Date ⇒ 9|09|22

(*) Kahani (short story)

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OE → Civil

Unit 1 :-

Population Growth (PG)
- Birth Rate – (per thousand population per year)
- Death Rate – "
- Immigration Rate –
- Emigration Rate –

* tubectomy (F)
* vasectomy (M)
* Weil (Bisexual / Permanent for H_2O)

(Sub Saharan Country → southern part)

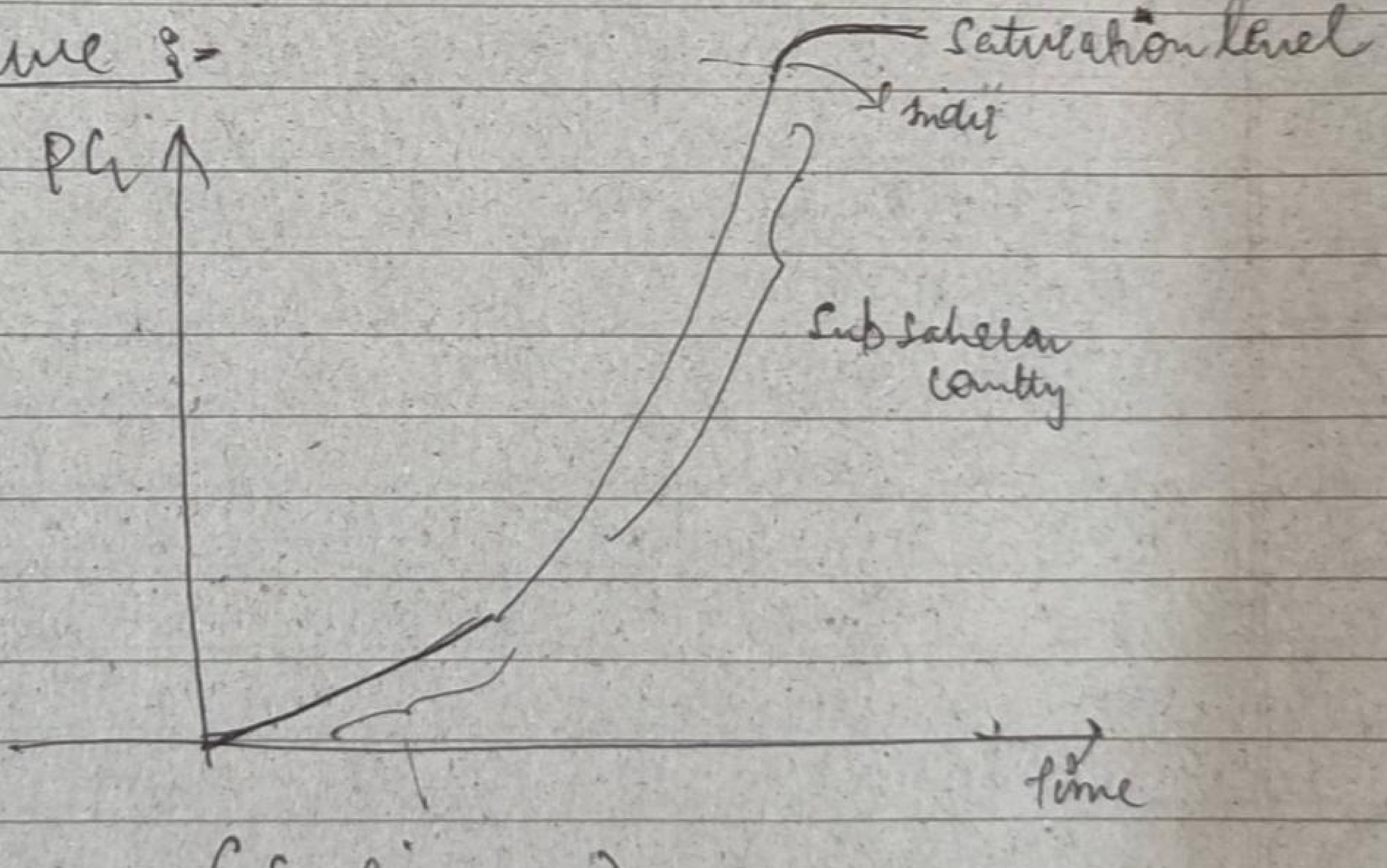
$$PG = [(BR + IR) - (DR + ER)]$$

↳ (Birth Rate)

Q ⇒ (India population Growth is much less then Sub Saharan country) ; B.R ⇒ 1.57

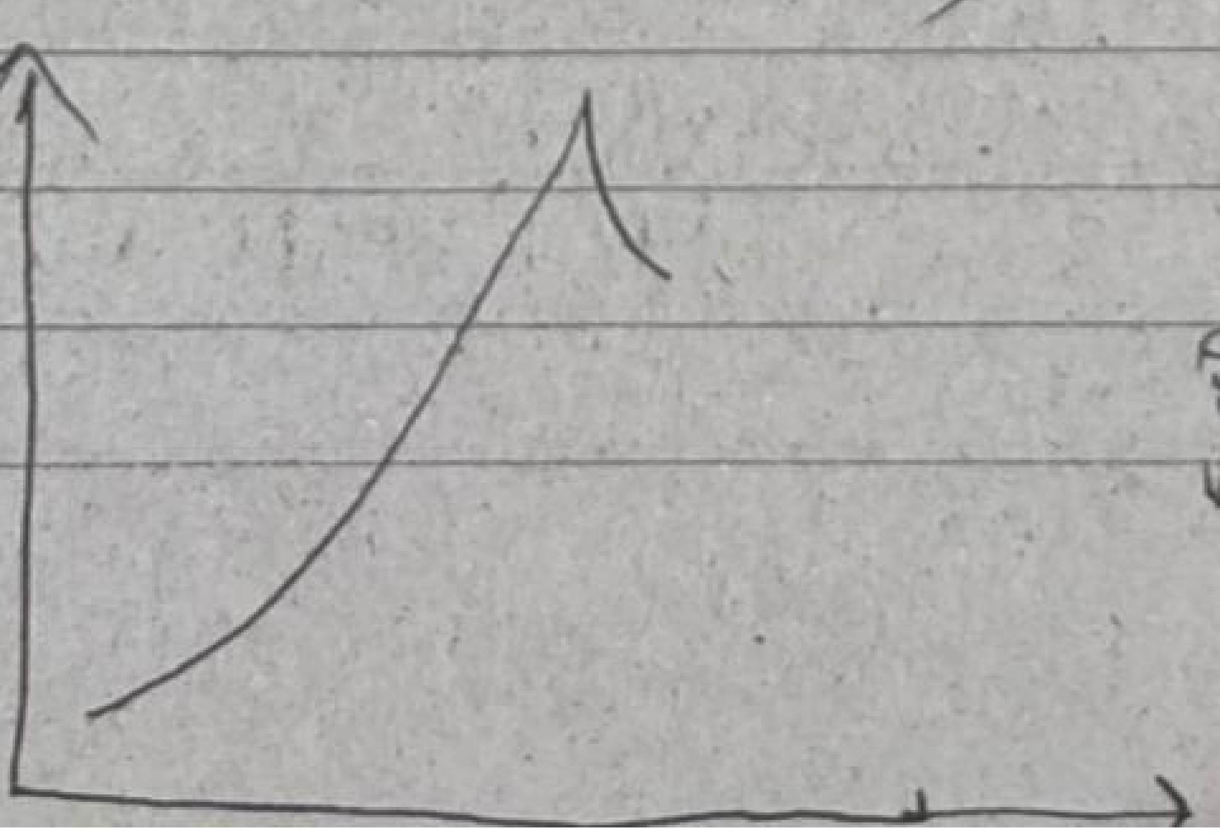
Q ⇒ Australia population ⇒ 1.8 Cr - population.
"We add Australia every year";

(*) PG Curve :-



$\frac{2}{3} \times 100$

(S-Curve)



Eg → (Insect flies after rainy time)

J curve (Pop. ↑ all of sudden and decrease drastically)

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* Population Growth :-

Region	BR	DR	
Africa	22	9	11
developing	11	10	1
(Developed)	25	9	16
Asia	38	14	24
N. America	14	9	5
(Europe)	10	11	-1
Asia	22	8	14
South Am.	24	6	10

Stationary phase

→ Tribes (Shewtinel and shompen)

⇓

Andaman & Nicobar Island

(*) 1) 16.9 % world population
2) 9.40 % a
3) 305 pels/km² Pop. density — 1993 → Non pelson residing in/km²
415 pelsons/km² — 2025

* - Reasons of Population Growth

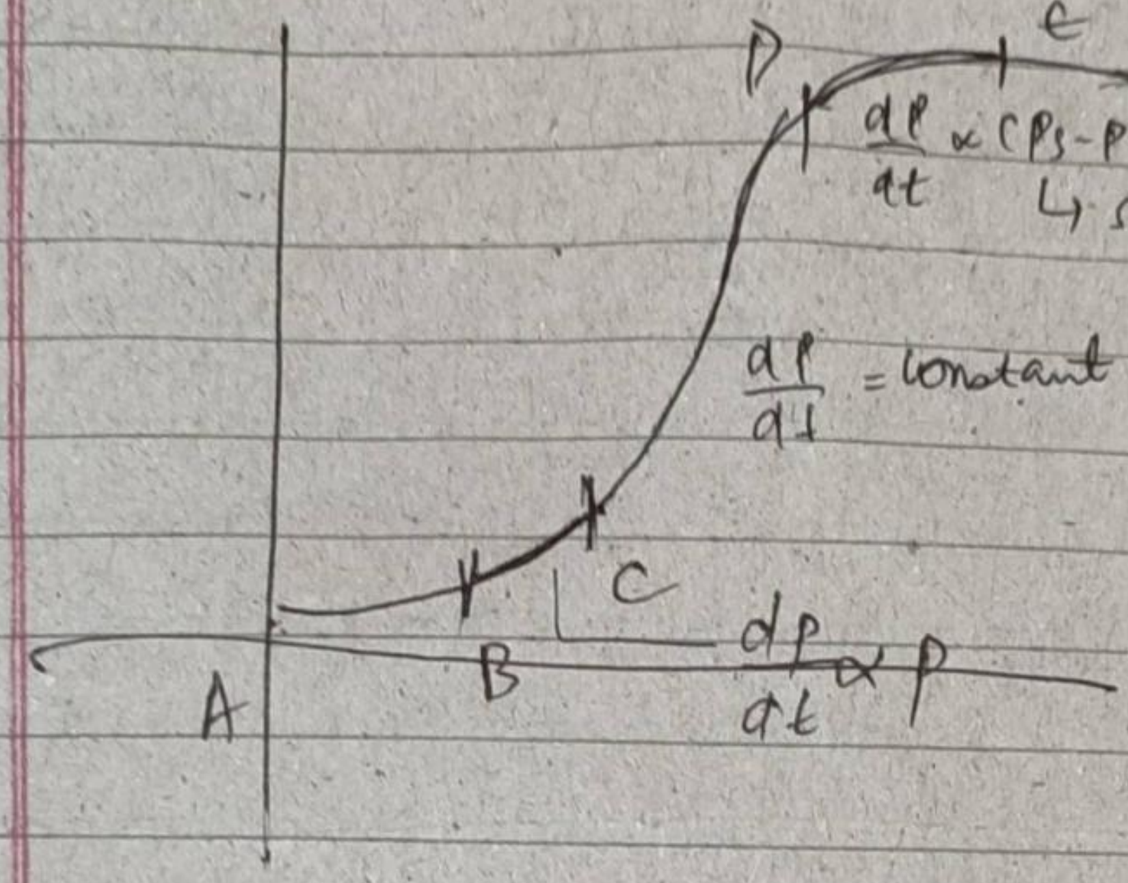
a) Early puberty
b) Early marriages
c) Social pressure for desire of male child
d) Hesitation in adoption of family planning measures
e) Polygamy
f) Improved health care
g) Diff B/w BR and DR

- Tubectomy (F)
- Vasectomy (M)
- MTP.

tubectomy - Fallopian tube

Vasectomy - Vasadifference cut

MTP - Medical termination of pregnancy (Abortion)



AB - lag phase

BC - -

CD - accelerated rate

AB - lag phase

BC - true accelerated

CD - exponential phase

DE - (-ve) accelerated phase.

EF - Stationary phase

AC -

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* Climate change- IPCC (Inter governmental panel on climate change)

Reasons ← Anthropogenic
Monsoon.
Phenomena ← El Nino * indices
La Nino index.

→ Initiatives to control climate change :-

* UNFCC - united Nation framework on climate change.

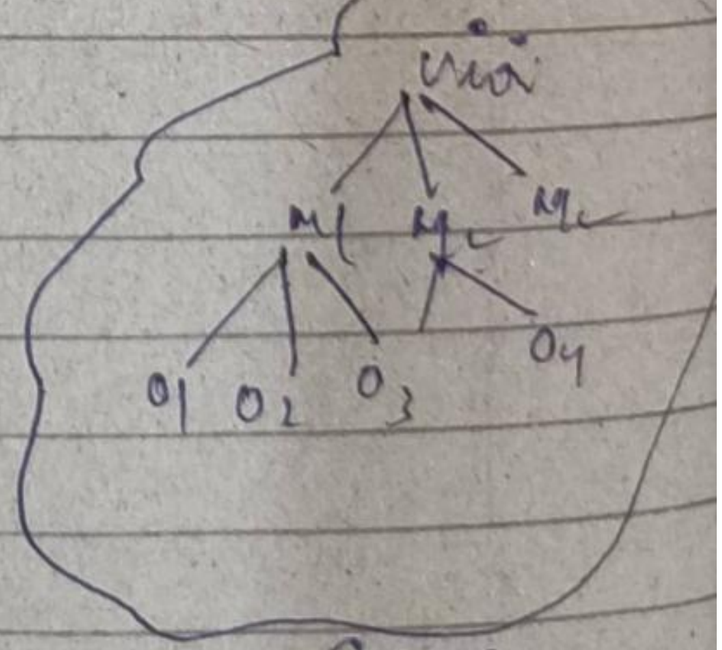
Stockholm
↓
Capital of sweden

CoP (Conference of Parties) - Berlin
CoP2 - Genava (Switzerland)
CoP3 - Kyoto.
CoP4 - Capital of.
CoP5 -
CoP6 -
CoP7 - Morocco
CoP8 - India
↓
CoP

Brazil Conf.
↓
Rio de Janeiro

* Rio Earth summit

latest CoP25 - Glasgow.



SDG
* Substainel development goals -

7-Fr
8-Sa
9-Su
10-M

* Learn about CoP3 - Kyoto.
→ Emission trading

* Cap and Trade

* NAPCC :-
National action Plan on climate change
↳ June 8th 2008

(SDG-6- Issues of water and sanitation problems)

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NAPCC

Missions

1) Mission for solar mission
2) Enhanced energy efficiency.
3) Substainable habitat.
4) Substainable agriculture.
5) Water mission.
6) Mission for Green state
7) Strategic knowledge mission
8) Mission for sustaining Himalaya ecossystem.

60x40

2400

#UNFCC

#NAPCC

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Deepest pt on earth ⇒ Mariana trait.

Biosphere

ecosystem

Ecology -

Unit 2

Water Pollution

Physical
- pH
- Temp.
- Smell
- Odour
- Taste

Chemical
- Heavy metals
- Alkane
- Acidity
- Minerals
  - Metal
  - Nonmetal
- Organic
- Hardness

* Chromium is used in tannery

* Iron

Sources -
- * Fluoride.
- * Nitrate.
- * Chromium.

* Minamata bay - Incident
  ↳ Death of thousand of fishes.

* n

OE ⇒ 04/11/22

Water pollution :-

Before WP, GWP water pollution

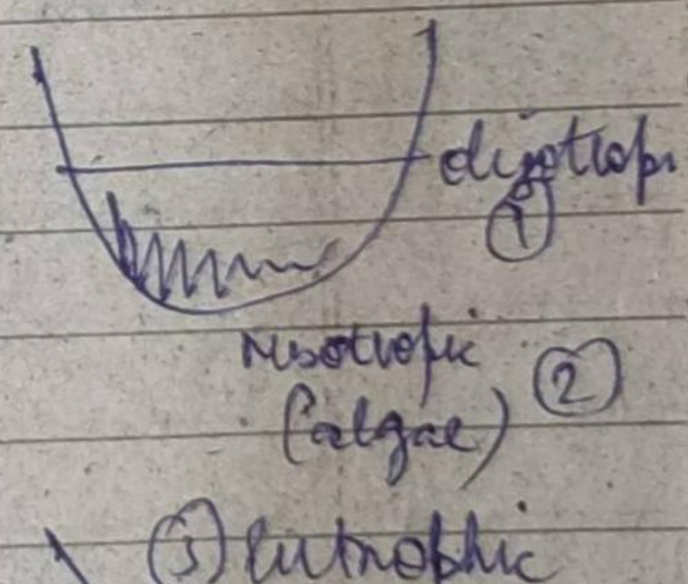
* Sources — Physical, Chemical, Biological.

Nitrate contamination

Classification :-

* Eutrophication — Lakes (Process of Natural aging of lakes)

a) Oligotrophic
   → No Pollution
   → No N & P & clear Lake



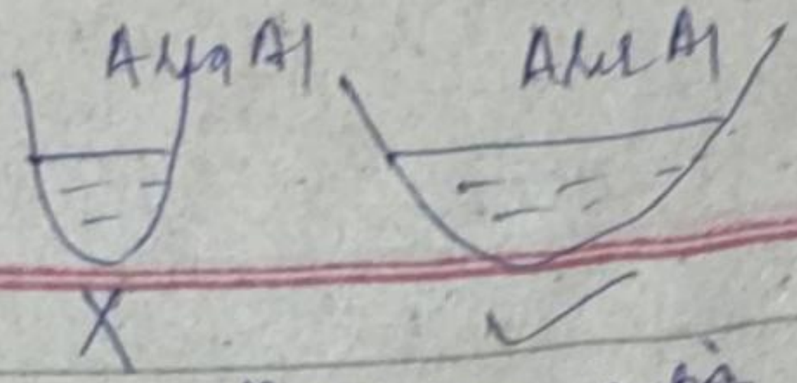
b) Water hyacinth

These all are stages of time of lake
1) Oligotrophic
2) Mesotrophic
3) Eutrophic
4) Marshy (Swamp)

Organic :- BOD, COD

* Dissolve of O_2 - Health of water Bodies

BOD - Biochemical oxygen demand
COD - Chemical Oxygen demand
DO - Dissolve oxygen.



Below cross section

* Hydrogeometery :-

*

BOD - Amt of O2 to oxidise organic matter present in waste water.

COD - Amt of O2 required to oxidise organic/inorganic matter present in water.

Longitudinal profile of Dissolve Oxygen :-

* Streeter & Phelps (1925)
↳ Ohio River

$\frac{dt}{dt} \propto \int t$

$\Rightarrow dt$

$\Rightarrow$

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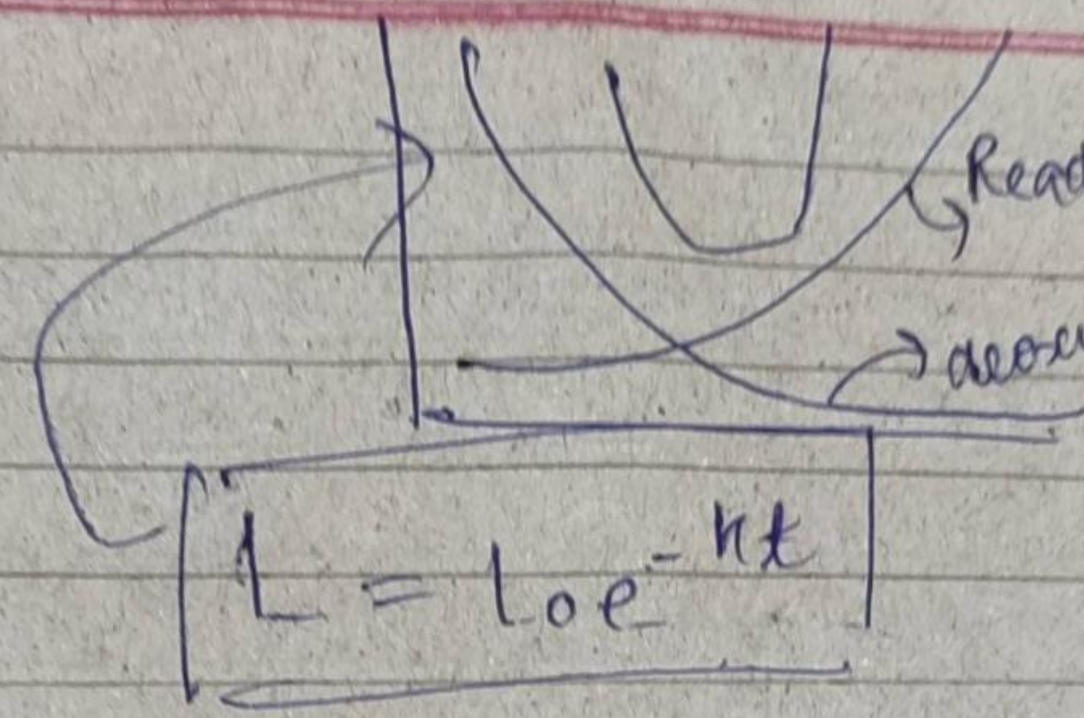

$$L = L_0 e^{-kt}$$

Date:⇒ 9/11/22

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OE

(MPN/100ml sample)

#WaterBodies

#CPCB — Headquater Delhi → (MOEF & CC)

- State Dept.
- ** Water Bodies in 5 classes :-

DO
BOD
↑
effect on water Bodies

1) Drinking water

	DBU	Class	Criteria
1)	Drinking water w/o Conventional source	A	DO ≥ 6 and BOD ≤ 6. NPN ≤ 50. 6.5 ≤ pH ≤ 8.5.
2)	Organised outdoor	B	DO ≤ 5 ; BOD ≤ 3 MPN per 100ml < 500, pH 11
3)	Drinking water with Conventional source	C	DO ≥ 4 ; BOD ≤ 5.5 MPN ≤ 5000 ; 6 < pH < 9.
4)	Wildlife propagation	D	pH : 6.5 to 8.5, DO ≥ 4 BOD ≤ 2; Ammonia N ≤ 0.2
5)	Irrigation industry & controlled disposal of waste	E	pH - 6 to 8.5 ; EC - 2.25 micro moles/cm. SAR ≤ 25 ; Boron ≤ 2 ↓ sodium absorption Ratio

↓

(Classification of SWR Based on Designated Best & use criteria)