONAL PAYMENT CORPORATION OF INDIA(NPCI)

- ⇒ 2008: NPCI is registered under Company Act as a “Not for Profit Company”. (मुनाफा रहित कंपनी)
- ⇒ Originally it was founded by 10 banks with ₹ 100cr capital. 2020-Dec: Paytm, PhonePe, Amazon Pay etc also became shareholders of NPCI (ये सब शेयर धारकों ने पूँजी डालकर इस कंपनी को बनाया है)
- ⇒ Objective? cost-effective payment solutions / technology for Banks. (रियायती लागत पर बैंकिंग टेक्नोलॉजी)
- ⇒ Its UPI-BHIM app & other mechanisms also help in financial inclusion of villagers & poors by expanding the reach of banking network. (गरीबों / गँववालों के वित्तीय समोवेशन में मदद के लिए अलग अलग तकनीकी आविष्कार किए हैं) More abt financial inclusion in Pillar# 1D.



Above is not hundred percent technically correct explanation, but it is just to help you visualise.

10.10 🕵️ 💳 NPCI → UPI (UNIFIED PAYMENT INTERFACE)

It is a technology for building digital payment apps based on IMPS with following features:

- ⇒ QR Scan & Pay to merchants.
- ⇒ You can link bank account for direct transfer of money without storing money in ‘wallet’ first. (unlike AmazonPay / Mobikwick etc)
- ⇒ Such app can have Push transaction (e.g. Remittance to family), Pull Transaction (e.g. monthly bill deduction by Electricity Co.) or even Bill sharing among friends.



- ⇒ **Examples of UPI based app:** SBI's SBIBuddy/Yono, Axis Bank's AxisPay and NPCI's own BHIM.
- ⇒ **UPI 2.0 (2018):** Upgraded version of UPI. What are its new features? How is it different than UPI 1.0? Ans. NOTIMP #RAFTAAR 🚗 🚗
- ⇒ NPCI has been signing agreements with organisations in Bhutan, Nepal, Singapore, Europe etc. so that directly Indian tourists in those foreign countries can directly spend the money from their Indian bank account by using UPI-Based Apps. How? Ans. NOTIMP #RAFTAAR 🚗 🚗

10.10.1 ⌚ UPI: Push vs Pull Transactions

UPI based apps allow for both ⌚ Push transactions and ⌚ Pull transactions.

⌚ Push transactions	👉 Pull transaction
👉 Push = when u send money by your own discretion(मर्ज़ी) e.g. sending money to a relative/friend based on your mood.	👉 Pull transaction = when you have given command that every month electricity company should cut the money from my bank account → company will pull money without requiring u to push/click buttons every month.

► 📸 FAQ: Beyond that, whether "X" thing is push/pull?= Ans. NOTIMP #RAFTAAR 🚗 🚗

10.11 🕵️ 💳 NPCI → UPI → 123PAY FOR FEATUREPHONES



Figure 1: बेटी मेरे नोकिया के non-smart phone पे UPI आसानी से कैसे इस्तेमाल करें?

- ⇒ If user doesn't have a smartphone. If he has a Basicphone/Featurephone- with number pads:- still he can use UPI using USSD (Unstructured Supplementary Service Data) code (99#).
- ⇒ However this feature was very cumbersome. It was not very popular among the people. (स्मार्टफोन में तो UPI आधारित डेर सारी एप्स हैं किन्तु बेजिक/फ़िचर फ़ोन में UPI द्वारा पैसों का लेन देन काफ़ी जटिल और कनिष्ठ क्रिस्म का था. इसलिए गरीब लोग इसे इस्तेमाल नहिं करते थे। रिजर्व बैंक और NPCI ने मिलकर नई मुहिम/ प्लेटफ़ॉर्म बनाया '123PAY')

So, 2022-March: RBI launched a new UPI platform named 123PAY (with help of NPCI) to give more UPI-payment options for Featurephones/Basicphones such as-

- 1) USSD – (This was already available.)
- 2) Interactive voice response or (IVR)
- 3) missed call-based payments - user sends a missed call and then system calls him back in IVR mode (गरीब आदमी मिस्ड कॉल देता है तो सामने से उसे स्वचालित फ़ोन कॉल आएगा जहाँ वो रिकॉर्ड आवाज़ द्वारा दिए गए सूचनाओं के हिसाब से अलग अलग नंबर दबाकर पैसों का भुगतान कर सकता है।)



- 4) proximity sound-based payments -allow transactions using sound waves for contactless payments to other phones. (ध्वनि आधारित स्पर्श-हीन भुगतान)
- 5) easier utility bill payment (gas, electricity etc) via feature phone
- 6) user need to link the bank account with feature phone. → Money transfer, check account balances, pay utility bills, recharge FAST Tags of their vehicles etc
- 7) New app for Featurephone

Benefit? 😊 ↗ Digital payment among the poor people who do not have smart phones but have feature phones. (गरीब लोग जिनके पास महँगा वाला स्मार्टफोन नहीं है वे भी डिजिटल भुगतान कर पाएंगे.)

10.11.1 UPI observations by 📊 ES23

Year	Total No. of Digital Transactions (Crores)	UPI's Share of Digital Transactions
FY19	3,100	17%
FY20	4,600	27%
FY22	8,840	52%

- ✓ total number of digital transactions **steadily increased** in the last three years.
 - ✓ % share of UPI in the total digital transactions also **steadily increased** in the last three years.
- यूपीआई द्वारा डिजिटल भुगतान में काफी बढ़ोतरी हुई है और यह सब बहुत महान है ऐसा आर्थिक सर्वेक्षण ने पाया.

10.11.2 UPI single-block-and-multiple-debits functionality (2022-Dec)

BEFORE	AFTER
<p>⇒ Autopay single-block-and-single-debit functionality. e.g. Every month Torrent Electricity company can cut the electricity bill payment from my bank account until my bank account is exhausted.</p>	<p>⇒ single-block-and-multiple-debits functionality.</p> <p>⇒ e.g. if bank account has 1 lakh rupees then earmarking that autocut Not more than 10k for amazon, not more than 20k for mutual fund/SIP etc. every month.</p> <p>⇒ This type of multiple blocks can be created for E-Commerce, hotel bookings, purchase of shares, bonds, G-Sec.</p> <p>⇒ Additional commands/mandates may be given e.g. cut money after delivery is made.</p>

HOW will it work in real life? Ans. Notimp. Neither RBI governor nor the newspaper-Wala bothered to explain in detail. so I did not bother to do PHD.



10.11.3 UPI facility to foreign tourists coming to India (2023)



विदेशी व्यक्ति भारत में बैंक खाता खोलकर यूपीआई वाली मोबाइल एप द्वारा भारत में खरीदारी कर सके ऐसे रिजर्व बैंक कदम उठा रहा है।

BEFORE	From 2023
if such non-resident/foreigner came to India, he could not do shopping using UPI money transfer from their NRE/NRO** bank account,	This facility made available to G20 nations ke tourists coming to India.

** Non-Resident Indians/foreigners can open bank accounts in Indian banks. Such accounts are known as NRE/NRO/FCNR (Foreign Currency Non-Resident Account). NRE/NRO/FCNR= internal difference is not imp. For our exam.

10.11.4 📱 💳 NPCI → UPI BHIM Full form: Bharat Interface for Money (2016)

- ⇒ Money transfer app designed by NPCi. It works on Android, iOS/Apple mobiles as an APP,
- ⇒ Works even on non-smart (=basic feature) phones using *99# USSD- Unstructured Supplementary Service Data.
- ⇒ Bank to bank / peer to peer transaction using mobile phone (xyz@upi). No need to install multiple apps for each bank account (SBIBuddy, AxisPay etc) just one BHIM app to use all such bank accounts. App has **3 factor** authentication system.
- ⇒ Your money stays in bank account and earns interest. It's not stored in 'wallet outside your bank account' as it happens in Mobikwick, PhonePe etc. (PS: in later stage, PhonePe etc private apps also included UPI type mechanism so storing money in 'wallet' became optional but we need not engage in Hairsplittery/PHD.)
- ⇒ No cards involved so no MDR or such hidden charges.



10.11.5 📱 NPCI → RuPay Card Payment Gateway (2012)



- ⇒ Rupee + Payment = RuPay card is world's 7th payment gateway similar to Mastercard, Visacard, China's Union Pay. Rupay charges less fees than other companies.
- ⇒ Works in **3 channels:** 1) ATM, 2) Point of Sale Device (PoS/card reader machine), 3) Online portals.
- ⇒ Rupay debit card given free with PMJDY (Jan Dhan) Bank account (Refer Pill#1D).
- ⇒ Rupay has signed collaboration agreements with some digital payments companies in Singapore, Japan etc. So, it may be used in those countries. But presently Rupay is not having the widest reach across all the countries unlike MasterCard and Visa.

10.11.6 📱 NPCI other notable initiatives

Table 5: NPCI has built following mechanisms / platforms / systems / apps:

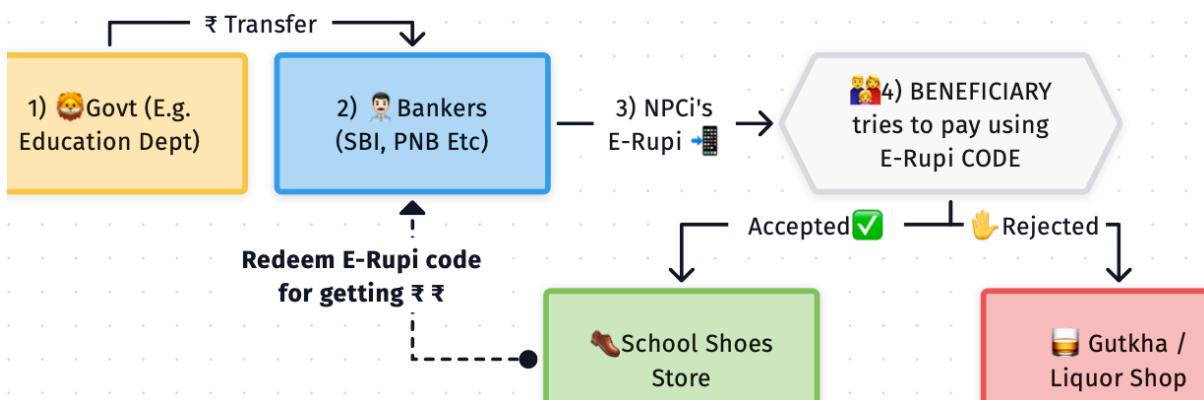
BBPS & UPMS	<ul style="list-style-type: none"> - Bharat Bill Payment system for monthly payments of utility bills (gas, electricity etc.) - 2022-Jan: NPCI's daughter/subsidiary company Bharat BillPay Ltd. Company → launched a Unified Presentment Management System (UPMS) → but technical stuff. NOTIMP4 exam - 2022-Dec: BBPS new features added e.g. payment for education fees, tax payments, rent collections but technical stuff. NOTIMP4 exam <p style="color: red;">💡 FAQ: How is BBPS vs UPMS similar or different? Ans. NOT IMP 4 Exam. These are one-liner GK. Not PHD thesis topics!</p>
NACH	<p>National Automated Clearing House for bulk monthly payments of utility bills, dividends, salaries, pension / insurance premiums etc.</p> <p style="color: red;">💡 FAQ: How is BBPS vs UPMS vs NACH similar or different? Ans. NOT IMP 4 Exam. These are one-liner GK. Not PHD thesis topics!</p>
NFS	<p>National Financial switch. This technology runs the ATM network</p>



CTS	Cheque Truncation System (2010) learned in previous section.
AEPS: Aadhar Enabled Payment System	<p>⇒ Useful for Direct Benefit Transfer (DBT: प्रत्यक्ष हस्तांतरित लाभ) into beneficiary's account for MNREGA wages, LPG subsidy, scholarship etc. [More in Pill#6]</p> <p>⇒ It's also required for Bankmitra-MicroATM system.</p>
NETC	⇒ National Electronic Toll Collection provides technology support to the FASTag toll collection. (राजमार्ग पर पथकर वसूलने के लिए)
PAI chatbot	Artificial Intelligence (AI) based chatbot to reply to people's online queries about NPCI's products like FASTag, RuPay, UPI, AePS etc.
DigiSaathi Helpline Number (14431)	RBI launched with help of NPCI. - for digital payment & card payments problems. The No. is 1800 891 3333 (not imp4exam but personal use)
DakPay (2020)	Payment App by Department of Post and its India Post Payments Bank
BharatQR(2016)	Given in next section of this handout. Scroll down
E-Rupi (2021)	Given in next section of this handout. Scroll down

10.12 📲 💳 💳 DBT → E-RUPI BY NPCI (2021)

- (Origin) E-rupi is an SMS /QR Code based Prepaid Cashless Electronic Voucher created by National Payment Corporation of India (NPCI) using its UPI Platform. [क्यूआर कोड आधारित प्रीपेड नगदीरहित इलेक्ट्रॉनिक रसीद जिसे भारतीय राष्ट्रीय भुगतान निगम (एनपीसीआई) ने अपने यूपीआई प्लेटफॉर्म का उपयोग कर बनाया]
- It is also supported by finance ministries Department of Financial Services and Health ministry's National Health Authority (NHA) [वित्त मंत्रालय के वित्तीय सेवा विभाग और स्वास्थ्य मंत्रालय के राष्ट्रीय स्वास्थ्य प्राधिकरण ने भी इसकी मदद की है]

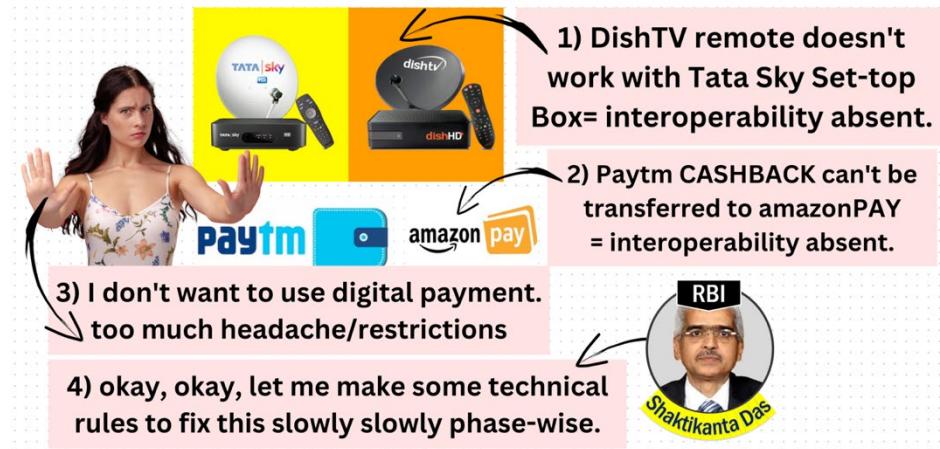


- Can be used to provide 1) Food for mother, child, poor families under various schemes. 1) Medicines for TB, Corona etc. 3) Fertilizer subsidies for farmers [खाद्य दवाइयां उर्वरक की समिक्षा]
- Even private sector companies can issue it for 1] employees e.g. Gym membership, golf club membership, hotel tourism travel. 2] use it for Corporate Social Responsibility (CSR) programs (What is CSR? Ans. Big companies have to spend a portion of their profit for social service. Ref Pillar#1C2). [निजी कंपनियां भी कर्मचारियों को विविध चीजों के लिए दे सकती हैं. कारपोरेट सामाजिक दायित्व अदायगी में भी इसका इस्तेमाल हो सकता है]
- Following reforms taken in E-Rupi in 2022-Feb



BEFORE	After
maximum storage limit ₹10,000 per code	₹1 lakh (महत्तम इतना पैसा संग्रहित कर सकते हैं)
code can be used one-time/ single-time only. (कोड केवल एक-बार इस्तेमाल हो सकता था)	<p>⇒ Code can be used more than once /multi-use - until the amount of the voucher is completely exhausted/redeemed).</p> <p>⇒ e.g. Out of ₹1 lakh → ₹10,000 paid to furniture store, ₹20,000 paid to electric-store etc.</p>

10.12.1 🛡️ 🎯 🎉 🎉 Interoperability Problem (इंटरऑपरेबिलिटी)



▶ 📊 FAQ: What are those technical Rules to improve interoperability? NOTIMP #RAFTAAR.

10.13 🛡️ 🎯 QR CODES: COMPULSORY TO IMPLEMENT UPI/BHARAT QR FROM 2022

- 1990s: 2 dimensional (2D) Quick Response (QR) Code system developed in Japan.
- Indian E-payment systems function on 3 types of QR Codes, namely,

Table 6: 📊 Difference between UPI QR vs Bharat QR? NOT.IMP.4.EXAM ✅ 💰 थोड़ा-पढ़ो-आगे-बढ़ो

Proprietary QR code 	<p>⇒ e.g. Paytm or PhonePe ke exclusive QR codes.</p> <p>⇒ 🤔 Problem? Other companies' app may not be able to scan and pay it.</p> <p>⇒ So, RBI has prohibited companies from launching any new proprietary QR code.</p>
UPI QR code	Generated by UPI app of NPCi. 🤔 It can be scanned by all Apps which are developed using UPI technology.
Bharat QR code	Developed by NPCi with help of Visa and Mastercard. 🤔 It can be scanned by all Apps which are developed using UPI technology.

- ⇒ RBI has ordered all the Payment System Operators (PSOs e.g. Paytm, PhonePe, MobiKwik, Google Pay etc) to shift to UPI QR or Bharat QR by March 31, 2022.
- ⇒ 🤔 Benefit? All Payment apps will be able to scan these QR codes → 'interoperability'.



10.13.1 rMQR (Rectangular Micro QR Code)

QR Code



rMQR Code



- ⇒ 1990s: JAPANESE ENGINEER Masahiro Hara, designed the square QR code
- ⇒ Now he's working on rMQR (rectangular QR code).
- ⇒ rMQR can be printed in narrow spaces
- ⇒ rMQR has same scanning speed as normal square shaped QR code.

10.14 PAYMENT SYSTEM OPERATORS?

Payment and Settlement Systems Act, 2007: RBI gives license to Payment System Operators (PSOs).

Type of PSO	Examples
Umbrella Entity For Retail Payments →	NPCI (learned in previous section)
Card Payment Gateway Operator →	MasterCard, Visa, Rupay
Crossborder / International Remittance	Western Union, MoneyGram
Prepaid Payment Instrument (PPI)	AmazonPay, Mobikwik, PhonePe, PayU, PayTM Wallet etc
Payment Aggregators (PAs)	They help the merchant to collect payment from customer digitally e.g. Paytm, Amazon, GooglePay, Zomato etc.
ATM Operators	SBI etc's own ATMs White label ATMs by Tata, Muthoot, SREI etc
Financial Market Infrastructure Provider	Clearing Corporation of India (CCI): provides digital infrastructure for share/bond/foreign currency deals etc. (Ref: HDT-Pillar#1C)

10.14.1 New Umbrella Entity (NUE) for Retail Payments System (2019)

- ⇒ Paytm has rival companies like Mobikwick, PhonePe; Mastercard vs Visa; SBI vs Axis Bank;
- ⇒ But there is no rival company against NPCI. वर्तमान समय में NPCI का प्रतिस्पर्धी कोई नहीं है
- ⇒ NPCI is an umbrella entity for retail payments system - it operates in card payment (RuPay), Money transfer (IMPS), Mobile Apps (UPI, BHIM), ATM Network (NFS) etc.
- ⇒ 2020: RBI issued a proposal, “if any Indian company interested to compete in this (NPCI-like) retail payment segment, we'll license them as new umbrella entity (NUE: खुदरा भुगतान के लिए नई छतरी इकाई). Subject to these technical “XYZ” technical eligibility requirements”
- ⇒ Benefits? More companies like NPCI → more competition → more innovation and cheaper services for users. (स्पर्धा बढ़ेगी तो नए आविष्कार होंगे, डिजिटल भुगतान सेवाएं पहले से भी ज्यादा सस्ती / किफायती/बहेतर होंगी)
- ⇒ Facebook, Google, Amazon, Flipkart and others had applied for NUE licences. But none of them met RBI's expectations. So, 2023-Jan: RBI has put this license process on halt/suspension. (जिन



कंपनियों ने इसके वास्ते अर्जी डाली थी उनके अनुभव और कविलियत से रिजर्व बैंक संतुष्ट नहीं था। इसलिए अभी रिजर्व बैंक ने इस पूरे मामले को ठंडे बस्ते में डाल दिया है)

MCQ. Find Correct Statement(s) [asked in UPSC- Prelims-2017]

1. NPCI helps in promoting the financial inclusion in the country.

2. NPCI has launched RuPay, a card payment scheme.

MCQ. Find Correct Statement(s) [asked in UPSC- Prelims-2018]

1. BHIM app allows the user to transfer money to anyone with a UPI-enabled bank account.
 2. While a chip-pin debit card has four factors of authentication, BHIM app has only two factors of authentication.

Answer codes: (a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2

10.14.2 Third Party Application Providers (TPAPs): Google Pay, Whatsapp Pay

Delhi HC court case going on about their registration. But NOTIMP/outdated. #RAFTAAR

जिसको IAS/IPS बनना है वह आगे का Next topic पढ़े.....

10.15 CREDIT & DEBIT CARDS (ALSO CALLED ‘PLASTIC MONEY’)



Table 7: Card Types based on Payment modality

1) Credit Card (कर्ज पे शाँस्यंग)	2) Debit Card (अपने बैंक बचत का पैसा इस्तेमाल करो)
If Credit card used for withdrawing money from ATM, then it's a type of 'borrowing', so, bank levies interest rate.	Debit card can be used to withdraw ₹ ₹ from ATM from your existing bank balance. So, it's not 'borrowing'.
<u>Credit card vs Overdraft?</u> 1. Credit cards = for shopping. You carry card in your pocket. Bank may give u some reward-points/gifts if you spend “₹.X” per year	<u>Debit card vs Overdraft?</u> You should be intelligent enough to self-understand that much. शिक्षक हर चीज की स्पून फिडिंग करेगा/चम्पच से खिलाएं वह विद्यार्थी के मानसिक विकास के लिए अच्छी बात नहीं



1) Credit Card (कर्ज पे शॉपिंग)	2) Debit Card (अपने बैंक बचत का पैसा इस्तेमाल करो)
<p>2. - for overdraft= you have to manually visit the bank branch, fillup form. It's not in the form of a 'card'. Doesn't give u points/gifts.</p> <p>👉 Further difference not.imp.not.here.for.IBPS-exam</p>	

- ⇒ 3) **Hybrid Card / Duo Card:** Single card with two chips for 1) credit card and 2) debit card. So, you don't have to carry two separate cards. E.g. Indusbank Hybrid card. एक ही कार्ड में दोनों का मजा 🎊
- ⇒ 4) **Pre-paid card:** It's a subtype of debit card. Debit card is linked to a given bank account. But Pre-paid card can be bought even without having account in the given bank e.g. IRCTC's UBI Prepaid Card which can be used for buying rail tickets, meals etc. support provided by Union Bank of India (UBI) and NPCi's Rupay gateway. (इस कार्ड को पैसा देके खरीदना पड़ता है। बैंक खाता होना जरूरी नहीं)
- 📺 FAQ: Other technical benefits / MDR challenge / BizGK / PHD-doubts / practical-real life implications = not imp.

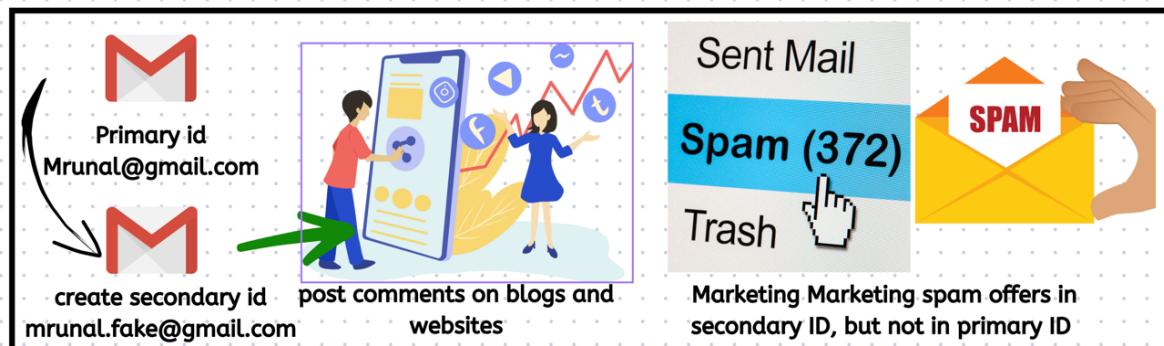
10.15.1 📁 Card Types based on Security Features: (सुरक्षा प्रणाली के हिसाब से कार्ड के प्रकार)



HomeWork: Read about RFID & NFC from Sci-Tech book/internet.



10.15.2 📱 🖥 Card Tokenization (from 1/Oct/2022)



- ⇒ Tokenisation = creates a set of numbers called 'token' to replace/hide the sensitive card data such as the 16-digit account number, expiry date and security code. (हैंडिंग से बचने वाले असली कार्ड नंबर की जगह टोकेन/काल्पनिक-नंबर बनाकर दे दो ऐसी बात है। ताकि विक्रेता का आपके कार्ड की गुप्त जानकारी मिले नहीं)
- ⇒ This ensures your card information is not disclosed to merchant website= protection from hacking.
- ⇒ Card owner can generate Tokenization through visiting card-issuer's/banker's website/App through laptops, desktops, tablet, wearables (smartwatch) etc.
- ⇒ From 1/10/2022, this became effective.



Figure 2: शपिंग से डर नहीं लाता, Identity theft se lagtaa hai!

10.15.3 🚗 National Common Mobility Card (NCMC, 2019)

'One Nation One Card Model' by Ministry of Housing & Urban Affairs (MoHUA) with the help of NPCi, Bharat Electronics Limited (BEL Company), and some banks.

Outdated for 2023-24 so Deleting for RAFTAAR.



10.15.4 FASTag for paying toll fees at highways (2017)

	<p>FASTags are prepaid rechargeable tags that allow for automatic toll collection at electronic toll collection gates Radio-frequency Identification (RFID) technology.</p>
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- ⇒ 2017: National Highways Authority of India (NHAI, a statutory body under Highway ministry) launched 2 mobile apps MyFASTag and FASTag Partner to facilitate Electronic Toll Collection (इलेक्ट्रॉनिक माध्यम से पथकर/टोल वसूली के लिए राष्ट्रीय राजमार्ग प्राधिकरण द्वारा अलग अलग एप बनवाए गए हैं).
- ⇒ NPCi's has developed **National Electronic Toll Collection (NETC)** technology to aid this.
- ⇒ Persons loads up ₹ ₹ in his mobile app → activates RFID tag in his car → when it passes through highway toll-booth, the money is automatically deducted. (गाड़ी टोल नाके से गुजरेगी अपने आप पैसा कट जाएगा)
- ⇒ Benefit? faster traffic movement, tracking stolen cars.
- ⇒ From 2021, it became mandatory for all vehicles passing through tolls to have FASTags. Vehicles without FASTags will have pay up more fees/toll at the gates. (ये लगाना अनिवार्य हुआ, अन्यथा ज्यादा फीस)

10.15.5 ATM and its Types



- ⇒ Automated Teller Machine (ATM) allow bank customer to withdraw money or check balance without visiting any branch of a bank. (स्वचालित रूप से नकदी मुद्रा देने वाला यांत्रिक डिव्ह्यु)
- ⇒ ATM network works on NPCi's NFS (National Financial Switch) technology.

Bank label	Bank itself owns and operates the ATM network.
Brown label	<p>Bank owns but operations outsourced (cash refilling truck, guard)</p> <p>⇒ <i>Note: Some books offer different definition, but I've taken above definition from Economic Times Article 2015.</i> (कुछ किताबों में व्याख्या अलग है मैंने इधर से ली है)</p>
White label	<ul style="list-style-type: none"> - Non-Bank owns & operates. E.g. Muthoot Finance, Tata Comm, Prism - FAQ: What is on-tap licensing system for White-label ATM? Ans. Outdated topic for 2023.
Micro-ATM	Bankmitra manually makes entries of deposit and withdrawal for customer. He uses handheld device for using card & Aadhar biometrics. NPCi's AEPS technology gives backend technological support.

10.16 MDR: FULL FORM: MERCHANT DISCOUNT RATE (व्यापारिक छूट दर)

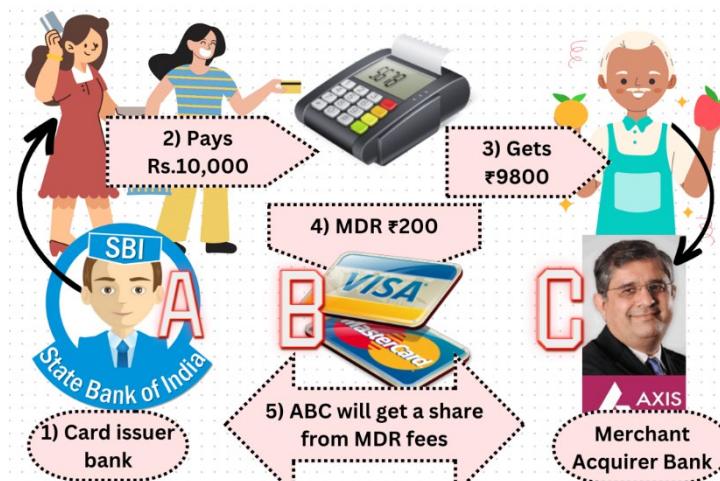
- ⇒ MDR is the fees that a merchant must pay to his (acquirer) bank for every credit / debit card transaction.

- ⇒ MDR fees is **shared** among 3 parties 1) customer's card issuing bank 2) merchant's acquiring bank 3) payment gateway provider. (तीन पक्षों में इस फीस को बांटा जाता है)
- ⇒ MDR hurts merchants' profit margin, discourages them from adopting Point of Sale (PoS) terminals (=card swiping machine) → obstacle to digital economy. (व्यापारी के मुनाफे पर असर होता है इसलिए वह कार्ड मशीन अपनाने में उदासीनता दिखाते हैं।)

Table 8: Steps taken to address MDR issue

RBI	⇒ 2017: Imposed ceilings on MDR fees i.e. MDR can't be more than "x%" of the transaction amount. (रिजर्व बैंक द्वारा तय सीमा से ज्यादा फीस नहीं मांग सकते)
Budget 2019	⇒ It imposed some technical rules to help companies. I'm deleting it because old /faded news, mostly technical.

10.16.1 MDR Subsidy by MEITY



In above photo, MDR fees % is not actual number but for illustration/example.



Instrument	UPI	NPCI's Rupay Debit Card	NPCI's Rupay Credit Card Mastercard/Visa's Debit/Debit card etc
MDR % on transaction value	0%	0%	"x%" (NOT ZERO)

- ⇒ 🎾 So, if a banker promotes Rupay debit card / UPI App → Banker will not earn MDR fees. So bankers promote MasterCard & Visacard to their customers and merchants (instead of Rupay/UPI). (बैंकर को मज़ा नहीं आता क्योंकि उसे डेबिट कार्ड व यूपीआई एप में MDR की फीस नहि मिलेगी।)



- ⇒ So, 2021-Dec: MEITY (Ministry of Electronics & Information Technology) announced up to ₹2,000 MDR Subsidy to Merchant's Bank for RuPay debit cards transactions and UPI transactions.[#] (तो सरकार ने बैंकरों को बोला की तुमको मज़ा दिलवाने के लिए MDR नुकसान के एवज़ में सब्सिडी देंगे)
- ⇒ 😊 this will encourage digital payment especially in small towns / rural areas (डिजिटल भुगतान ऊपर लगने वाले मरचण्ट डिस्काउंट रेट पर सरकार द्वारा सब्सिडी दी जाएगी यदि भुगतान रूपये डेबिट कार्ड या UPI द्वारा हो रहा है)
- ⇒ 😢 Foreign Players like MasterCard and Visacard are opposed to Indian govt's preferential treatment given to India's Rupay. ("रूपे" को मिल रही एसी रियायतों से विदेशी कार्ड कंपनियां नाराज़ हैं)

► 🧑‍🤝‍🧑 FAQ: "I've 500 jaat ke PHD doubts & counter arguments about this MDR subsidy" Ans.

Plz waste your precious time reading egazette.nic.in/WriteReadData/2021/231960.pdf

एवज़ ? MCQ. Which one of the following best describes the term “Merchant Discount Rate” sometimes seen in news ? (Pre18 Set-D)

- The incentive given by a bank to a merchant for accepting payments through debit cards pertaining to that bank.
- The amount paid back by banks to their customers when they use debit cards for financial transactions for purchasing goods or services.
- The charge to a merchant by a bank for accepting payments from his customers through the bank's cards.
- The incentive given by the Government, to merchants for promoting digital payments by their customers through Point of Sale (PoS) machines and debit cards.

10.17 💳 💳 💳 MEASURES TO PROMOTE LESS-CASH ECONOMY

- 2019: RBI setup Nandan Nilekani committee.
- Budget imposed limits and restrictions on cash transactions (more in Pillar2:Black Money)
- + many small things for Mains. Ignored here for #RAFTAAR-Prelims.

10.17.1 💳 💳 💳 Payments Infrastructure Development Fund (PIDF) 2020-Jun

- ⇒ ₹250cr from RBI + ₹250 cr from (Banks and Card Gateway Operators) → ₹500 cr fund setup.
- ⇒ Objective? Provide funding/ subsidy to encourage merchants in the small towns, villages and North Eastern states to adopt point-of-sale (PoS) card swiping machines.
- भुगतान इंफ्रास्ट्रक्चर के लिए निधि/कोष: गांव, छोटे शहरों और उत्तर-पूर्वी इलाकों में व्यापारियों को कार्ड मशीन अपनाने के लिए मदद

10.17.2 💳 💳 💳 : Offline Retail Payments Using Cards and Mobile Devices

- ✓ While mobile phones, cards, e-wallets, etc. available but, internet connectivity issues especially in rural/remote areas 😢 😢 (ग्रामीण और दुर्गम प्रदेशों में इंटरनेट की खराबी/समस्याएँ)
- ✓ 2021: RBI allowed offline mode of payments using cards, wallets or mobile devices upto Rs.200 per transaction. HOW? Ans. ► 🧑‍🤝‍🧑 James-Bond-girl not important)



- ✓ 📈 Benefit? Error-free digital transactions in areas with poor internet connectivity (दुर्गम प्रदेश जहाँ इंटरनेट की सतत रूप से सेवा उपलब्ध नहीं, वहाँ पर भी डिजिटल भुगतान को प्रोत्साहन मिलेगा.)

10.18 📈 💼 DIGITAL PAYMENT REGULATORY BODIES (नियंत्रण संस्थाएँ)

10.18.1 📈 💼 Digital Transactions Ombudsman (DTO-2019)

- ⇒ RBI designates senior RBI officials at 21 places across India as DTO. They hear customer complaints upto ₹ 20 lakh against prepaid payment instruments, Mobile wallets, Apps, NEFT/RTGS and other digital transactions. ((डिजिटल लेनदेन शिकायत निवारण अधिकारी/लोकप्रहरी)).
- ⇒ They can order the company / bank to fix problem and pay upto additional ₹ 1 lakh for mental agony of customer → Higher Appeal to Dy.Gov of RBI. (मानसिक उत्पीड़न के लिए जुर्माना/मुआवजा).
- ⇒ If matter > ₹ 20 lakh, then matter outside his jurisdiction. Victim has to approach courts. (20 लाख से अधिक रकम का मामला होगा, तो पीड़ित ने न्याय/इसाफ के लिए अदालत/कोर्ट में जाना होगा)

10.18.2 📈 💼 RBI: BPSS (Statutory)

- ⇒ 1998: Narsimham-II Committee on Banking Reforms suggested regulatory framework for e-banking, card payment etc. Then,
- ⇒ 2007: Payment & Settlement Systems Act (भुगतान और निपटान प्रणाली अधिनियम) → RBI → (Statutory) Board for Regulation and Supervision of Payment and Settlement Systems (BPSS: भुगतान और निपटान प्रणाली के विनियमन और पर्यवेक्षण के लिए बोर्ड).
- ⇒ All types of payment system providers have to register with RBI's BPSS- whether bank, non-bank, wallet/Prepaid Payment Instrument (PPI) etc. (सभी भुगतान संस्थाओं ने पंजीकरण करवाना अनिवार्य)

10.18.3 📈 (Proposed but NOT YET DONE) Payment Regulatory Board (PRB)

Outdated for 2023-24. Deleted for #Prelims-RAFTAAR

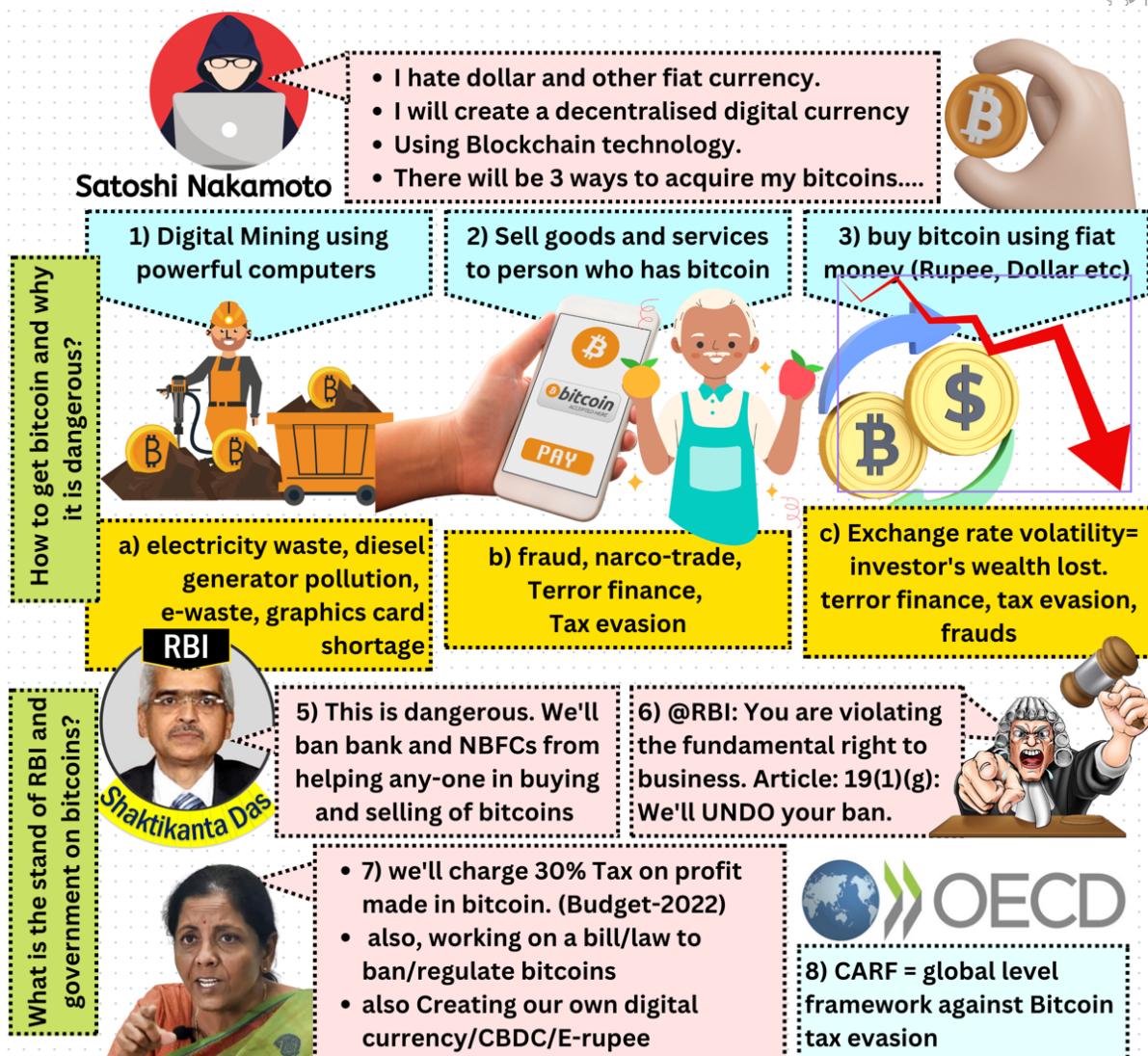
10.19 📈 💼 DIGITAL PAYMENT RELATED INDEX / COMPETITIONS/REPORTS BY RBI

Below table given if preparing for RBI grade-B officer exam etc. I am not spending time in writing the ranks because poor cost benefit for #IAS-Prelims-RAFTAAR.

📊 REPORT	RBI's Payment and Settlement Systems in India Vision 2019 – 2021
📊 INDEX/Ranking	RBI Digital Payments Index- to check level of digital payment in various areas of India. (DPI डिजिटल भुगतान सूचकांक)
📊 INDEX/Ranking	RBI's Financial Inclusion Index- to check whether every poor person is having access to banking, loan, insurance pension, etc. (वित्तीय समावेशन सूचकांक)
📊 🏆 Competition	RBI's Harbinger Hackathon 2021 competition for innovation in digital payment.

10.20 💳 💻 CRYPTO-CURRENCY & BLOCKCHAIN TECHNOLOGY

Note: For easier visualisation, I have wrote “bitcoin” instead of “crypto-currency” at most places.



- ⇒ [Definition] **Cryptocurrency:** is a digital / virtual currency created & stored using blockchain technology. क्रिप्टोमुद्रा एक डिजिटल मुद्रा है जिसे ब्लॉकचेन तकनीक का उपयोग करके बनाया और संग्रहीत किया जाता है।
- ⇒ [Definition] **Blockchain:** A secured decentralized database/ distributed ledger technology (DLT) that maintains a continuously growing list of records / transactions. Old entries can't be deleted, new entries will be visible to all. Mainly used for running cryptocurrency network. But it can also store any type of data. (ब्लॉकचेन एक डेटाबेस है जो रिकॉर्ड की निरंतर बढ़ती सूची को विकेन्ट्रीकृत रूप से बनाए रखता है।)
- ⇒ [Origin] Anarchist groups lost faith in **FIAT MONEY** because USA's Subprime Crisis (2007) eroded the purchasing power of US Dollar. They also dislike **Banks & Card Companies** because of transaction charges on e-banking, card payments, MDR, interoperability issues. (अशासनवादी समूहों को सरकार द्वारा जारी की मुद्रा नापसंद। इन अशासनवादी समूहों को बैंक और कार्ड कंपनियों से भी नफरत है)
- ⇒ **2009:** An anonymous user (अनाम/अज्ञात) **Satoshi Nakomoto** launched a cryptocurrency 'Bitcoin'.
- ⇒ total 21 million Bitcoins, wherein 1 Bitcoin (BTC) = 10^8 Satoshi (the smallest unit).
- ⇒ Other examples: Ethereum, Litecoin, Digicoin, Laxmicoin, Ripple, Dogecoin etc.



10.20.1 📱 Hot Wallet vs Cold Wallet

Just like you store money in Paytm DIGITAL Wallet. You can store Bitcoin and other cryptocurrency in Crypto Digital Wallets. Such wallet could be hot wallet or cold wallet.

- ⇒ 💡 Hot wallets are connected to the internet, (e.g. an online app)
- ⇒ ⚡ Cold wallets are not connected to internet (e.g. a USB pendrive).

10.20.2 💳 💰 📩: 🗃️ 💰 Crypto-Winter in Bitcoin Prices (भाव गिरा अब उठ नहि रहा है)

- ⇒ Between 2021-Nov to 2022-Jun: Bitcoin fell from ~\$70,000 to 20,000 → almost 70% loss! & similar situation in many other cryptocurrencies.
- ⇒ Some experts fear the prices will remain frozen in this range for upcoming months, hence using the term "Crypto-Winter" to denote it. (क्रिएटो-मुद्राओं के दाम गिर गए हैं और वापस ऊपर नहि चढ़ रहे, लगता है जैसे के क्रिएटो-बाज़ार सर्दी/ठंडी में जम गया है)

10.20.3 💳 💰 : 😷 FTX crypto scam (2022-23)

- ⇒ FTX was a Bahama-based company/platform that allowed buying and selling of various crypto currency. Its founder/CEO arrested for scam → 10 lakh+ investors' money got stuck.
- ⇒ How was the scam done? Ans. Its forensic analysis not important for our exam.
- ⇒ Sufficient to know these are the dangers associated with crypto currency.
ऑनलाइन प्लेटफॉर्म जहां क्रिएटो मुद्रा की खरीद बिक्री की जाती थी. 10 लाख से अधिक निवेशकों को चूना लगाया गया/ गबन हुआ है

** 🔍 🧐 FAQ: FAQ: How is Bitcoin not traceable, we can trace it using XYZ technology?

- ⇒ ✅ Ans. Using HTML, we can create Wikipedia website and using HTML we can also create gmail website. While everyone can read Wikipedia, I can't read your gmail page, unless I know your username password. Blockchain is similar. It depends on designer to make database "open" or "private/encrypted". Beyond that, we are not here for B.Tech (Computer Science) Semester exam/James Bond recruitment. We just have to memorize 3-4 negative points for exam.

10.20.4 💳 💰 :Crypto currency observations by 📊 EcoSurvey'23

- ⇒ Cryptocurrencies are primarily held by a few big players/"whales". So they can manipulate the prices by manipulating the supply.
- ⇒ Problems related to electricity-consumption, tax-evasion, abnormal fluctuation in prices, investors-fraud, no-intrinsic value et cetera.
- ⇒ then economic survey, 2023 give various examples of different-different legal provisions in EU, Japan, Switzerland, Nigeria etc. But from exam point of view not much benefit chasing it.
- ⇒ sufficient to know that coordinated international effort required to regulate the sector. OECD and G20 group are working in this direction. More about these intl.orgs in Pillar3B.
- ⇒ And ideally, we need strict rules over crypto-market, just like we've strict rules over sharemarket चंद बड़े खिलाड़ियों ने ज्यादातर क्रिएटोमुद्रा अपने कब्जे में की है. और वही खिलाड़ी इसकी सप्लाई/आपूर्ति को नियंत्रित करके, उसके दामों में छेड़छाड़ करते रहते हैं. क्रिएटो मुद्रा में बिजली की खपत, कर-चोरी, आम-निवेशक से धांधली होती है. विभिन्न देशों में इसपर अलग-अलग के नियम/कानून बनाए गए हैं, लेकिन वैश्विक रूप से नियमों में एकरूपता और सहकार की जरूरत है- आर्थिक सर्वेक्षण ने पाया.



10.20.5 🔒 💰: 💵 Cryptocurrency Profit pe 30% Tax and 1% TDS in 📁 Budget-2022

Refer to Pillar2A: Budget Direct Taxes to learn this matter.

10.20.6 🔒 💰: 💵 Cryptocurrency OECD's CARF Framework?

Refer to Pillar2A: Budget Direct Taxes to learn this matter.

10.21 ⚖️ 🔒 💰 🙌 CRYPTOCURRENCY BANNED IN OTHER NATIONS ?

⇒ Nepal, Algeria, Egypt, Morocco, Turkey , Iran etc: Bitcoin is illegal. (कुछ देशों में क्रिप्टो मुद्रा रखना गैरकानूनी है)

⇒ Chinese prohibited the banks from providing buying/selling/investment services for bitcoin etc cryptocurrencies. After this crackdown, Bitcoin prices fallen 📉 📉 by 30%

10.21.1 Crypto currencies as legal tender is in some countries

Venezuela	Two legal tenders: 1) Bolivar Paper currency issued by Govt 2) Petro Cryptocurrency issued by Govt.
Marshall Islands	Capital: Majuro, Sovereign state having free association with USA (for defense, social security, budget). Legal Tender was U\$D. But, ⇒ 2018-Feb: became first country to launch sovereign cryptocurrency named “Sovereign” [SOV]. So, now two legal tenders: US Dollars and SOV.
El-Salvador	⇒ El-Salvador: Two Legal tenders [1] US Dollars (from 2001). [2] Bitcoin (from 2021). ⇒ Thus, El-Salvador became 1st nation in the world to allow Bitcoin as legal tender

👉 **FAQ: Why El-Salvador allowed Bitcoin?** Ans. 🔒 not important after looking at previous prelims and mains papers. We're not preparing for El-Salvador-ElAS exam

10.22 🔒 💰: 💵 CRYPTOCURRENCY PERMITTED IN OTHER NATIONS/GROUPS

🌐 UNICEF 	⇒ United Nations International Children's Emergency Fund (UNICEF, HQ-New York,USA; 1946, later renamed to UN Children's Fund) ⇒ 2019: UNICEF setup a Cryptocurrency Fund to accept donations in cryptocurrencies. It has become the first UN organization to accept cryptocurrency. (यूनिसेफ संस्था दान में क्रिप्टो मुद्रा का भी स्वीकार करती है)
🌐 World Bank (More about this org in Pillar#3B)	⇒ 2018: World Bank launched World's first blockchain bond called “Bond-i” in Australia, denomination: Australian Dollars → public invests, gets ~2% interest after 2 years. ⇒ Blockchain bond requires less cost in server / database /paperwork maintenance unlike traditional bonds. 📈 <i>More in Pillar#1C: SEBI/Sharemarket</i>
Bill of Rights	⇒ World Economic Forum (WEF) is a non-government organization in Cologny-Geneva, Switzerland. (विश्व आर्थिक मंच. गैर सरकारी संगठन)



(अधिकारों का विधेयक)	⇒ 2020: Published a document, 'Blockchain Bill of Rights'. Document talks about rights to accountability, transparency, data privacy, data protection etc. (ब्लॉकचेन अधिकार पत्र/विधेयक: जवाबदेही, पारदर्शिता, डेटा गोपनीयता, डेटा सुरक्षा आदि के अधिकार)
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10.22.1 🔒 💰 💯 Cryptocurrency → Stable-coins

- ⇒ Stablecoin is a type of cryptocurrency whose price is backed by a reserve asset like gold / dollar / fiat currency e.g. Facebook's proposed 'Libra', Tether, Basecoin, and TrueUSD.
- ⇒ 😔 But, stablecoins challenges: 1) money laundering (धनशोधन / काले धन को वैध बनाना) 2) terror financing (आतंकी वित्तपोषण) 3) lack of consumer protection (उपभोक्ता संरक्षण की कमी) 4) financial frauds (वित्तीय धोखाधड़ी). 2019: France, EU, G20 group opposed. (बड़े देश/संगठन इसके विरोध में हैं)

MCQ. Find correct statement(s) about Bitcoin? [UPSC-CDS-2017-I]

1. It is a decentralized virtual currency.
2. It is generated through complex computer software systems.
3. The Reserve Bank of India recognized it as a legal tender in January 2016.

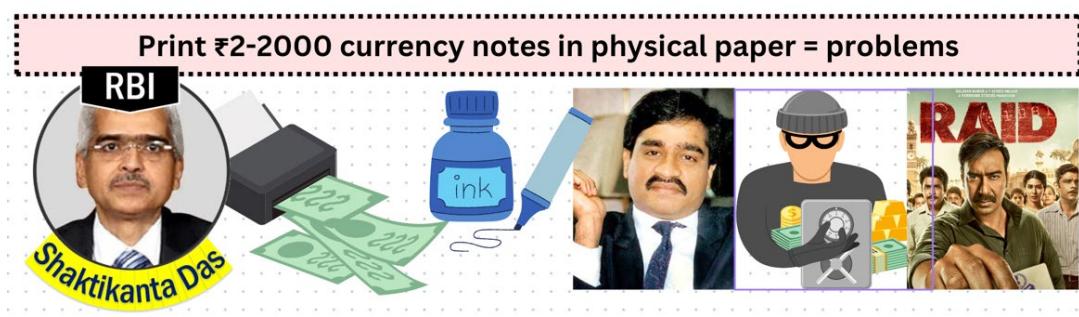
Answer Codes: (a) 1 only (b) 1 and 2 only (c) 2 and 3 only (d) 1, 2 and 3

MCQ. Find correct statement(s) about "Blockchain Technology" [UPSC-Prelims-2020]

1. It is a public ledger that everyone can inspect, but which no single user controls.
2. Structure and design of blockchain is such that all the data in it are about cryptocurrency only.
3. Applications that depend on basic features of blockchain can be developed without anybody's permission.

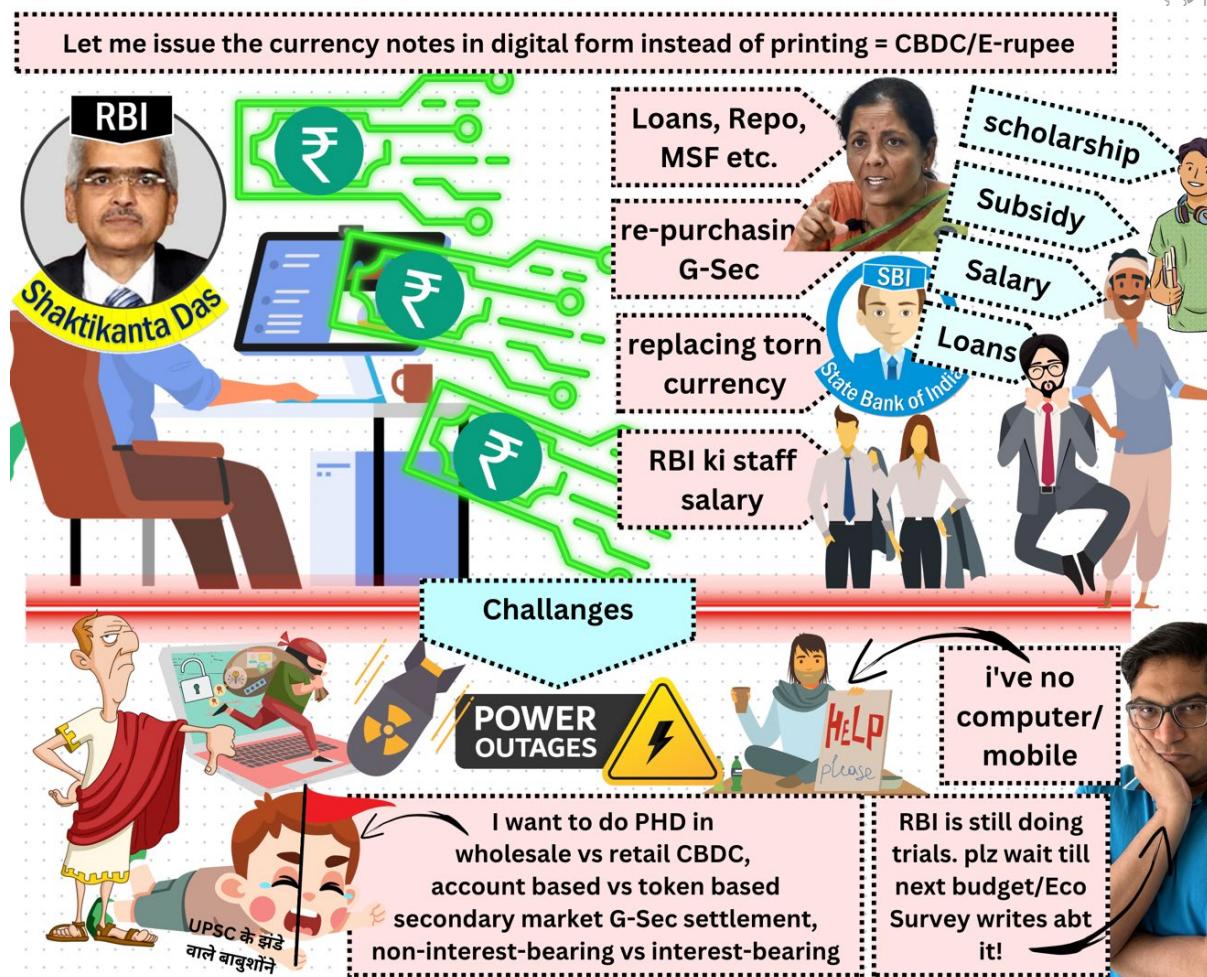
Answer Codes: [a] 1 only [b] 1 and 2 only [c] 2 only [d] 1 and 3 only

10.23 📈 🔒 💰 CENTRAL BANK DIGITAL CURRENCY (CBDC)



केंद्रीय बैंक डिजिटल मुद्रा / संप्रभु डिजिटल मुद्रा

Year	Nation	Paper Currency	CBDC
2020	Bahamas (Capital Nassau) – 1 st nation in the world to issue CBDC##	Bahamaian Dollar BSD	"digital B\$", also called 'sand dollar'. issued Non-Interest Bearing CBDC
2021	Nigeria (Capital Abuja)	Naira	the "eNaira"-Non-Interest Bearing CBDC.



🚩 🎓 🛡 Marshal island launched SOV currency in 2018 then shouldn't we call it the first country to launch CBDC? why above table says Bahamas is 1st country to launch CBDC?

- ⇒ Ans. Big Newspapers using such headlines. I didn't bother to write/ask to their chief-editors. If asked in Exam, then tick MCQ depending on options.
- ⇒ China, Britain, Japan, Singapore, Sweden have also started such experiments.
- ⇒ 🗂️ 📈 Budget-2022 announced issuance of Digital Rupee using blockchain technology).

10.23.1 📈 💳 ₹ Benefits of CBDC (केंद्रीय बैंक डिजिटल मुद्रा के फायदे)

CBDC/ Sovereign Digital Fiat Money / Digital Base Money will provide following benefit

1. 📈 Cost printing and transporting physical currency. (नोट छापने की लागत और परिवहन खर्च में कमी)
2. 📈 Scope for counterfeiting. (जाली नोट बनाना मुश्किल)
3. 📈 Traceability, 📈 Anonymity: (ढूँढ़ना आसान, गुमनाम/अज्ञात रहेना मुश्किल)
 - a. Whether money is reaching the intended beneficiary or not? (लाभार्थी को योजना का पैसा मिला कि नहीं)
 - b. From where did the businessman accumulate this money, did he pay an appropriate amount of tax or not? Else auto-alert to the Income tax department for tax evasion. (करचोरी पर निगरानी आसान)

+ many other things but they are more relevant for Mains rather than Prelims.



10.23.2 🚫 💳 💣 = 🤐 💩 Challenges of CBDC (चुनौतियां)

1. 🚫 Digital Divide, Financial Literacy, Access Points: (डिजिटल उपकरणों की उपलब्धता की खाई, वित्तीय साक्षरता का भाव, डिजिटल भुगतान इस्तेमाल करने के पहुंच बिंदुओं की कमी)
 - a. Not everyone has electronic gadgets or internet connectivity, (सबके पास इंटरनेट नहि)
 - b. Not everyone knows how to operate bank account digitally, (सबको इस्तेमाल करना नहि आता)
 - c. Not every village shopkeeper accepts payments in the digital form. (दुकानदार नक्कड़ी माँगते हैं)
2. 🚫 Cyber Terrorism/Nuclear Attack/Natural Disaster. If electricity stops → economy will stop functioning. (साइबर आतंकवाद / परमाणु हमला / प्राकृतिक आपदा: विद्युत उपकरण बंद तो अर्थव्यवस्था बंद)
3. 🚫 Maintaining the blockchain → 24/7 use of server/electricity → e-waste, pollution. (प्रदूषण)

10.24 ♦ ≠ * NON-FUNGIBLE TOKEN (NFT: गैर-फंजीबल टोकन)



10.24.1 (◻=◻+◻+◻+◻) Fungibility: Meaning?

Item	Can it be subdivided in smaller units?	Is mutual substitution possible in terms of value?	Is it fungible?
₹2,000 Note	Yes ₹500x 4 Notes=2000	Yes ₹500 x 4 Notes can buy same quantity of goods as a single ₹2000 Note	<input checked="" type="checkbox"/> Yes
1kg gold bar	Yes 100gm x 10 biscuits=1kg gold bar	Yes 100gm x 10 biscuits can buy same quantity of goods as a single 1kg gold bar	<input checked="" type="checkbox"/> Yes
1Bitcoin	1BTC=10 ⁸ Satoshi coins	Yes 1BTC's value = 10 ⁸ Satoshi coins. So, theoretically, they buy same quantity of goods	<input checked="" type="checkbox"/> Yes
100 gm single Diamond	Bigger single piece diamond considered to be more precious/valuable than small-small pieces diamond. So, 100gm Single_Big_Diamond =NOT equal 1gm x 100 small_Diamonds, in terms of value		🚫 No
Shares, Bonds	NOT possible (How Ref: Pillar#1C: SEBI sharemarket)		🚫 No
NFT	NOT possible. Explained below.		🚫 No

10.24.2 ♦ Non-fungible token (NFT: गैर-फंजीबल टोकन)

- ⇒ (Definition) NFT is a Digital file photo file (JPEG), Animated image (GIF), music file (MP3) etc Stored using blockchain Technology. ब्लॉकचेन प्रैदौगिकी द्वारा संग्रहित फोटो, संगीत इत्यादि किसी की डिजिटल फाइल है।
- ⇒ NFT may also be used in storing physical assets. E.g. Ownership document of house, boat, physical-painting etc. (इस भौतिक सम्पत्तियों की मालिकी के दस्तावेजों का भी डिजिटल करण कर एनएफटी में संग्रहित कर सकते हैं)
- ⇒ NFT cannot be subdivided. Their individual sub-units cannot be exchanged with one another. Because their values are different based on buyer's preference. So NFTs are non-fungible. (अलग



अलग चित्र/संगीत कृतियों का मूल्य, ग्राहक की पसंद से हिसाब से अलग हो सकता है इसलिए उन्हें छोटे टुकड़ों में विभाजित करना / आपस में उनकी अदला-बदली नहीं हो सकती.)

- ⇒ Mass Hysteria going on to purchase such digital assets from new-age artists using (mostly) Ethereum cryptocurrency. (नए ज़माने के डिजिटल चित्र/धुन के एनएफटी खरीदने का सामूहिक पागलपन चल रहा है.)
- ⇒ e.g. American digital artist Beeple's Painting JPEG auctioned for \$70 million
- ⇒ E.g. Robot Sophia created a digital painting/art "Sophia Instantiation" (NFT) → Auctioned for more than 6 lakh dollar\$.
- ⇒ Many sportsmen, filmstars also creating NFT out of their posters/autographs but we'll not waste preparing all that General Knowledge (GK). (मशहूर स्किलाझी और फ़िल्म अभिनेता भी इसे जारी कर रहे हैं)

10.24.3 ♦️ 🎁 NFT-Charms? (आकर्षण)

- ⇒ 1) Multimedia Creators: Easier to trade digital assets (डिजिटल चित्रकार/धुनकार के लिए कृतियों की बिक्री आसान.)
- ⇒ 2) Easier to verify ownership records. Prevent plagiarism. (संपत्ति की मालिकी/स्वामित्व की जाँच करना आसान। नकलचियों के लिए जालसाजी करना / बनावटी दस्तावेज बनाना मुश्किल.)
- ⇒ 3) Cinema / Sports tournament / Travel tickets etc can be stored with ownership records. Helps in Paperless administration. (सिनेमा / खेल / परिवहन की टिकट की बिक्री डिजिटल स्वरूप से करना आसान, कागज मुक्त प्रशासन.)

10.24.4 ♦️ 🐾 NFT-Challenges: (चुनौतियां)

- ⇒ 1) Started in 2017 → steep price rise in 2021. Single GIF /meme file selling for millions dollar\$ worth of cryptocurrencies. This mass-hysteria / investment-bubble will collapse. Investors will lose money. (ये सामूहिक पागलपन /निवेश का गुब्बारा फट जाएगा तब निवेशकों का पैसा ढूब जाएगा.)
- ⇒ 2) Money laundering & terror Finance. How: Ref Pillar#2. (धनशोधन और आतंकी वित्तपोषण में दुरुपयोग सम्बन्ध)
- ⇒ 4) Maintaining such computer blockchain record → Electricity consumption 🚧 → CO₂ Emission. (इस डेटाबेस का संचालन/वहन करने में बहुत ज्यादा बिजली खपत होती है, जिससे कार्बन डाइऑक्साइड उत्सर्जन में बढ़ोतारी.)

▣ ? MCQ. Find correct statements abt Non-Fungible Tokens (NFTs) (Prelims-2022)

1. They enable the digital representation of physical assets.
2. They are unique cryptographic tokens that exist on a blockchain.
3. They can be traded or exchanged at equivalency and therefore can be used as a medium of commercial transactions.

Codes: (a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3

10.24.5 ✎ Mains Answer Writing

From this particular topic, the Mains angles are centred around - why we should promote digital economy ? what are the challenges? why crypto currencies are bad? how is Blockchain technology useful? what is CBDC? et cetera

- ⇒ This Raftaar-courses deals purely with Prelims and NOT with Mains. So, You've two options:
- ⇒ A) Watch previous [recorded course PCB7 completed between 2022-June to October](#): OR
- ⇒ B) Wait for next course for Mains-specific Economy from 2023-June onwards.

▣ Next Handout: Pillar1A2: Monetary Policy: CRR, SLR, Repo etc.