

UPSC TOPPER'S COPY AIR 98

To be filled by the Candidate

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Date of the Exam : 3/July/2022



Time allowed : Three Hours

GEOGRAPHY

Sectional Test - I

Complete Section - A (Paper-I)

Maximum Marks : 250

General Instructions

This Question-Cum-Answer (QCA) Booklet contains 74 pages. Immediately on receipt of the Booklet, please check that this QCA Booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA Booklet. Candidates must read the instructions on this page and the following pages carefully before attempting the paper.

Candidates should attempt all questions strictly in accordance with the specified instructions and in the space prescribed under each question in the Booklet. Any answer written outside the space allotted may not be given credit.

Illustrate your answer with suitable sketches/maps and diagrams, wherever considered necessary. These shall be drawn in the space provided for answering the question itself.

Question paper in detachable form is available at the end of the Question - Cum-Answer Booklet (QCA) and can be removed and taken by the candidates after conclusion of the exam.

There are **EIGHT** questions divided in two **SECTIONS**

Candidate has to attempt **FIVE** questions in all.

Questions no. **1 and 5** are compulsory and out of the remaining, **THREE** are to be attempted choosing at least **ONE** from each section.

The number of marks carried by a question/part is indicated against it.

Name MUSKAN SRIVASTAVA

Topic Sectional Test - I Complete Section - A (Paper-I)

Examination Date 03/07/2022

Candidate Signature

Muskan

DIR.-GEO-JULY.(I)-2022

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Important Instructions

Candidates should read the under mentioned instructions carefully. Violation of any of the instructions may lead to penalty.

DON'TS

1. Do not write your Name or Roll Number or Serial No. of Question-Cum-Answer Booklet anywhere inside this Booklet. Do not sign the "Letter Writing" questions, if set in any paper by name, nor append your roll number to it.
2. Do not write anything other than the actual answers to the questions anywhere inside your Question-Cum-Answer-Booklet.
3. Do not tear off any leaves from your Question-Cum-Answer Booklet. If you find any page missing, do not fail to notify the Supervisor/Invigilator.
4. Do not write anything on the Question Paper available in detachable form or admission certificate. Write answers at the specified space only.
5. Do not leave behind your Question-Cum-Answer Booklet on your table unattended. It should be handed over to the Invigilator after conclusion of the exam.

DIRECTION IAS

TEST - 1

GEOGRAPHY

Question Paper

Time Allowed : Three Hours

Maximum Marks : 250

SECTION- A

- Ques. 1.** (a) What are the characteristics of Fumaroles and Geysers?
(b) Describe adiabatic changes in air.
(c) What are the conducive conditions for growth of Tidal bores?
(d) What is homeostatis in ecosystem?
(e) What are Epiphytes? Identify their types
- Ques.2** (a) Explain metamorphism. Give brief account of its types.
(b) Distinguish between fundamental and realised niche.
(c) Examine the formation mechanism of continent margins.
- Ques.3** (a) What is Barysphere? Also identify sources that provide knowledge about it.
(b) In light of fundamentals of zoogeography identify animal dispersal factors and types.
(c) Explain the determiners' of surface current system.
- Ques. 4** (a) Examine validity of Tetrahedral hypothesis in explaining origin of continents and oceans.
(b) "Radiation management can be keystone in climate change mitigation", comment.
(c) In light of determiners, identify importance of density as important physical property of sea water.

SECTION- B

- Ques. 5** (a) Write short notes on constructive and destructive waves.
(b) Elaborate on atmospheric stratification based on composition.
(c) Discuss nadir and zenith tides.
(d) What is lake effect snow?
(e) Describe benthos community and their characteristics
- Ques. 6** (a) "Arthur Holmes was far ahead of his time in explaining diastrophism" Comment
(b) Define solar constant. Explain primary determiners of insolation distribution.
(c) What is Southern Oscillation Index? Outline it's effect on tropical weather.
- Ques. 7** (a) What are marine pollution types& causes? Also outline abatement measures.
(b) Explain origin of rainfall, along with its types.
(c) Briefly explain characteristics of sclerophyll biome and present account of challenges faced by it.
- Ques. 8** (a) What is manufactured sea water? Outline likely detrimental effects of it.
(b) Explain position of doldrums and mechanism of equatorial westerlies.
(c) What is ecosystem management? Identify its components.
-

COMMENTS /REMARKS

Marks Given

Question
1 - 8 Overall Marks

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You have written
ans very well

Work on building
up of content -
as advised in
few questions

Write Short notes, within 150 words each, on the following ;

10x5=50

Que.1.(a)

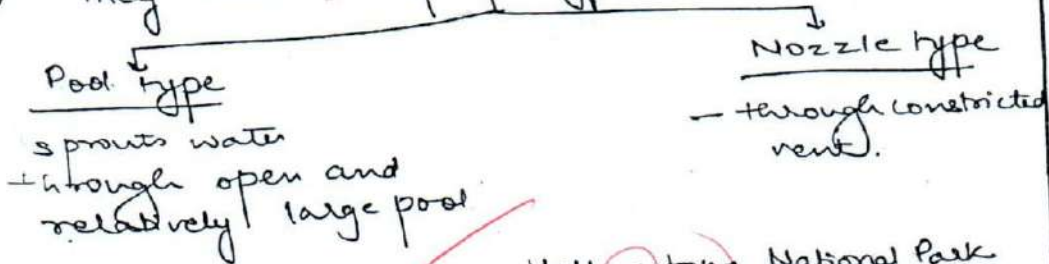
What are the characteristics of Fumaroles and Geysers?

Candidate should not write anything in the margin

fumaroles and geysers are 'phreatic' type of eruptions whose driver is steam.

Characteristic of Geysers

- ① They are special type of hot spring that sprouts hot water and vapour from time to time
- ② They can be of 2 types

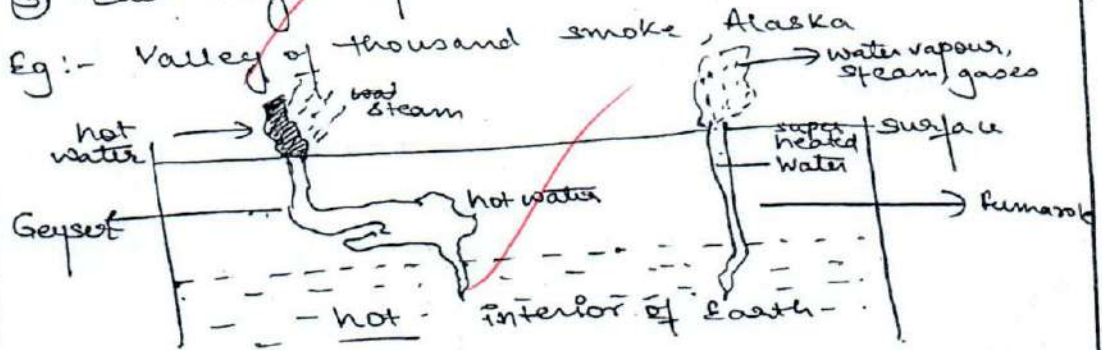


Eg: Old faithful geyser, Yellowstone National Park

OS

Characteristics of fumaroles

- ① Phreatic eruption that ejects steam, gases and little amount of water
- ② Vent-type
- ③ Last signs of active volcano



Que. 1(b) Describe adiabatic changes in air.

10marks

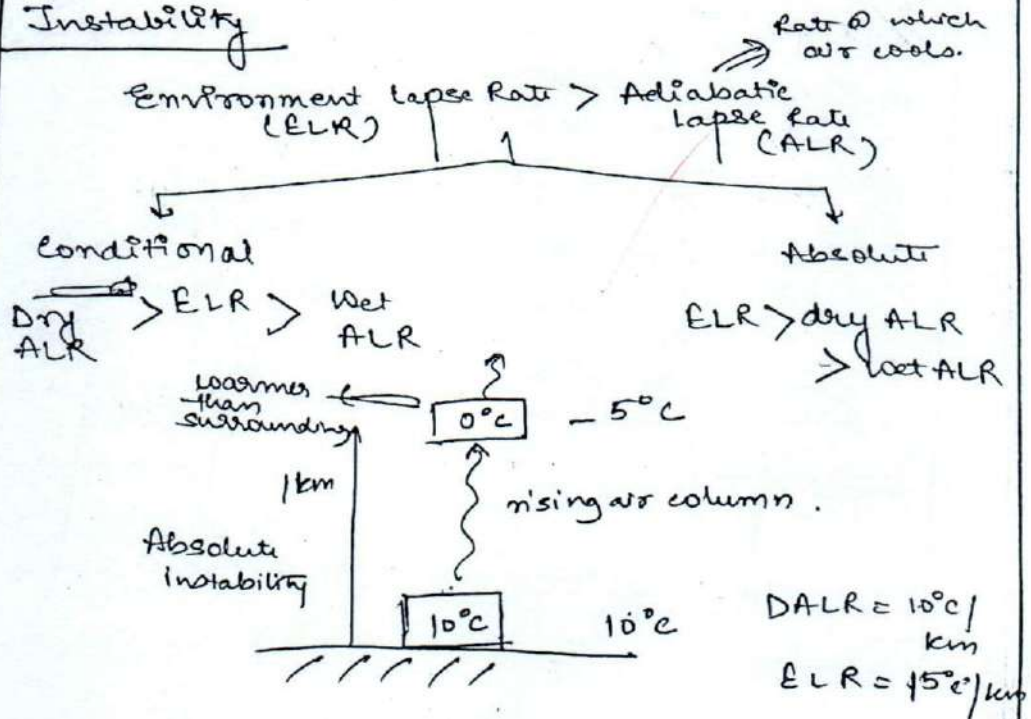
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Adiabatic changes in air occurs due change in volume or pressure resulting into change in temperature of the air without addition ~~or~~ or removal of heat ~~to~~.

Adiabatic changes generally occurs due to rising or subsiding air convection. when air rises \Rightarrow adiabatic cooling
air subsides \Rightarrow adiabatic heating.

Adiabatic changes are related to instability and stability in the atmosphere.

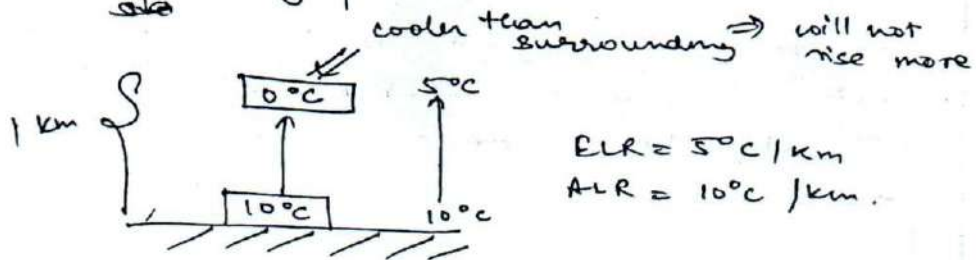
Instability



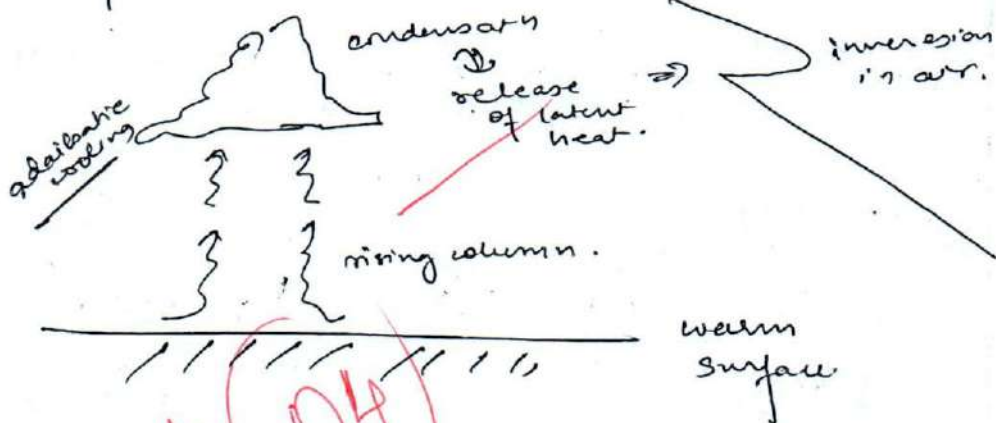
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Stability

- Ⓐ When subsiding air column is experienced
- Ⓑ when rising pauses due to $ALR > ELR$.



Adiabatic changes in air also results into temperature inversion.

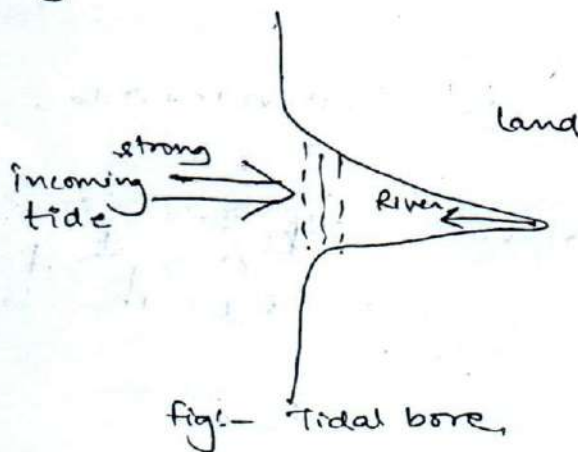


Details 04

Que. 1(c) What are the conducive conditions for growth of Tidal bores?

10marks

A tidal bore is a wall of water that surges upriver with the advancing high tide.



Conditions for growth of tidal bore

- ① Narrow outlet to sea.
- ② Estuary or where the river meets the sea, must be wide and flat
- ③ Coast's tidal range (difference between in high tide and low tide) must be more than 6mts
- ④ strong tidal current
- ⑤ strong supporting wind to the tides

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Candidate should not write anything in the margin

⇒ There are exceptions. Amazon river drains into Atlantic Ocean forms tidal bore. though its mouth is not narrow.

⇒ Tidal bore develops here because the mouth is shallow and dotted by many low-lying islands and sand bars.

eg. Tidal bores are unpredictable.

eg Example of tidal bore : eg Batang River in Malaysia forms tidal bore everyday.

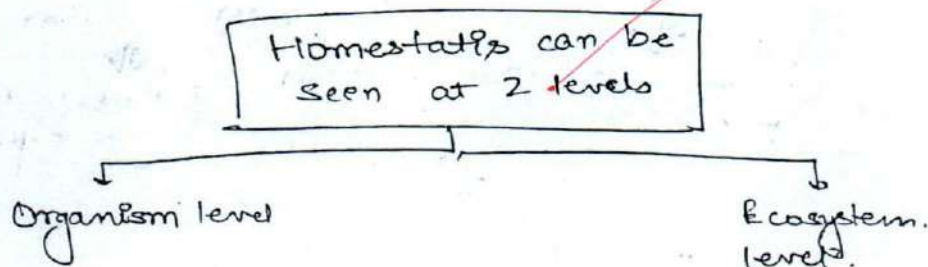
Tidal bore if used effectively can come in handy for generation of renewable energy

egs are required

Que. 1(d) What is homeostats in ecosystem?

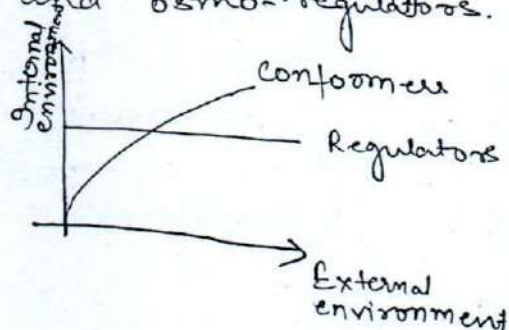
10marks

The natural environmental system has in-built self-regulating mechanism known as homeostats. Homeostats at ecosystem level can be seen in Lovelock's ~~Gaia~~ Gaia hypothesis which states "biosphere and other spheres are related to form complex interacting system, that tends to maintain climatic and biochemical condition as feedback reaction."



Organism level

- * Some organisms have adaptation which they maintain internal environment inspite of variation in external environment.
- * These type of adaptation is based on idea of homeostats
- * These organisms are known as 'regulators'
- * Two types of regulators - thermo regulators and osmo-regulators.



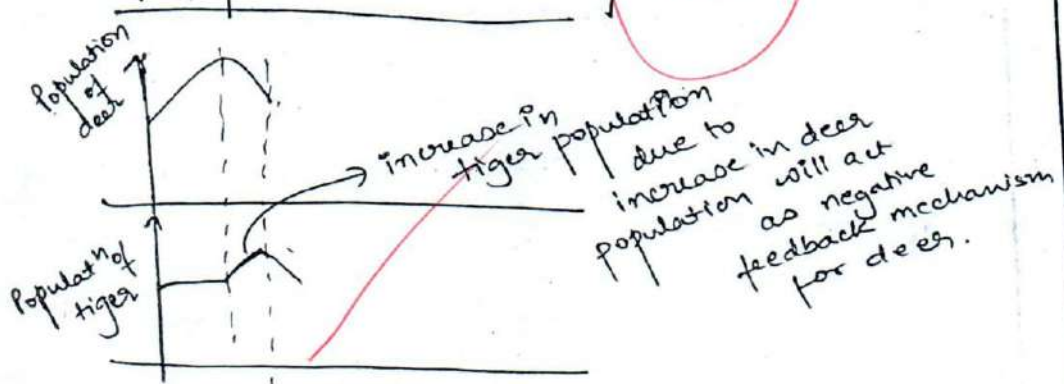
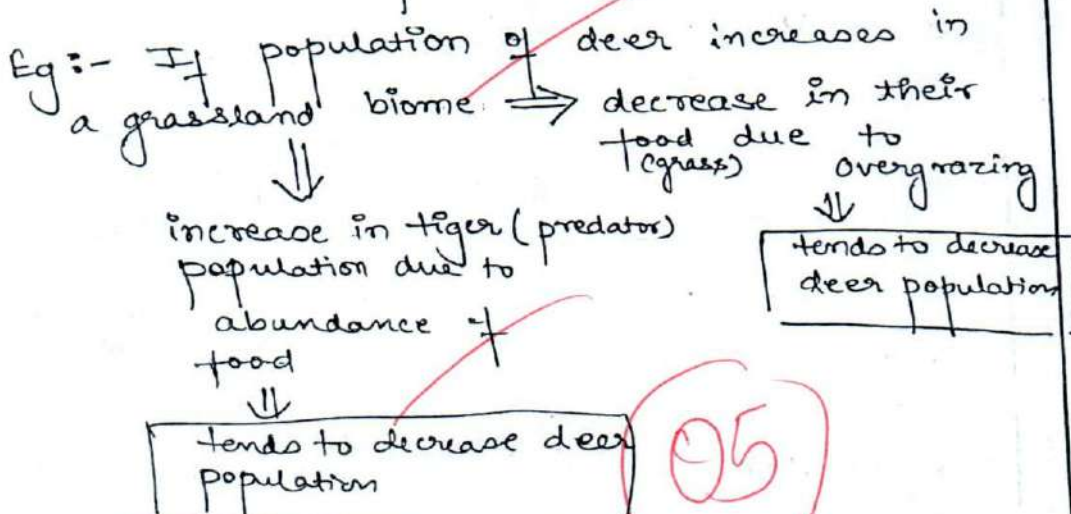
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* Regulators are 'every' organisms.
Eg:- humans

Homeostats at ecosystem level

Physical and biological processes of the environmental system operate in such a way that any change in any part of environment at any place at specific time is suitable compensated by negative feedback.

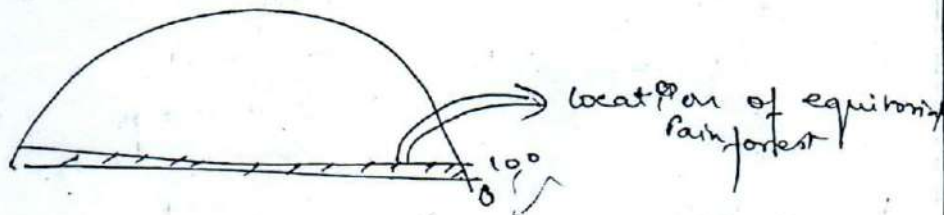


Phenomenal increase in human population and development in technology has degraded environment to such an extent, that homeostatic ability of the Earth has been compromised.

Que. 1(c) What are Epiphytes? Identify their types

An epiphyte is a plant growing on other plants. Epiphytes are known as 'air plants' because they may not be anchored in the soil.

Epiphytes are a common feature of Equatorial Rainforest.



Types of epiphytes

① Creepers

⇒ belongs to categories of vines :

⇒ string to cable-like form.

⇒ cover the floor of the rainforest densely

② Climbers

PW Richards divided into further categories:

(a) Climbers of the lower strata of foresty including herbaceous plants

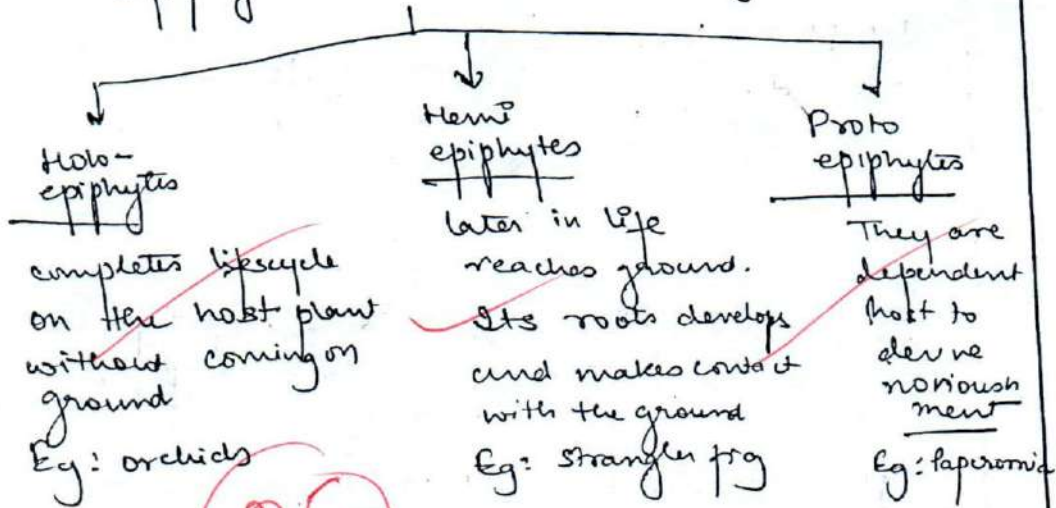
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⑤ long woody climbers known as lianas are found in all stratas.

⑥ epiphytes that do not have roots on the ground surface ⇒ evolve on trees, trunks, stems etc.

Epiphytes can also be categories as



06

Que. 2. (a) Explain metamorphism. Give brief account of its types.

20marks

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The conversion of existing rocks under immense temperature and pressure so that change in properties occur, this is known as metamorphism

The resultant type of rocks is known as metamorphic rocks

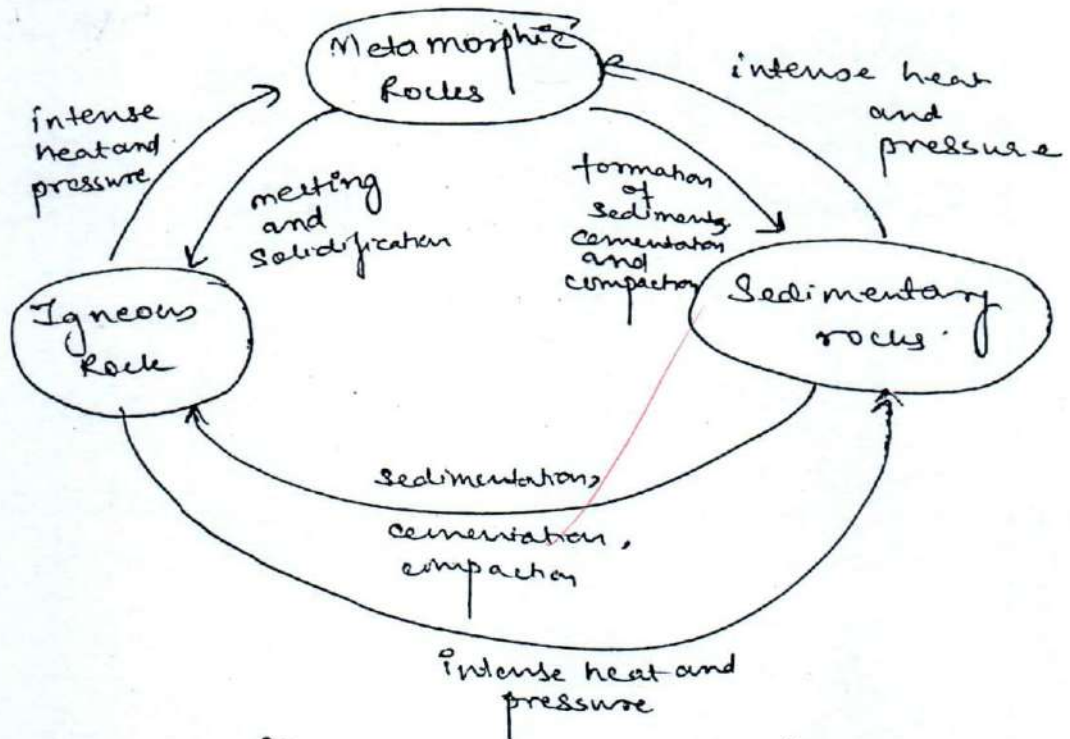


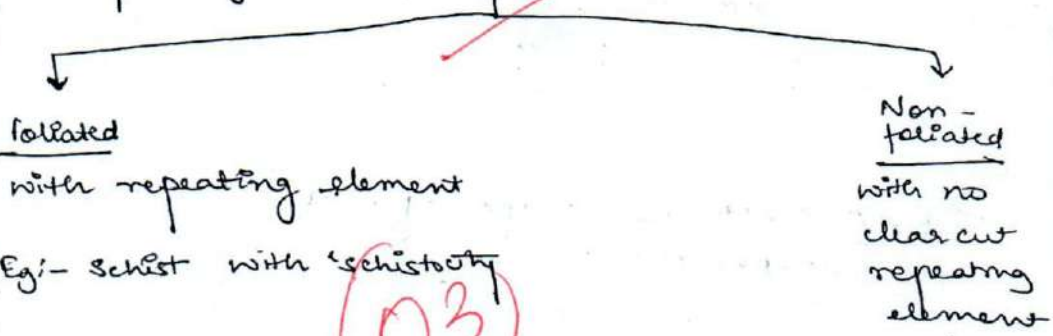
fig:- Rock Cycle explaining Metamorphism

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Metamorphic Rocks types

They can be stratified or non stratified, fossiliferous or non-fossiliferous.

They are classified based on existence of ~~planar~~ 'repeating' planar element



Eg:- Schist with schistosity

Eg:- Diamonds

Grade of meta to be included

(03)

Que. 2. (b) Distinguish between fundamental and realised niche.

15 marks

Grimmell coined the term 'niche' which means the functional role and position of an organism in a community.

Hutchinson is credited for defining fundamental and realised Niche.

Differences between fundamental and realised niche

① Presence of ^{other} organisms :

Fundamental niche is the niche of an organism in ~~its~~ isolation or there is no limiting factor whereas Realized niche is the role of organism in an community.

② Competition

Fundamental niche is pre-competitive niche and realised niche is post-competitive niche.

③ Concept:

Realized niche is the practical counterpart of the theoretical concept of fundamental niche.

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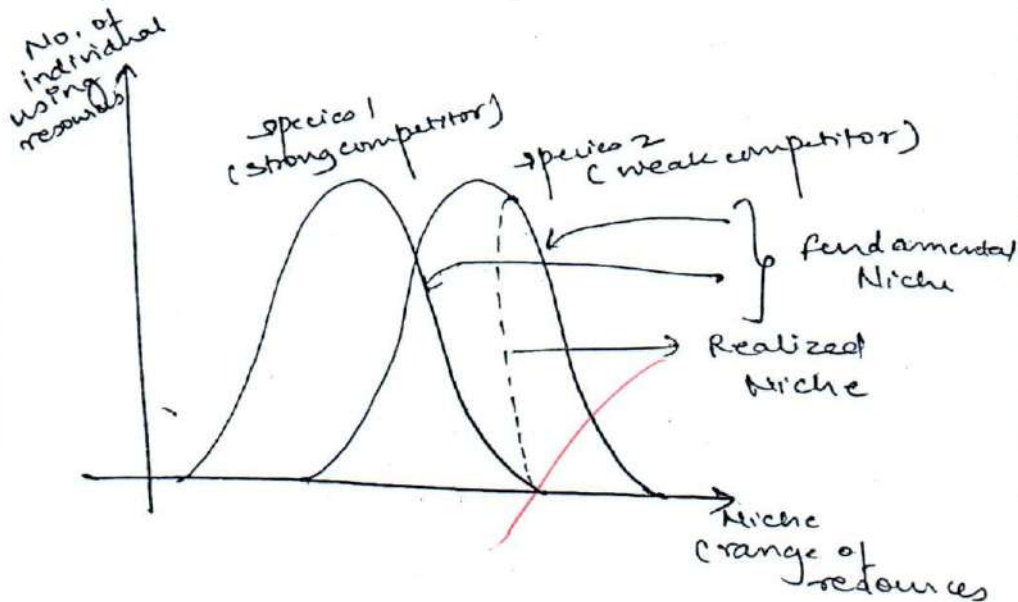
④ Size

fundamental niche is larger ⁱⁿ than size than realized niche

⑤ Action of species

fundamental niche elaborates what various ~~the species~~ roles the species can perform

Realized niche elaborates on what the species actually does in an ecosystem.



Eg:- Male red-winged blackbird holds prime locations in marshes in early spring (fundamental niche).

However, with seasonal progress, tri-color blackbird with more aggressive move, into the marshes displacing red-winged ones (Realised niche)

Candidate should not write anything in the margin

The main difference between fundamental niche and realized niche is where the species live, and environmental pressure in terms of limiting factors, resources etc.

Good



Que. 2.(c) Examine the formation mechanism of continent margins.

15marks

Candidate should not write anything in the margin

Continental shelf and continental slopes are in combination known as continental margins.

Continental Shelf

Formation mechanism can be of following 5 types

① Eustatic :

⇒ generated by rise in Mean Sea Level post ice-age

⇒ most important mechanism to generate continental shelf

⇒ depth of 200 mt

⇒ globally diminishing
Eg:- George bank

② Tectonic

due to endogenetic forces such as faulting due to continent drift

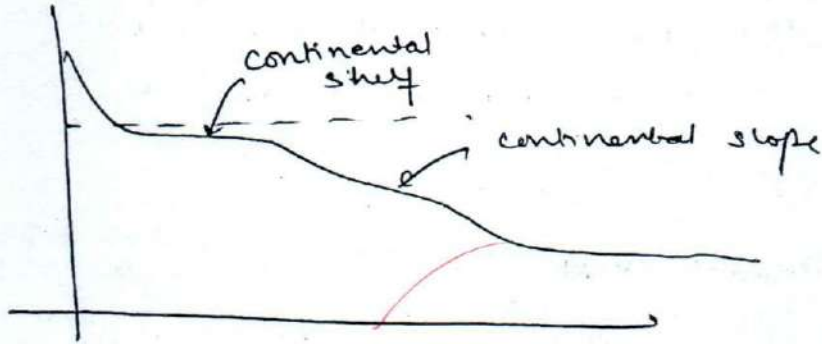
Eg:- western continental shelf of India.

③ Erosional : marine erosion of continental margins when there is negative change in sea-level. This mechanism belongs to the concept of glacial control theory

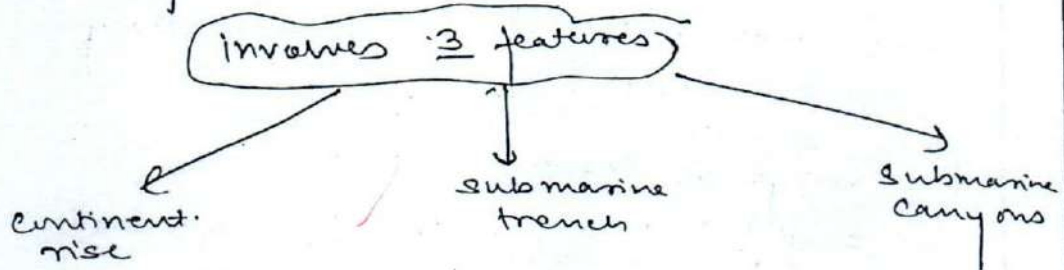
④ Depositional : formed due to prolonged deposition of detritus brought by rivers. formed in calm area.

Candidate should not write anything in the margin

⑤ Isostatic : formed due to isostatic readjustment



The ~~slope~~ zone of steep slope extending from continental shelf is known as continental ~~slope~~ slope



formation of continent rise

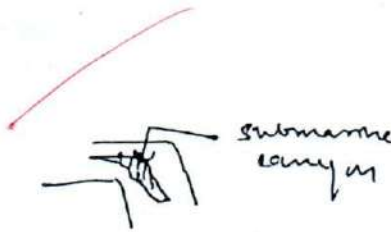
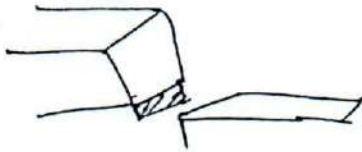
at foot of slope, amount of deposition is less. texture is fine.



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Formation of submarine trenches

* tectonic origin explained due to sea floor spreading theory and plate tectonics theory



Submarine Canyons

origin

Earlier theories ⇒ diastrophic theory, sub-aerial erosion theory

Current theory ⇒ Turbidity current theory

Well framed turbidites are mobile shelf deposits transported by turbidity currents ~~are submarine water~~ act as abrasional agent develops canyons.

09

Need to be improved

Write notes, within 150 words each, on the following ;

10x5=50

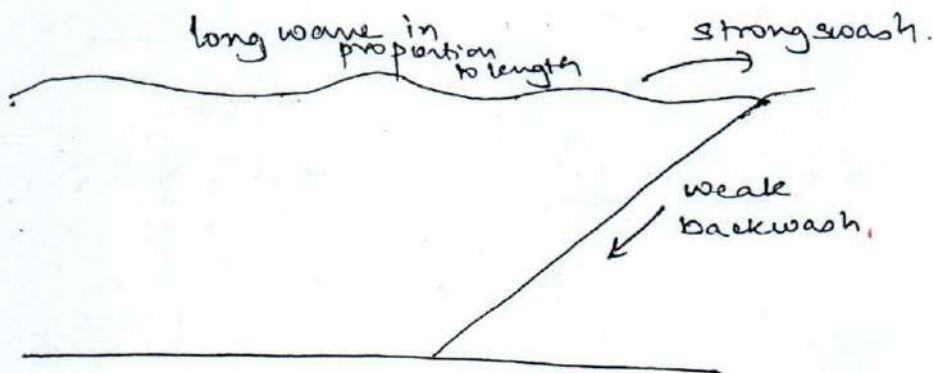
Que. 5 (a)

Write short notes on constructive and destructive waves.

Destructive waves are usually found in more exposed bays, where they build pebble beaches. Constructive waves are more common in gentle sloping coastal areas.

Constructive Waves

- ⇒ have a strong swash and a weak backwash
- ⇒ deposition is dominant.
- ⇒ low frequency ⇒ ~~8~~ 6 to 8 waves per minute



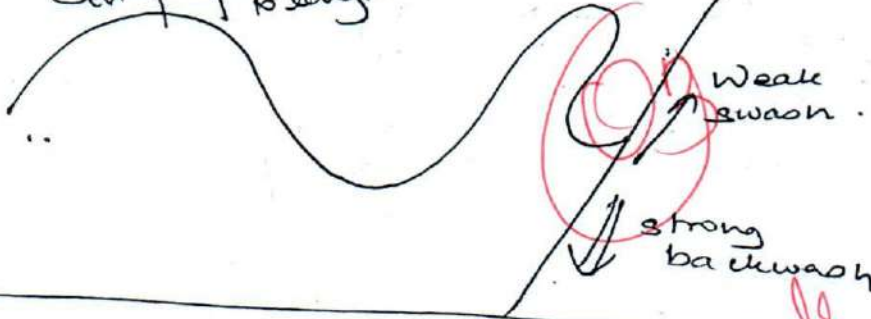
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Destructive waves

- ⇒ have a large wave height and short wavelength
- ⇒ tall breakers that have a high downward force and strong backwash
- ⇒ their frequency is high between 13-15 waves per minute.
- ⇒ strong backwash results into narrow beach profiles

high wave in proportion to length



a tall breaker: it breaks downward with great force.

Weak swash

strong backwash

add erosion depth

in details

Que. 5. (b) Elaborate on atmospheric stratification based on composition.

10marks

Based on chemical composition, atmosphere is stratified into 2 layers \Rightarrow Homosphere and Heterosphere.

Homosphere \Rightarrow the composition of the gases remain more or less constant

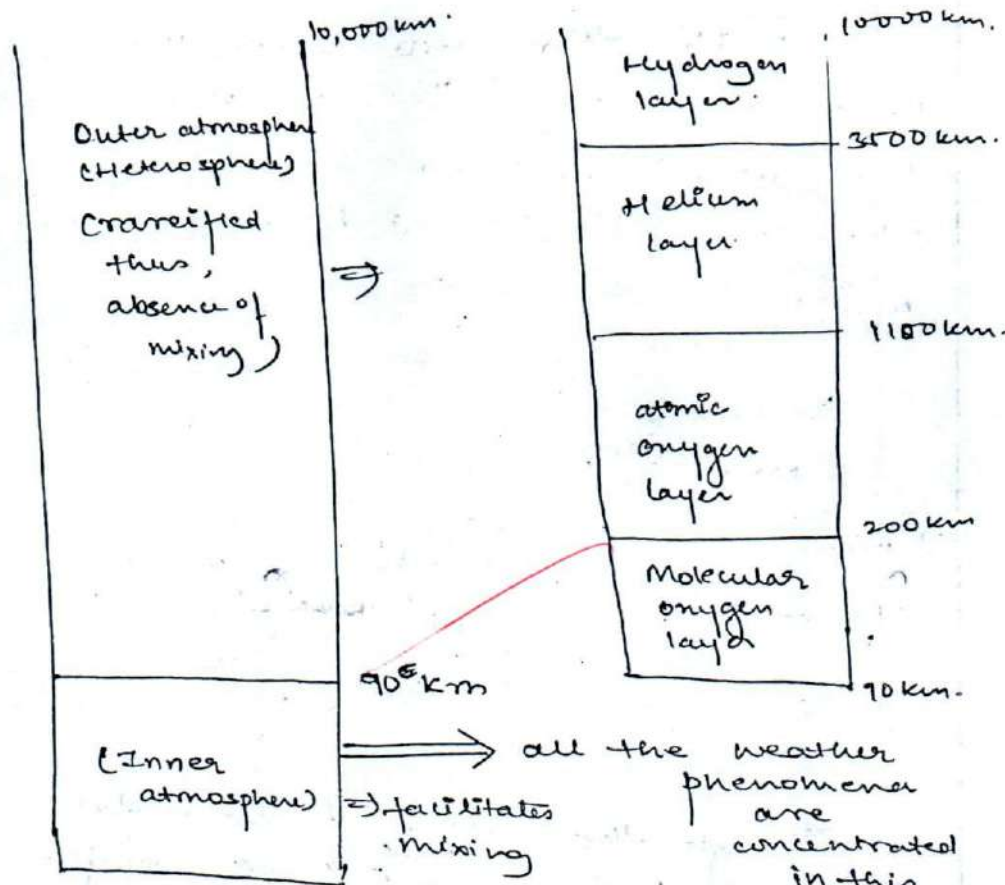
On average, constitution of 'of atmosphere remain as follows :-

	N_2	\rightarrow	78%	
	O_2	\rightarrow	21%	water vapour \downarrow trace variable constituent gas. (0-4%)
	Ar	\rightarrow	0.9%	
Variable	* CO_2	\rightarrow	0.04%	
	* CH_4	\rightarrow	0.002%	
	Ne	\rightarrow	0.0018%	

Heterosphere \Rightarrow outer atmosphere where the composition of atmosphere varies drastically

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Candidate should not write anything in the margin



all the weather phenomena are concentrated in this layer - due to availability of some trace material such as water vapour, aerosols, O₃ and CO₂

The composition of CO₂ in atmosphere in present time has become utmost importance. In the wake of naturally occurring global warming where CO₂ man-made emissions are increasing its concentration. This gas has detrimental effect on biosphere.

Que. 5. (c) Discuss nadir and zenith tides.

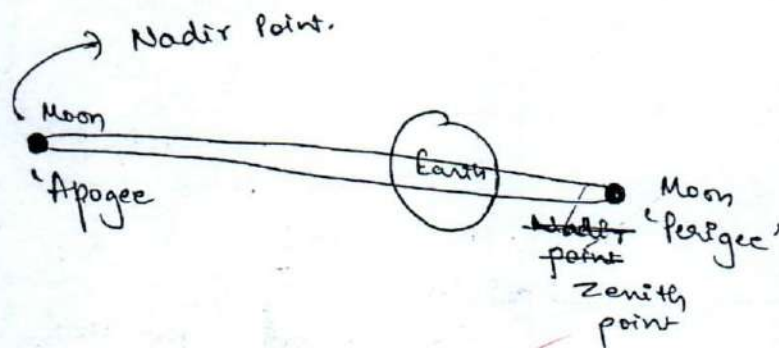
Page - 42

DIRECTION

10marks

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Nadir tides occur when the gravitational force of moon is the minimum over the surface whereas zenith tide occurs when the gravitational force of moon is the maximum.

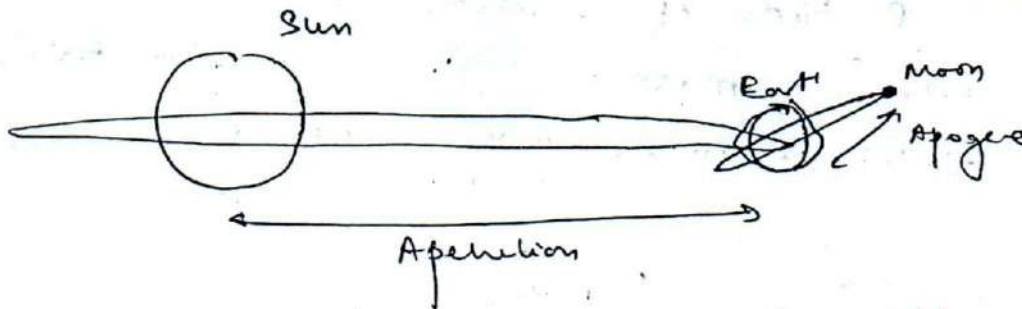


Though the relative distance between sun and earth do not have major impact on earth surface, but if taken in account for 'mixed tides' as discussed by Newton's 'Equilibrium theory' we can see Nadir and Zenith tides

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Nadir tide

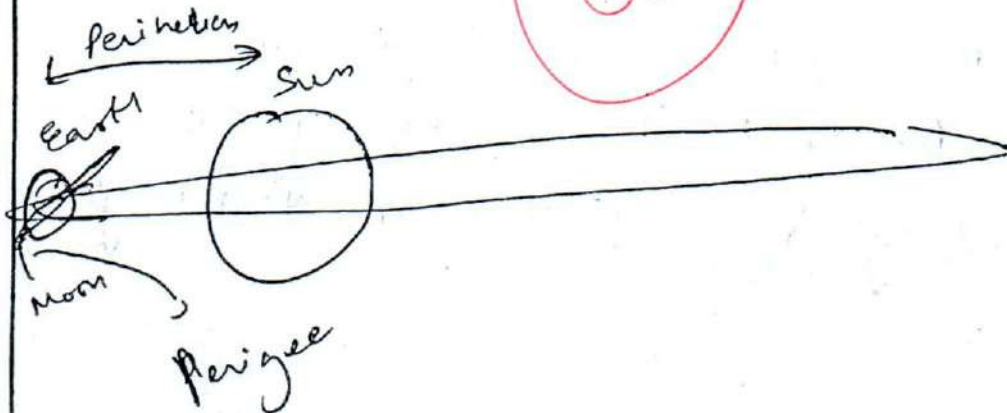
Moon is at apogee and from Earth and Earth is at apohelion position from Sun. Results into 'lowest' low tide i.e. lowest & tidal bulge. due to relative distance between celestial bodies



Zenith Tide

Moon is at perihelion perigee from Earth and Earth is at perihelion from Sun. Resulting into 'higher' high tides.

Syzygy
Quadrature

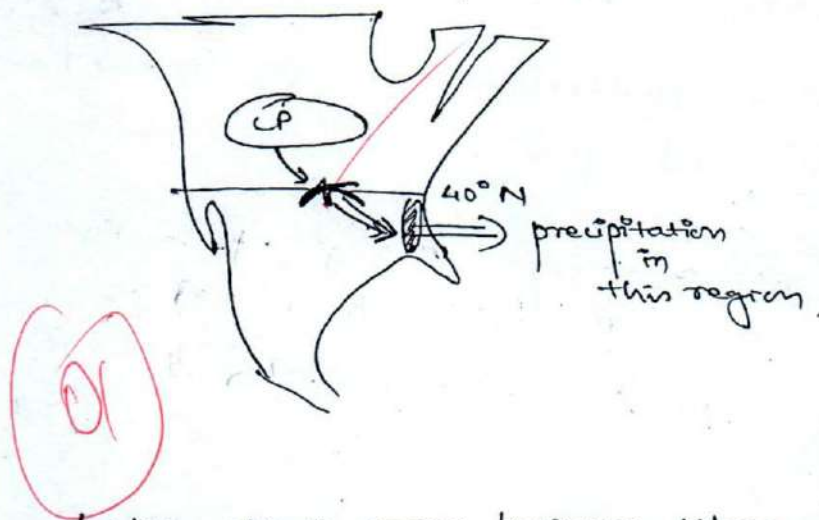


Que. 5. (d) What is lake effect snow?

10marks

Lake effect snow is related to 'CP' type of airmass in North America.

CP type of airmass is 'Continental polar' airmass \Rightarrow has origin in polar and sub-polar continent areas



Lake effect snow happens when cold CP airmass moves over "The Great Lakes" of North America, picks up moisture and gives precipitation in New England region.

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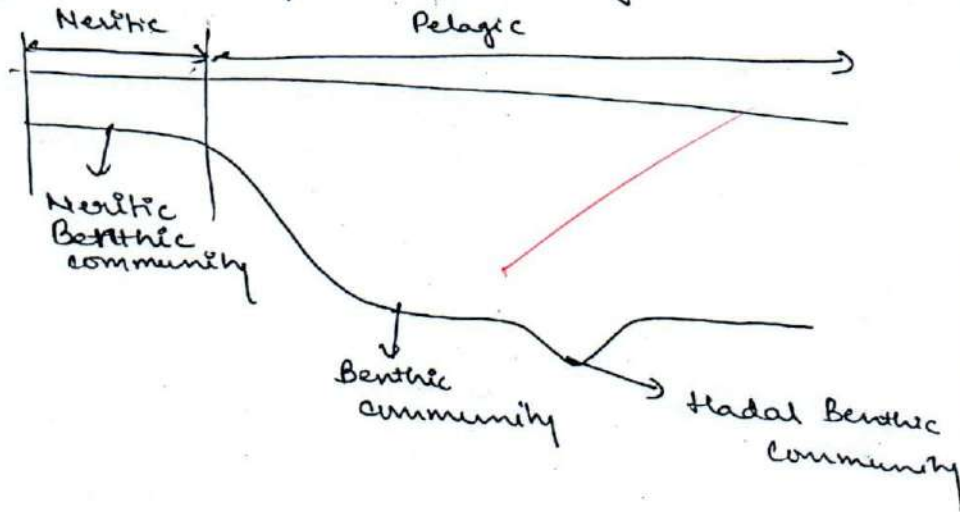
Que. 5. (c)

Describe benthos community and their characteristics

10marks

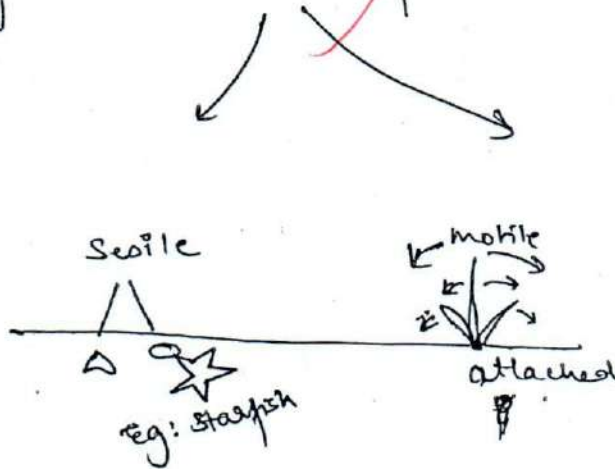
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Benthos community is the aquatic community that lives at the bottom floor of the an aquatic ecosystem.



Characteristics of Benthic community

- ① They mainly live in aphotic zone
- ② They do not photosynthesize
- ③ They are 'attached' form



- ④ They can be Chemotrophs : Eg! - Worms, clams
- ⑤ They can survive in extreme conditions such as $> 100^{\circ}\text{C}$ in presence of hydrothermal vents
- ⑥ These animals do not have well developed visual organs as they live in complete darkness.

Benthic community is least explored community as they are found at the ocean bottoms where human reach are difficult.

OS

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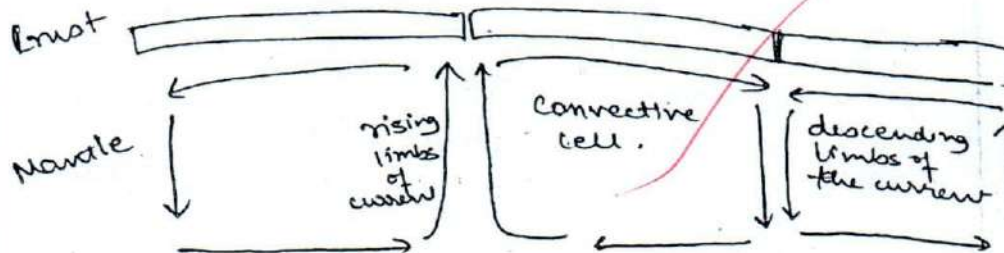
Que. 6. (a)

"Arthur Holmes was far ahead of his time in explaining diastrophism" Comment
20marks

Arthur Holmes is credited with the ground-breaking concept of "Mantle Convection" current when the researchers of his time were trying to explain origin of continents and oceans through irrelevant forces such as tidal force of sun and moon, thermal contraction, radioactive force etc.

Another Holmes' Mantle Convection Current scientifically and sufficiently explain the origin and movement of diastrophic forces

Mantle Convection Current Theory



① The mantle has high temperature

Candidate should not write anything in the margin

- ② The Due to high temperature, mantle is in molten state
- ③ Magma in mantle tends to rise thus resulting in rising convective current
- ④ As ~~the~~ convective current moves upward it cools down, thus tending to return downward \Rightarrow forming a convective cell
- ⑤ When two rising current are adjacent to each other \Rightarrow rising limbs
- ⑥ Rising limbs tends to move away crustal slabs away from each other
- ⑦ Volcanism can also occur at the place of rising limbs
- ⑧ Descending limbs tend to move crustal slabs towards each other.

OB

Mantle convection theory is widely applicable - Sea floor Spreading Theory, supplements Kober's geosynclinal theory, explains the movement of 'Plates' of Plate Tectonic Theory. Plate Tectonic Theory, which is a result of many researchers except the theory of Arthur Holmes as relevant in the present context.

Kober
PT 7

Que. 6. (b)

Define solar constant. Explain primary determiners of insolation distribution.

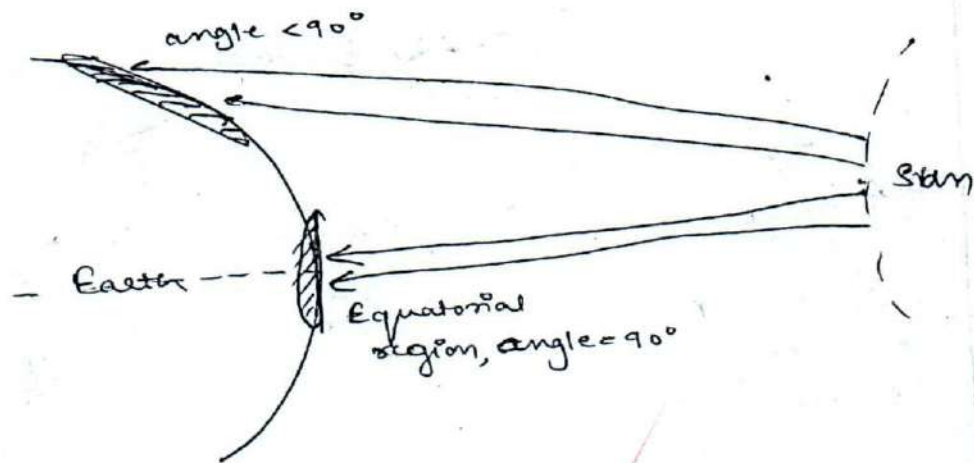
15marks

The rate per unit area at which solar radiation reaches the outer margin of the Earth's surface is known as the solar constant. This fixes the energy supply for atmospheric heat engine.

Primary determiners of insolation distribution

(a) Angle of sun rays

angle between the sun rays and tangent at the Earth's surface \Rightarrow determines amount of insolation.



same amount of ~~total~~ sun radiation impacts different surface area on Earth depending on

Candidate should not write anything in the margin

angle:

less area covered = greater insolation.

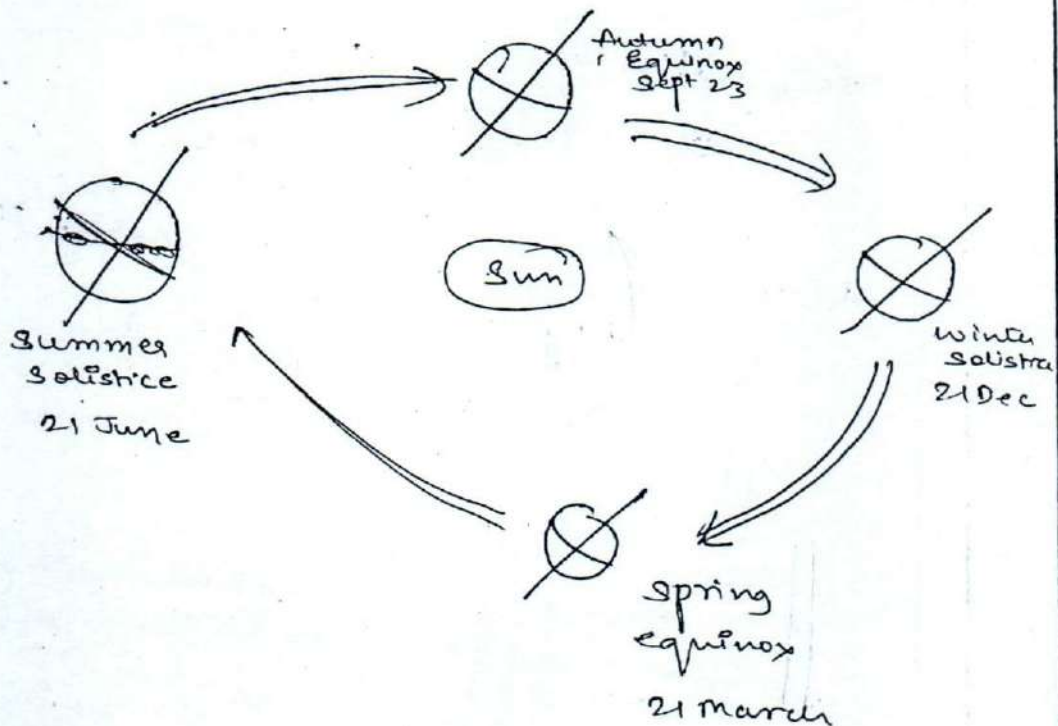
Thus, insolation decreases as we move away from equator

② Season cycle

Earth revolves around Sun on its tilted axis thus creates difference in the insolation received.

Summer \Rightarrow maximum insolation.

winter \Rightarrow minimum insolation



~~angle~~Equinox

Equator is analogous to thermal equator
 Thus equatorial region is insolation surplus

Summer solstice from Spring to Autumn

- ⇒ Northern Hemisphere remains insolation surplus and more direct rays
- ⇒ Apparent shift of sun towards North
- ⇒ Thermal equator ⇒ north of equator
- ⇒ longer days in Northern sphere

from Autumn to Spring

- ⇒ Southern Hemisphere — insolation surplus and more direct rays
- ⇒ apparent shift of sun towards south
- ⇒ Thermal equator ⇒ south of equator
- ⇒ shorter days in Southern sphere

Insolation is distribution is also influenced by secondary fac determines such as sun-spot cycle and atmospheric influence.

Que. 6. (c)

What is Southern Oscillation Index? Outline its effect on tropical weather.

15 marks

The Southern Oscillation Index, gives an indication of the development and intensity of El Niño or La Niña events in the Pacific Ocean. The SOI is calculated using the pressure differences between Tahiti and Darwin.

Negative SOI \Rightarrow El-Niño event

Neutral SOI \Rightarrow Normal conditions \Rightarrow No different effect

Positive SOI \Rightarrow La-Niña event

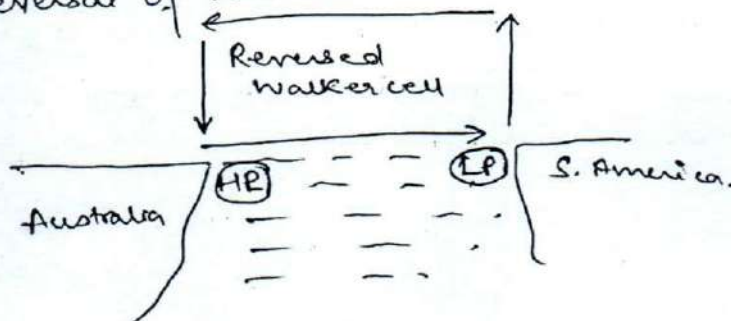
Effects of El-Niño event

~~1~~ ~~Reversed~~

El-Niño event occurs when unusual warming of Equatorial Eastern Pacific results into replacement of cold Peruvian current by a warm current.

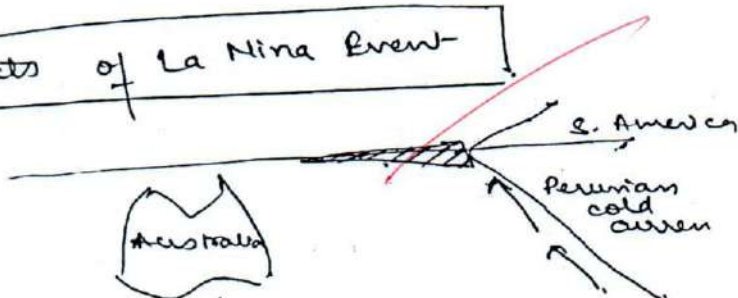
Effects in tropical weather:

1) Reversal of Walker cell



- a) Reversed Walker cell weakens SW Monsoon winds in Indian Ocean thus can cause drought like condition in South Asia.
- b) Peruvian coast receives heavy rainfall resulting into ~~monsoon~~ coastal flooding and erosion.
- c) Drought like conditions in Australia.
- d) can reduce tropical hurricanes in the Atlantic Ocean.

Effects of La Nina Event



La-Nina event occurs when unusual cooling of Equatorial Eastern Pacific occurs.

Effects :

- a) Strengthening of Walker cell
- b) Enhances Mascarene High, thus SW Monsoon winds over Indian Ocean
- c) Flood like condition for India and Australia
- d) Drought like condition in Peru but enhanced upwelling enhances fish

production

© milder winters in Europe.

This Southern Oscillation is regional phenomena that has global impact on the climate through teleconnections.

12

Candidate should not
write anything in the margin

Que. 7. (a) What are marine pollution types & causes? Also outline abatement measures.

20 marks

Marine pollution occurs when substances used or spread by humans, such as industrial, agricultural and residential waste, particles, noise, excess carbon dioxide etc. enter oceans and causes harmful effects.

IUCN and UNEP has outlined various types and causes of marine pollution.

① Point and Non-point pollution.

Point sources

* by oil spills or chemical spills.
 causes: shipping accidents, leakages, negligence of ships travelling in oceans.

2 effects

oil toxicity

- heat damage
- stunted growth
- effect on immune system

fouling
oiling

physical harm

Non-point sources

Domestic and industrial runoff

② Marine Debris: microplastics, abandoned shipping gear and vessels.
 New problem of space debris falling into oceans.

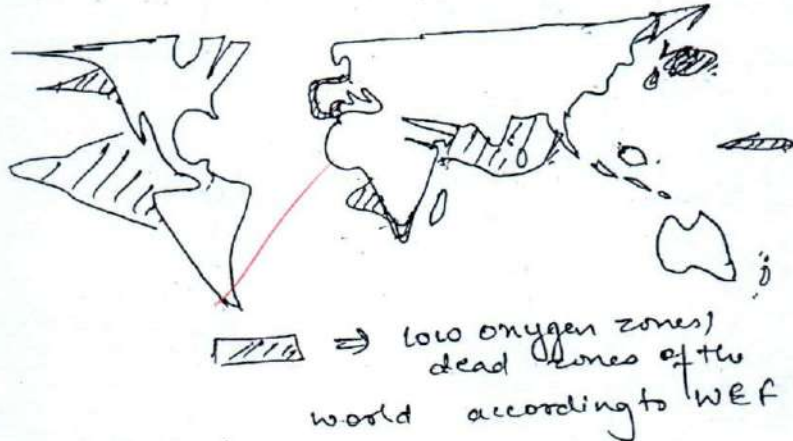
threatens navigation and poses danger to marine ecosystem.

⇒ Garbage patches formed by gyre.
Eg: Sargasso seas.

③ Not type but concentration determining whether substance is a pollutant

Eg: Nutrients of Nitrogen and Phosphorus are assets but in excess creates - toxic effects on organism and humans creating dead zones.

Cause: excessive use of urea and DAP in agriculture ⇒ increases concentration of Nitrogen and Phosphorus in run-off water, ~~creation~~ draining in oceans.

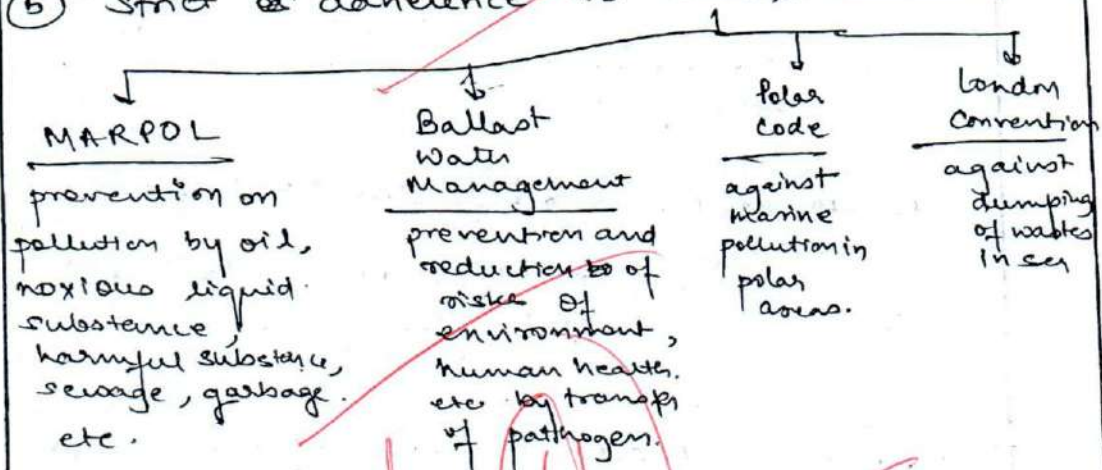


④ Ocean Acidification

with, > 200 years of industrial revolution, CO_2 content of ocean have increased resulting in 0.1 pH units.

Abatement measures for marine pollution

- ① Removal of phosphorus by electrolysis
- ② Radio-active wastes can be removed or reduced by the ion-exchange techniques.
- ③ Recycling of solid wastes and ban on single use plastics and microplastics.
- ④ Awareness programmes and giving incentives for marine conservation.
- ⑤ Strict adherence to IMO's convention



Curbing marine pollution is of utmost importance as it threatens human health, fishing industry (food insecurity), corals and mangroves which act as first line of defence during marine disasters.

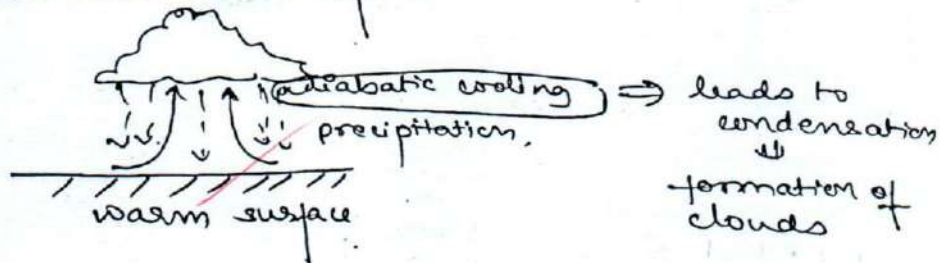
Que. 7. (b) Explain origin of rainfall, along with its types.

15marks

Fall of moisture from base of clouds is known as precipitation. When the form of such precipitation is in liquid state it is known as rainfall.

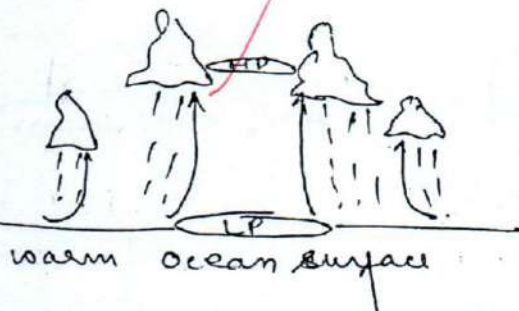
Types of Rainfall

① Convictional Rainfall (associated with absolute instability)



Location: Equatorial region (40° clock rain everyday) and moist warm low latitude regions.

② Cyclonic Rainfall (absolute instability)



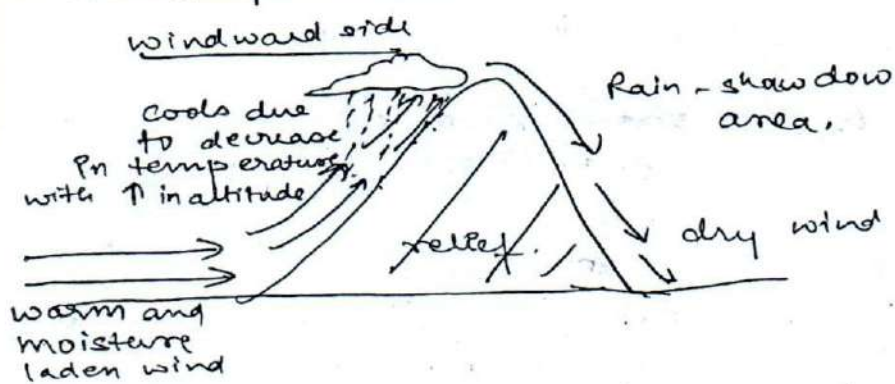
Occurs in subtropical region & when extensive ocean surface is heated up creating intense low pressure system.

formation of cumulo-nimbus and series of cumulus clouds occur.

Rain occurs in rain-bands and is often accompanied with intense lightning and thunder.

Cyclonic and convective rainfall, ~~are~~ can also give hail storms in some cases.

③ Orographic Rain (conditional instability)

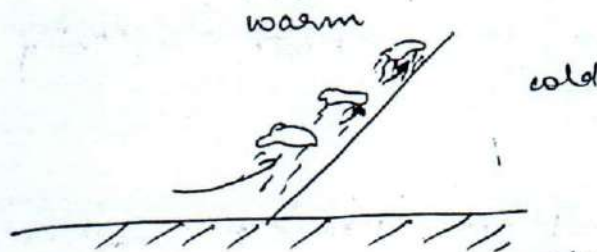


found a. Location: can be found at any latitude where relief barrier occurs in the path of moist and warm wind.

Eg: - Western Ghats stops S-W monsoon winds of Arabian branch, giving heavy rainfall in coastal plains.

Orographic Rain
Bergeron
Bower

④ frontal rainfall (conditional instability)



When warm and cold air masses meet, form frontogenesis happens. At the boundary condensation leads to formation of clouds which results into rainfall.

Location : Mid-high latitude

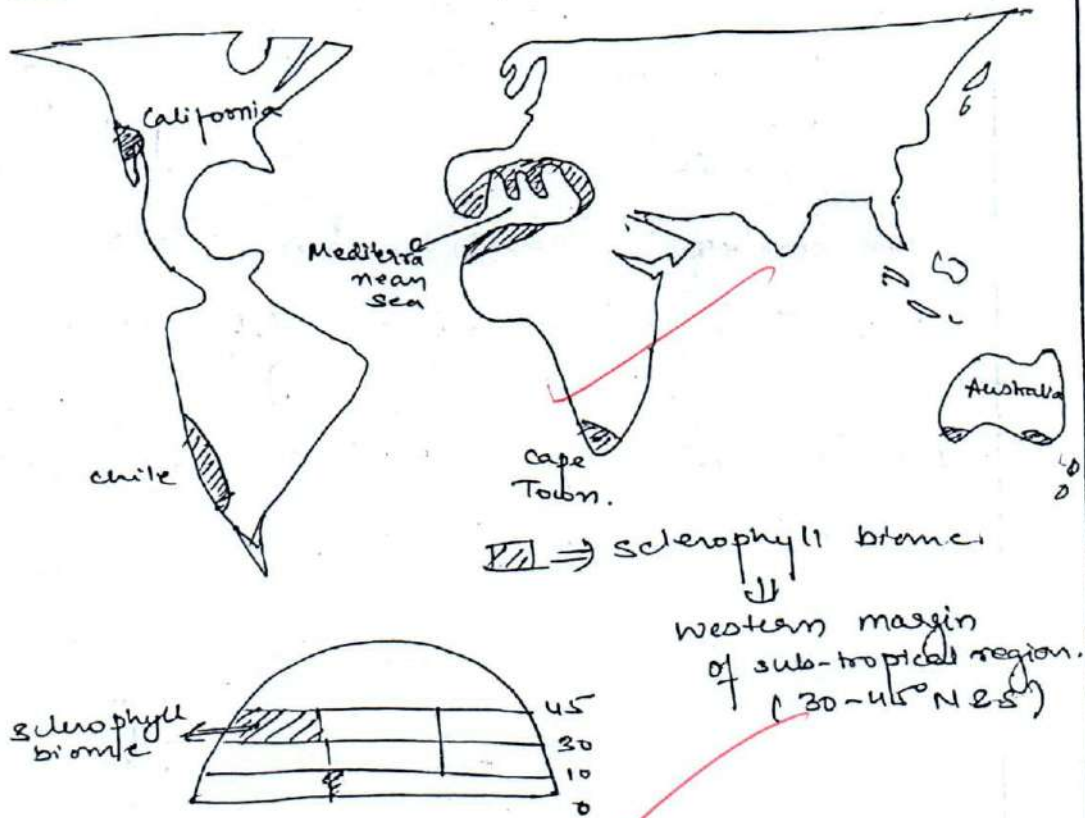
Eg:- warm-frontal precipitation gives life to Tundra biome whereas steppes sustain due to cold frontal precipitation throughout the year.

09

Quc. 7.(c) Briefly explain characteristics of sclerophyll biome and present account of challenges faced by it. 15marks

Sclerophyll biome is the other name for Mediterranean type of biome.

Location



Climate

- ⇒ Bright sunny hot ^{dry} summers (due to off shore high pressure)
- ⇒ wet mild winters. (mM air mass in influence of westerlies on-shore)
- ⇒ local winds such as Sirocco and Mistral.

Biotic Community

Plant community

"sclerophyll" plants

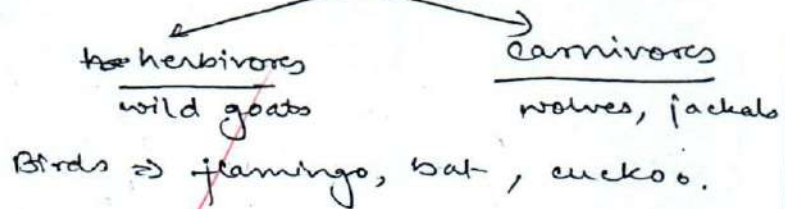
- * short stunted trees
- * short bushes
- * deep roots
- * thick, small glossy leaves.
- * have special oils in their leaves which are used in perfumery and essential oils

Eg:- Magrui, Chapparal, fig, olives

Cape-Town biome \Rightarrow woodland formation is missing.

Animal community

limited variety of heterotrophs

soil type

Podzolic soil with well developed
Genetic horizons.

It is the most fertile forest soil.

Challenges faced by sclerophyll & brane

① Summer Droughts :

Mediterranean regions are known for crop cultivation such as wheat, maize, rice etc. summer droughts often degrade agricultural productivity.

Eg: Po valley in Italy is known for growing rice in summer but due to extreme drought in 2022 it is facing food shortage.

② Forest fires and air pollution : dry intense summer leads to forest fires events

Eg: California forest fires ⇒ loss of biodiversity

③ Effect of climate change : increases intensity and frequency of above events

④ Horticulture Industry : intense droughts and high temperatures are degrading the quality of food as vegetables and fruits, adversely impacting food security of the region.

HIPPO

