

COMMENTS / REMARKS

Question 1 - 7 Overall Marks	Marks Given						
	Q1 2/50	Q2 1/1	Q3 1/1	Q4 1/1	Q5 1/1	Q6 1/1	Q7 1/1

Q1 All short notes needs specifications as asked in question same for Q5

Q3 a) You should attempt both parts of questions stages / PTT / Isotopy

b) Gone wrong with framing

c) Content is not for asked quest

Q4 a) You have only focussed on UMLs

b) & c) Content details messy

Q7 All sub parts have not been approached with the requirement of questions refer model an

TEST - 1
GEOGRAPHY

Time Allowed : Three Hours

Maximum Marks : 250

SECTION- A

Ques. 1. Write short notes on:

- ✓(a) Mass movement types
- ✓(b) Pluton types
- ✓(c) Triple junctions
- ✓(d) Catastrophic waves
- ✓(e) Glacial abrasion

Ques. 2. (a) Give an account of classical theories of Cavern development.

- (b) What is mechanism of sediment transport?
- (c) Avail an account of the mantle and the crust

✓**Ques. 3.** (a) What are geosynclines? Explain geosynclinal theory of mountain building.

- (b) Explain types of volcanic eruptions.
- (c) Write note on hill slope processes.

✓**Ques. 4.** (a) Give an account of Arctic Ocean jurisdiction in light of Laws of Seas.

- (b) What are the major geomorphic theories on landform development?
- (c) Explain mechanism of faulting.

SECTION - B

Ques. 5. Write short notes on:

- ✓(a) Ice sheets deposits
- ✓(b) Magnetic field and cosmic ray shield
- ✓(c) Acoustic technology in bathymetric studies
- ✓(d) Tidal movements
- ✓(e) Halocline and pycnocline

Ques. 6. (a) What are the impacts of Pleistocene ice age?

- (b) Write notes on features of volcanic rocks.
- (c) What are Active and Passive margins coasts?

✓**Ques. 7.** (a) Write note on Islands and Coral Reef.

- (b) In light of sedimentary environments, write note on biogenic sediments.
- (c) Discuss mechanism of oceanic current.



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

10x5=50

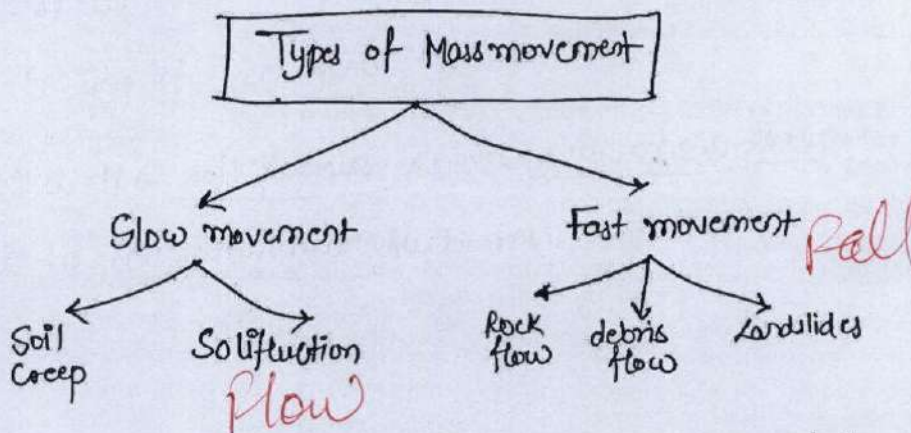
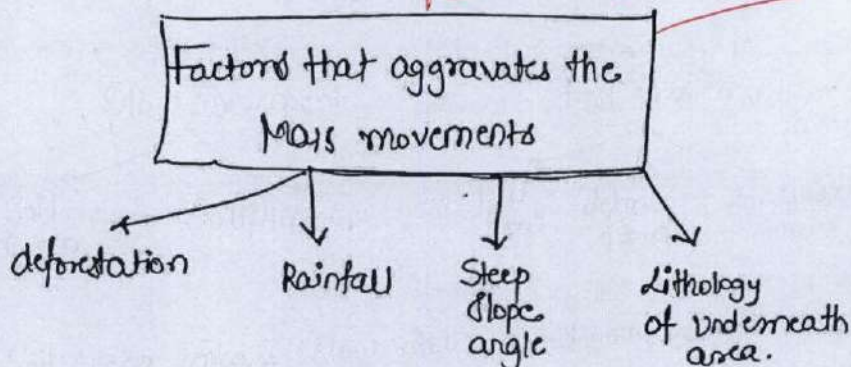
Que.1.(a)

Mass movement types

Candidate should not write anything in the margin

Mass movement means the downsliding of the earth debris, mud, rock, etc due to gravitational force.

types should not be written in defn



(a) Soil creep means slow downward movement of the soil. It can't be witness by eyes but can be recognised by bending of tree, fences, etc.

(b) When the soil particles moves over one another due to soil saturation such movement is called as solifluction

(c) When rock flows down the slope due to deforestation, excess rainfall, earthquake it called Rock flow.

Categories are Six

(d) When rock particles flows down the slope due to the deforestation is called debris flow.

(e) When part of earth falls directly downwards or slumps in backward direction is called landslide.

Brief details of each

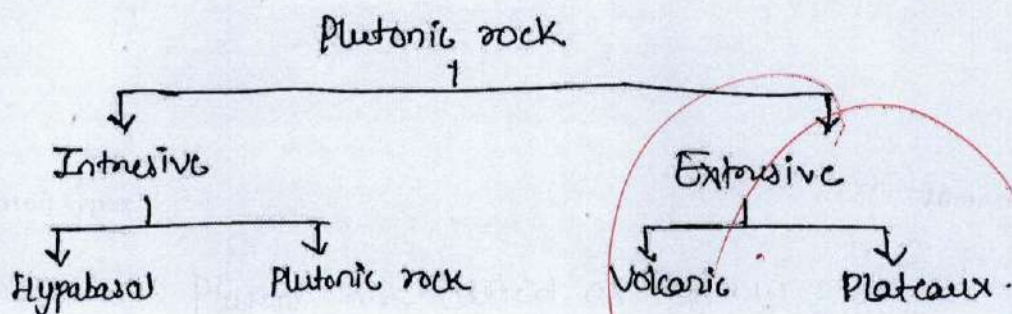
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04

Que. 1(b) Pluton types

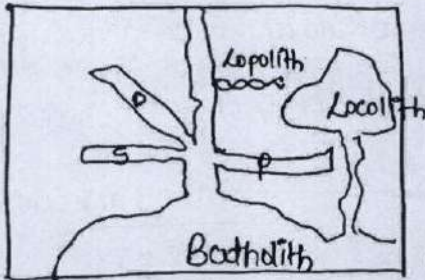
10marks

Plutons are called as igneous rock, these rocks are different depending upon the cooling of the lava/magma.



(a) When the lava cools just beneath the earth surface such rocks are called hypabasal rocks.

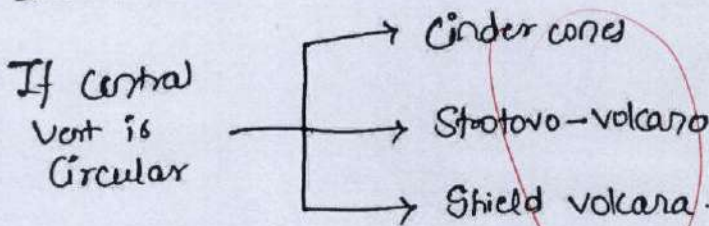
Candidate should not write anything in the margin



D → Dyke
S → Sills
P → Phacolith.

- (a) Dykes are Vertical intrusion.
- (b) Sills are horizontal intrusion.
- (c) Saucer shape rock are called as Phacolith
- (d) Dome shape having conduct at bottom are called as Locolith
- (e) large basaltic structure called as Batholith.

(b) When the lava reached on earth surface, various volcanoes & plateaux are formed depending on the vents.



Plutons are only intrusive

If the lava comes through fissures → Lava plateaux are formed eg: → Deccan plateaux of India.



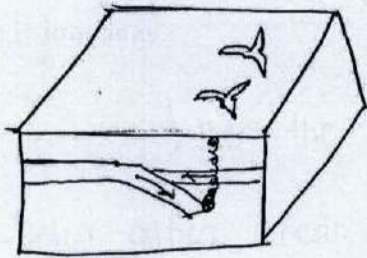
Categories
Massive tabular

Que. 1(c) Triple junctions

10marks

Candidate should not
write anything in the margin

When the ocean plate gets subducted
Under other ocean plate, the subducted plate
melts, & this melted material tries to reach
 the surface by breaking the ocean floor.



* Initially the melted
 magma punctures the ocean
 floor from bottom by creating
triple junction spot i.e. 3 arm or
 leaf like structure. When the numerous junctions
meets each other the one arm of the triple
junction dies called as Alcogenes.

When all the triple junctions meet the archipelago
 are formed because the volcanic materials gets
 accumulated from the bottom.

(01) Failed arm Mantle Plume
 by L

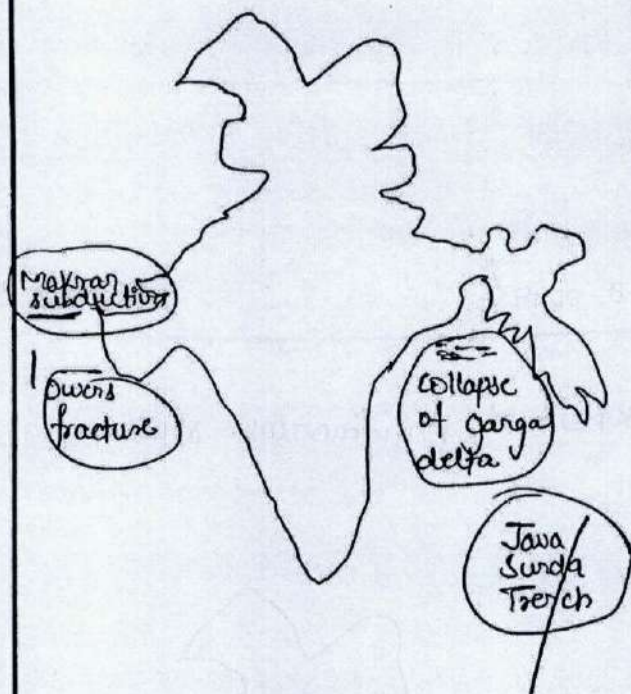
Que. 1(d) Catastrophic waves

10marks

The catastrophic waves are also called as Tsunami waves. The Tsunami waves are formed due to the earthquake, meteorite, faulting, tectonic activity, collapse of submarine roof.

The Tsunami waves wavelength in deep ocean is larger than the shallow ocean. The depth or height of wave is less in deep ocean while it is more towards the shallow ocean due to breaking of the waves.

India's vulnerability to catastrophic wave :->



Uptill now India witnessed
13 major Tsunami &
2004 tsunami was
Catastrophic.

Mechanisms
& characteristics
should
be the
focus

Steps to mitigate the effect of catastrophic wave :->

- ① Early warning system like Bottom pressure recorder for information dissemination
- ② Structural solutions like Tsunami shelter, gyonies, etc.
- ③ Non-Structural solutions like coral & Mangrove protections which had helped India during 2004 Tsunami.

Que. 1(e)

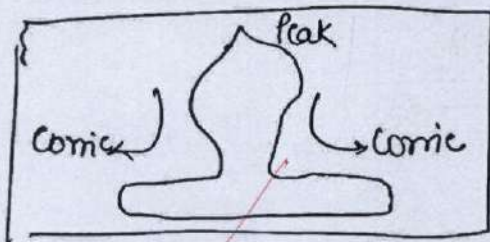
Glacial abrasion

10marks

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write anything in the margin

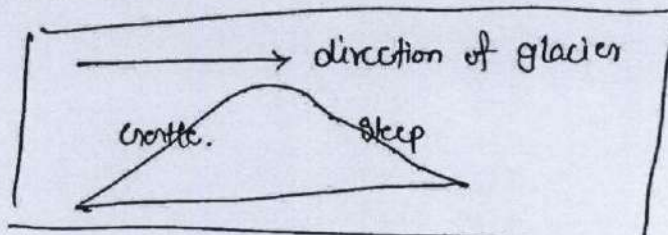
When the glacier i.e. ice mass moves over landmass it erodes the land, this phenomenon is called as glacial abrasion. Various types of landforms are created due to the glacial abrasion,

- ① Corrie :-> The armchained or horse-shoe shape basin formed due to the glacial forward movement.
- ② Artes/Peaks :-> When two adjacent corries meet, the junction is ridge like structure called as Artes & the top saw-teeth like structure is called as Peak.

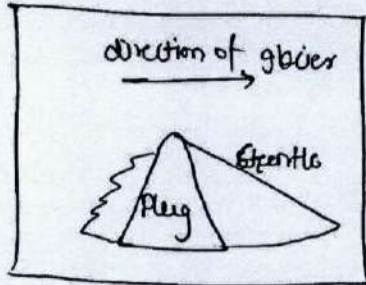


- ③ Roche Mountain :-> The forward movement of the glacier forming the gentle slope on glacial-wards & steep slope on leeward such landform are called as

Roche Mountain



- (4) Crag & tail :-> When there is resistant rock, the leeward side of rock becomes gentle due to glacier movement & such mechanism of landform are called as Crag & tail



~~Not the features~~

~~bed process~~

~~Plucking
meltwater
erosion~~

Que. 2. (a) 'Give an account of classical theories of Cavern development.

20marks

Cavern development are found in the Karst topography. There are various theories that tried to explain the Cavern development,

(a) Vadose-zone theory :->

According to this theory the rainfall occurs over the limestone area, this chemically active rainfall distolves the limestone leading to

formation of the sink & swallow holes, through

~~Pages missing~~

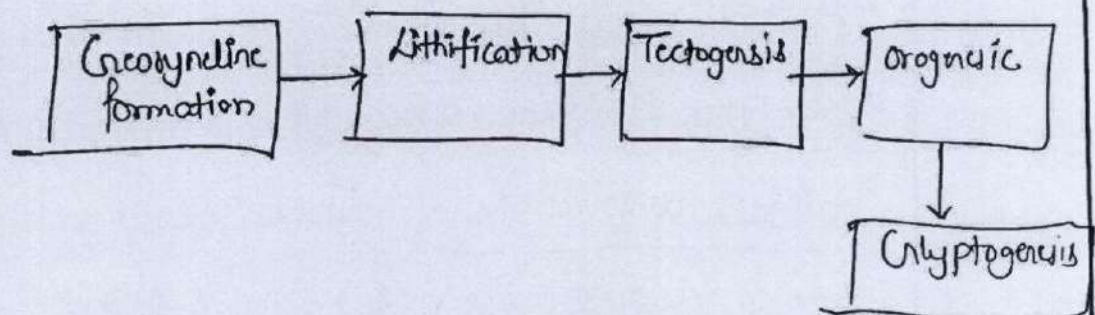
Que. 3.(a) What are geosynclines? Explain geosynclinal theory of mountain building.

20marks

Geosyncline are the crustal depression asserted by Hall and Dana. The formation of geosynclines are provided by the Arthur Holmes theory of convictional cell hypothesis. Due to slagging, thinning of the crust it sags down forming the geosyncline.

KOBBER'S theory of geosyncline to explain fold

Mountain: →



Candidate should not write anything in the margin

a) Geosyncline & sedimentational process means the formation of geosyncline, deposition of the material in geosyncline by river; because of this the geosyncline moves in downward direction due to its weight.

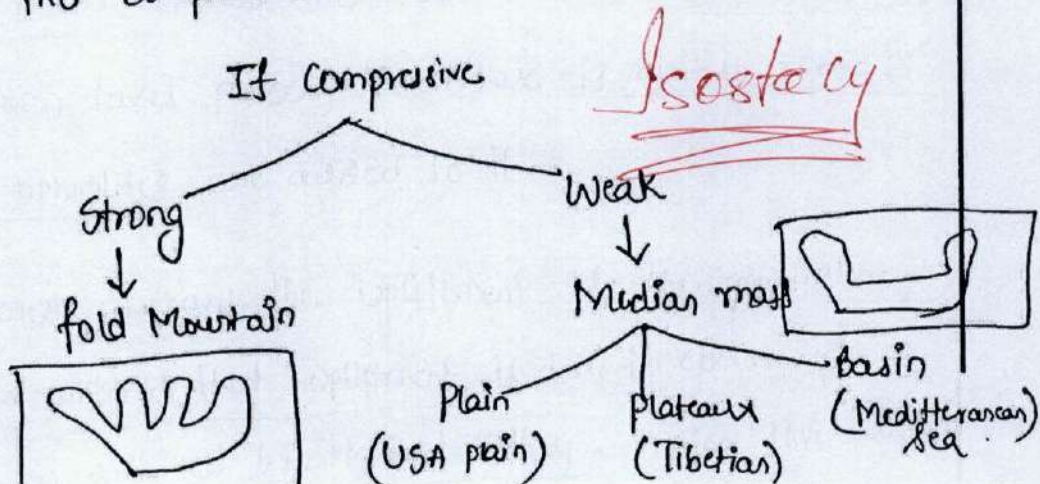
Def'n types

b) The cementation process i.e. lithification / consolidation of the sediments takes place due to the compression of sediments among themselves.

Stages

c) Tectogenesis means the tectonic movement & volcanic eruption takes place, this phase is quietest phase. The ophiolites are added to it.

d) Orogenesis means the upliftment of the geosyncline, Kobber asserted that upliftment is due to cooling of earth as asserted by Harold Jeffery. During this orogenic phase the compressive force decide the relief feature



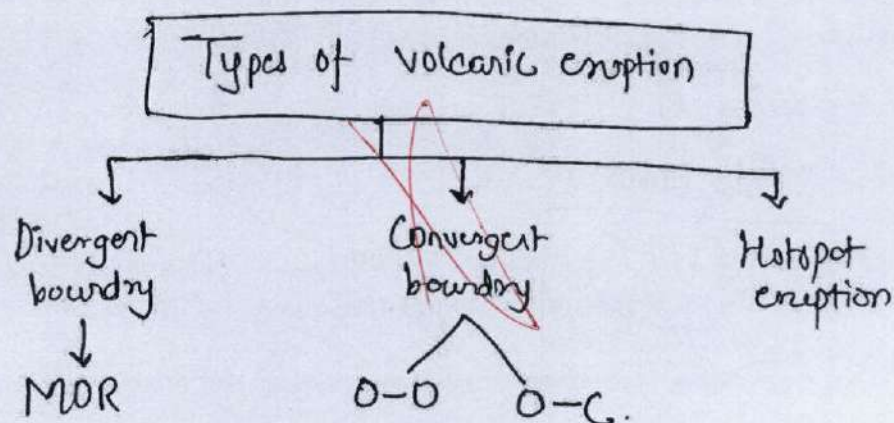
(e) Cryptogenesis means the upliftment stops; and this Uplifted mass witnesses the denudation due to exogenetic force.

07

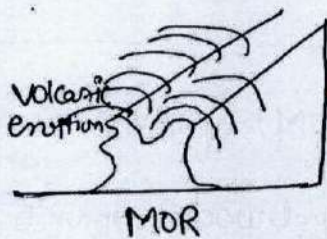
Que. 3.(b) Explain types of volcanic eruptions.

15marks

Volcanism is process of formation of lava/magma, movement of lava/magma; etc leading to formation of the Volcanic landforms called as Volcano.



(a) Mid Oceanic Ridge (MOR) has volcanic eruption due to the divergent boundary, as this divergence forces the ocean floor to split up and leads to accumulation of the peridotitic lavas along the sides of MOR.
 eg: → MOR in Atlantic ocean.



*Volcanian
Strombolian
Pellean*

*Plate Boundaries
NO REP*

(b) When O-O type of convergence takes place, the subduction of one oceanic plates. Due to subduction the plate melts & it tries to puncture the ocean floor from bottom through triple junction mechanism leading to formation of Archipelago

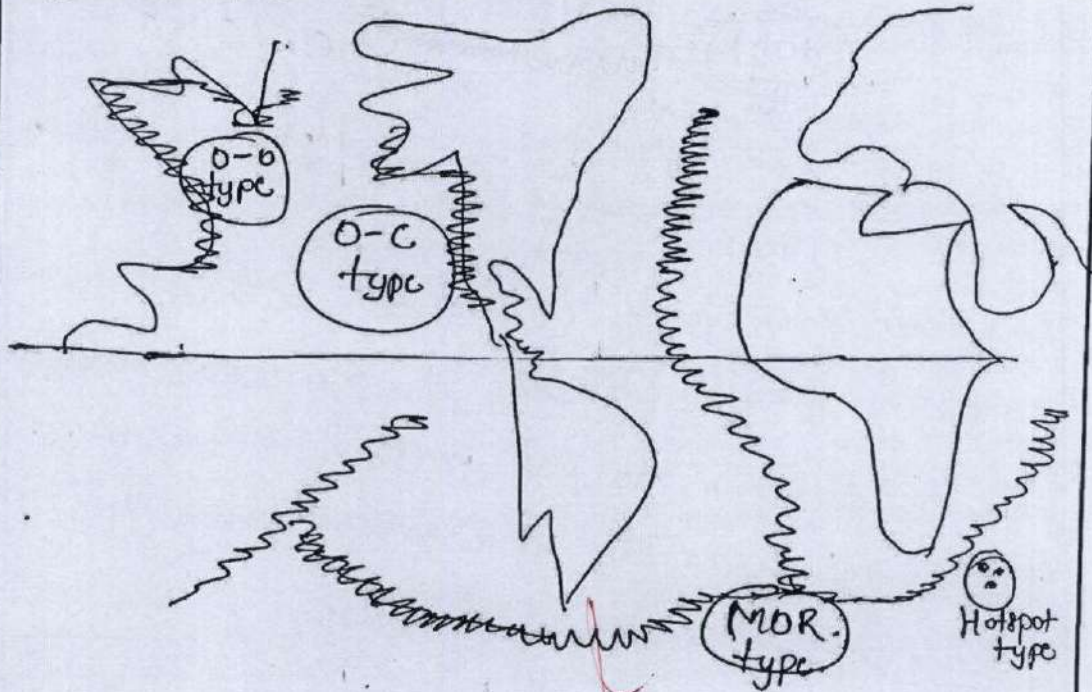
(c) When O-C type of convergence occurs, the oceanic plates get subducted & melts, this melting, & puncturing of the continental takes place forming the batholith structure. The Andean type of explosion is present in O-C mechanism.

Candidate should not write anything in the margin

Fissure type

Candidate should not write anything in the margin

(d) Due to hotspots, the intra-plate eruption takes place. The formation of the hotspots is not know yet.
eg: → Hawaiian Island.



02

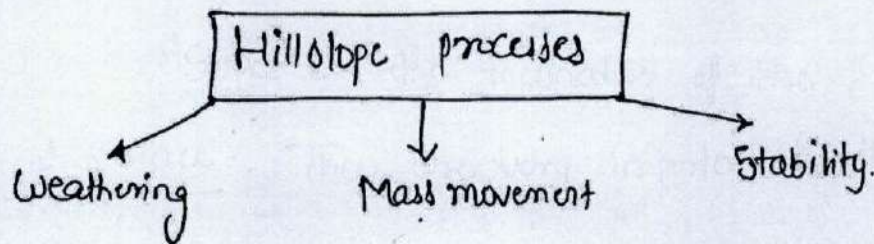
Que. 3.(c)

Write note on hill slope processes.

15marks

Candidate should not
write anything in the margin

Slopes are the inclination of the ground surface. They are very important for the study because it helps to calculate the discharge of water, cutting and filling of earth material during road construction.



(a) Weathering of slope, according to Davis the weathering takes place due to the exogenetic force especially the river from top to bottom. While Perck asserted that the slope weathering takes place in slope replacement method i.e. gentler slope replaces steeper slope.

(b) Mass movement, means the rocks/mud/soil/debris flows downward due to the gravity. The

factors that accentuate the mass movement are deforestation, excess rainfall, earthquakes.

The weathering decides the types of movement, if the weathering is intense then the soil is formed leading to either soil creep, solifluction.

If the weathering is less intense it may be leading to the rock flow, debris flow, etc

(C) Stability of hill slope depends on the resistance to erosion & movement. The stability to hill slope can be provided by providing terrace, consolidation of the soil, afforestation.

for cohesive
non cohesive
hard rocks } Structures
&
Gradient

Candidate should not
write anything in the margin

Que. 4.(a) Give an account of Arctic Ocean jurisdiction in light of Laws of Seas.

20marks

UNCLOS asserted that the ocean should be governed as per Rule of law. Hence Coastal Nation should set up proper baseline, so that they can divide the ocean area into territorial water, contiguous zone, buffer zone, exclusive economic zone (EEZ)

The Coastal state have right upto EEZ, if any right to exploration requires the mode of ISA (International Sea-bed Authority)

The north pole is Arctic area & south pole
ie. Antarctica should not be under single country
jurisdiction. Hence the Arctic & Antarctic area
 have land, territorial sea, EEZ, open ocean.

Arctic Ocean's land, territorial water,
EEZ are owned by the Arctic coastal nation
 ie. USA, Canada, Russia, Denmark, Finland, Iceland,
Norway, Sweden. But the dispute between Russia,
 Denmark, etc still prevails over jurisdiction.

India and China wants the jurisdiction
 over the High / Open sea but it requires the
nod of the ISA, which means consortium
 mechanism requires for it. Whatever resources
obtained from it must be shared with the
landlock country.

lock
 res

for jurisdiction
 climate change related

benefits

00

Que. 4.(b) What are the major geomorphic theories on landform development?

15marks

Landform development is process of formation of various landforms due to endogenetic and exogenetic force. Davis, Perck, Lawson proposed model of landform development.

① Davis model : →

According to Davisian model, landform is result of "Process, Structure and Time". Everytime landform witness lifecycle. It's like organism it gives birth, matures, dies. Davis have given more importance to time and asserted that due to time factor we can analyse the future trend of the landform. His theory was based on closed system concept which was criticised by R.J. Chorley.

② Perck model : →

According to Perck, the ratio of the endogenetic

Candidate should not write anything in the margin

and exogenetic force decides the landform. The Penck model explicitly rejects the time concept of Davis. & asserted that process plays dominant role than time concept. He proved this phenomenon by the river rejuvenation landforms.

③ Lawson's recession theory :->

As per Lawson, the mountain or uplifted landform witnesses the denudation i.e. either wind, rain, etc because of this the weathering takes place leading to recession of mountain i.e. gradual removal of mountain.

Historical
Process
Form) System

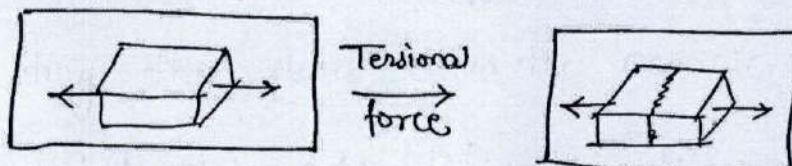
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write anything in the margin

Que. 4.(c) Explain mechanism of faulting.

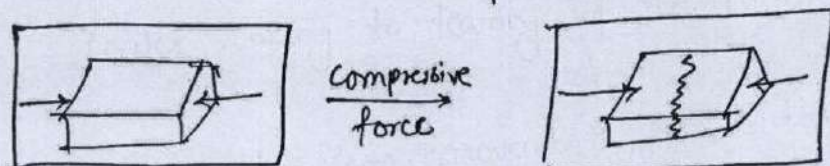
15marks

Faulting is formed due to the endogenic force as well as exogenic force. In the faulting the plates either the oceanic plate or continental plate gets divided or there is formation of crack.

① Faulting process takes place due to tensional force applied on the rock. eg: → SanAndreas fault



- ① Faulting process also takes place due to compressive force. eg: → Nepal earthquake due to compressive force.



- ③ When the river which has enormous amount of water erodes the continent, the faulting of the continent takes place.

eg: → Brahmaputra river has enormous amount of water leading to tearing of the continent.

- ④ Due to the transform movement, i.e. sliding movement of the plates the faults are formed either on the continent or oceanic plates leading to earthquake & tsunami respectively.

- ⑤ Due to excess of faulting process, rift ridge valley may be formed due to divergent boundary.

Tensional
Compressor
Reverse

Candidate should not
write anything in the margin

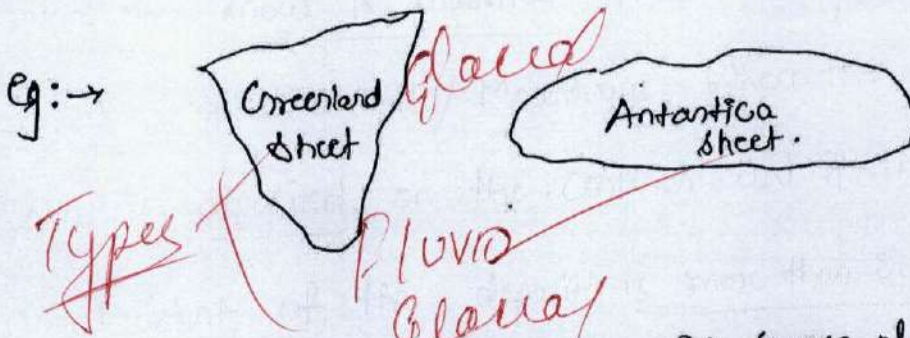
Write Short Notes, within 150 words each, on the following ;

10x5=50

Que. 5. (a)

Ice sheets deposits

Glaciers are the movement of ice of ice on the hill slopes. While the Ice sheets means the snow is deposited thus leading to formation of the hill/ Mountains. When the snow is deposited on the continent and if the areal extent of the deposit is more than 50000 sq. km then such deposits are called as the Ice sheet.



The Ice sheets are rich source of the pure water. Due to global warming the Ice sheets are melting & leading to ablation of glacier causing sea-level rise. The melting of

Candidate should not write anything in the margin

Kangaroo ice sheet led to rise in sea-level.

01

Candidate should not
write anything in the margin

Que. 5. (b) Magnetic field and cosmic ray shield.

10marks

Magnetic field is also known as geomagnetosphere. Gilbert asserted that earth has embedded Bar magnet, some other scientist said that due to rock property such magnetic field exists. Today many scientist asserted that the magnetic field is due to arrangement of inner Core and outcore.

The inner core is solid while outcore is liquid, which means this outer-core has free-electron rotating around solids (Nickel-Iron) core. This is similar to solenoid leading to formation of magnetic field. The World/Earth witness 4 reversal i.e. Gilbert reversal, Gauss normal, Matuyama reversal & Brunhe's normal

This field deflects harmful rays & protects humans, flora, fauna from harmful events.

Magnetic field plays important role in navigation.

01

Van Allen radiation belt

Candidate should not write anything in the margin

Que. 5. (c) Acoustic technology in bathymetric studies.

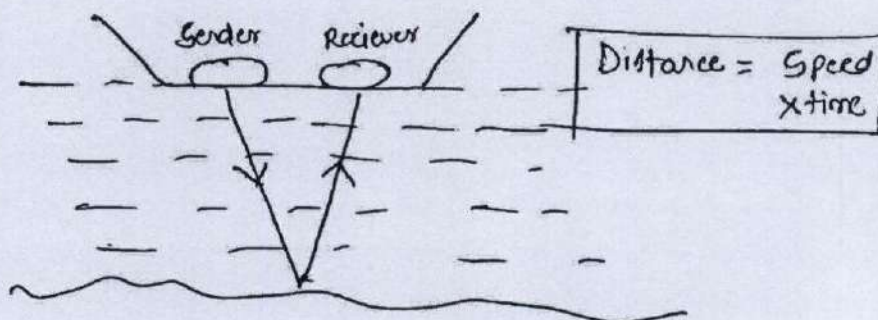
10marks

Bathymetric studies measuring the depth of sea-floor. It is also called as hypography i.e. topography of ocean floor.

(a) During Challenger expedition, the depth of ocean floor was measured with the rope attached with anchor.

(b) Acoustic technology means use of sound waves for predicting the depth of water. The principle behind this is distance/depth = Speed \times time.

The SONAR technology is used for carrying out the depth analysis of the ocean floor.



~~So far~~ ~~Layers~~

Que. 5. (d) Tidal movements.

10marks

Tides are the rise and fall in the sea-level due to the moon's gravitational, Sun's gravitational field. When the Sun, Moon, Earth are in line such type of tide is called as Spring tide i.e. 20% higher tide than normal tide; when Sun, Moon, Earth are in oblique/right angle such tide is called as Neap tide i.e. 20% less than normal tide.

Amphidromic waves

Que. 5. (e) Halocline and pycnocline.

10marks

Candidate should not
write anything in the margin

Halocline is the area in the ocean where the salinity decreases rapidly as the depth increases. The Halocline depends on the various factors like evaporation, rainfall, river flow receiving, etc. Generally during summer the halocline depth moves in upward direction & during rainy season the halocline depth moves in downward direction due to dilution of water.

Pycnocline is the area in the ocean where the density of the ocean changes rapidly as the depth increase.

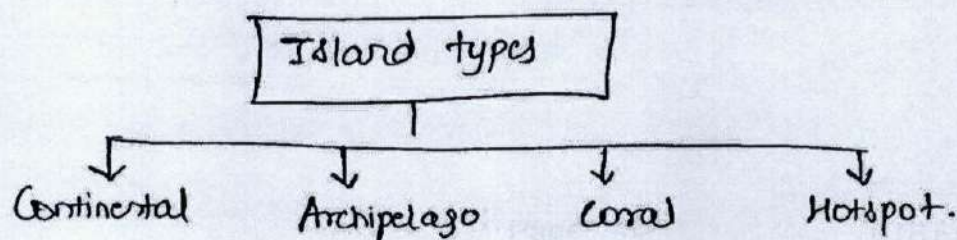
Pycnocline depends on the temperature, and the salinity, more the salinity & less the temperature the pycnocline depth increases i.e. it moves in upward direction & vice-versa.

Que. 7. (a)

Write note on Islands and Coral Reef.

20marks

Islands are the small land surrounded by the waterbody. Islands are of different types.



(a) Continental Islands like Sri Lanka, Madagascar have the same flora and fauna as that of near by continent.

According to Wegener, this type of Island are formed due to the snapping of trailing end.

(b) Archipelago Island are the formed due to the deposition of the lava; The flora and fauna of this island are different that continental area.

(c) Coral islands are formed due to the depositional feature of coral polyps & zooxanthellae relationship.

Murray, Darwin, Daly theory of Coral formation explains all types of coral.

(d) The hotspot volcano like Hawaiian, Reunion island have oceanic flora & fauna.

Candidate should not write anything in the margin

Coral is a symbiotic relation between coral polyps & Zooxanthellae. They are found in tropics but not near western coast. They are also not found in the areas where river meets the ocean due to salinity tolerance.

Coral are of different types depending on

location :->

- (a) The coral near coast are called as fringing coral.
- (b) The coral away from coast but parallel are called as coral reef / barrier eg:-> Great Australian coral reef.
- (c) The coral found in deep ocean having lagoon are called as Atoll coral.

Threats to coral :->

- (1) Excessive tourism.
- (2) Invasive species.
- (3) Global warming increases temperature & due to this the symbiotic relation breaks leading to coral bleaching.
- (4) Ocean acidification increases temperature & thus

Candidate should not write anything in the margin

leading to coral bleaching.

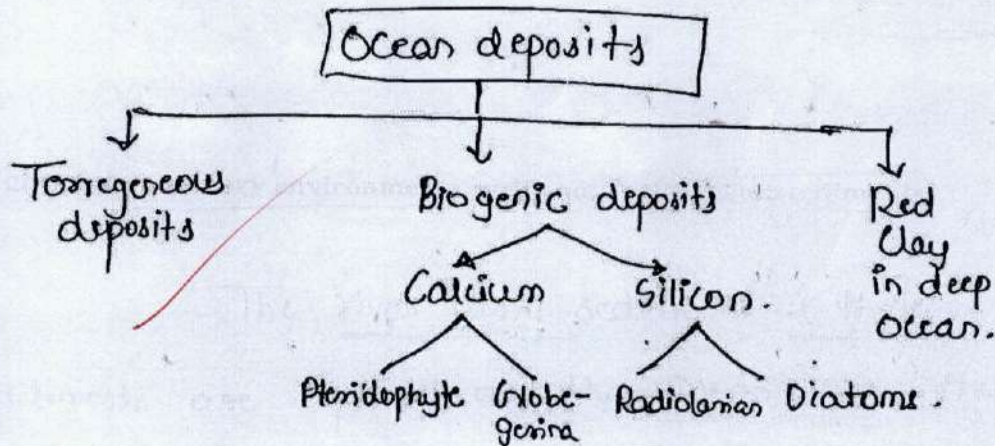
- ⑤ Due to discharge of effluents having nitrogen & phosphate algal bloom takes place leading to dead zone i.e. (Zero oxygen zone in ocean) causing death of coral.
- ⑥ Oil spills- also affects coral.

Islands & coral reef types

Que. 7. (b) In light of sedimentary environments, write note on biogenic sediments

15marks

The river carry sediments & these sediments are deposited on the Ocean floor, these deposits are called as Ocean deposits.

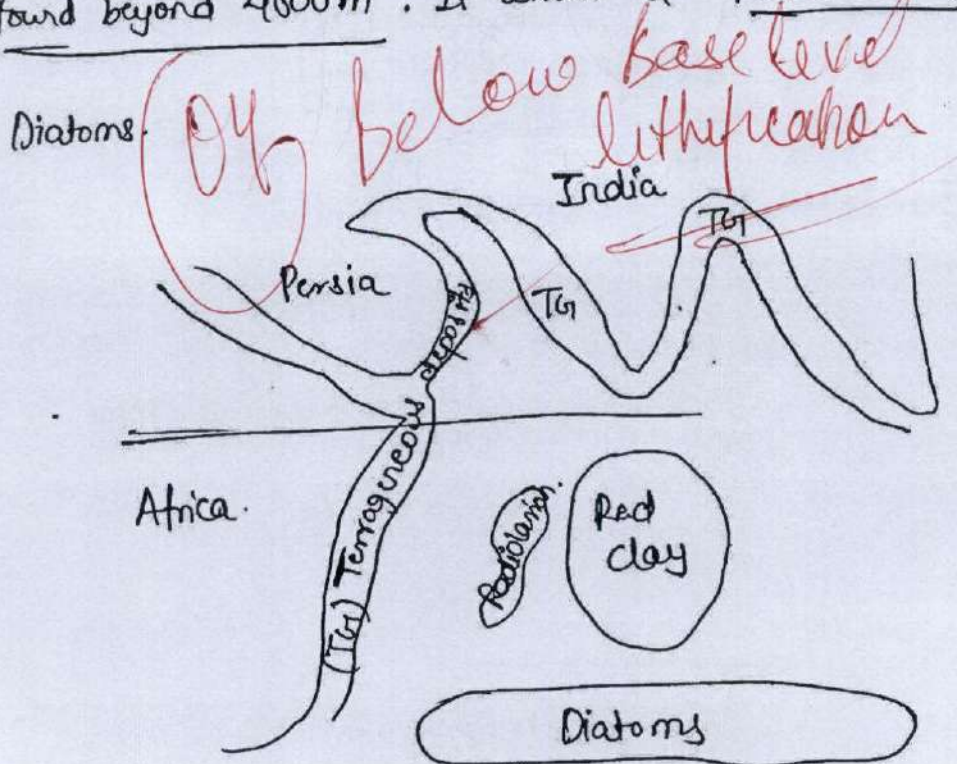


Candidate should not write anything in the margin

(a) Terrigenous deposits are found near the continental margins due to river deposited material. They are well sorted having boulders near coasts & silt, clay towards oceanwards.

(b) Biogenic deposits, the plants & animals deposits in Ocean is called as biogenic deposit. Calcium deposits are found upto depth of 4000m. beyond this range the oceans are unsaturated hence calcium dissolves hence this zone is called as calcium compensation depth.

Silicon deposits due to plants & animals are found beyond 4000 m. It consist of Radiolarian & Diatoms.





Que. 7. (c) Discuss mechanism of oceanic current.

15marks

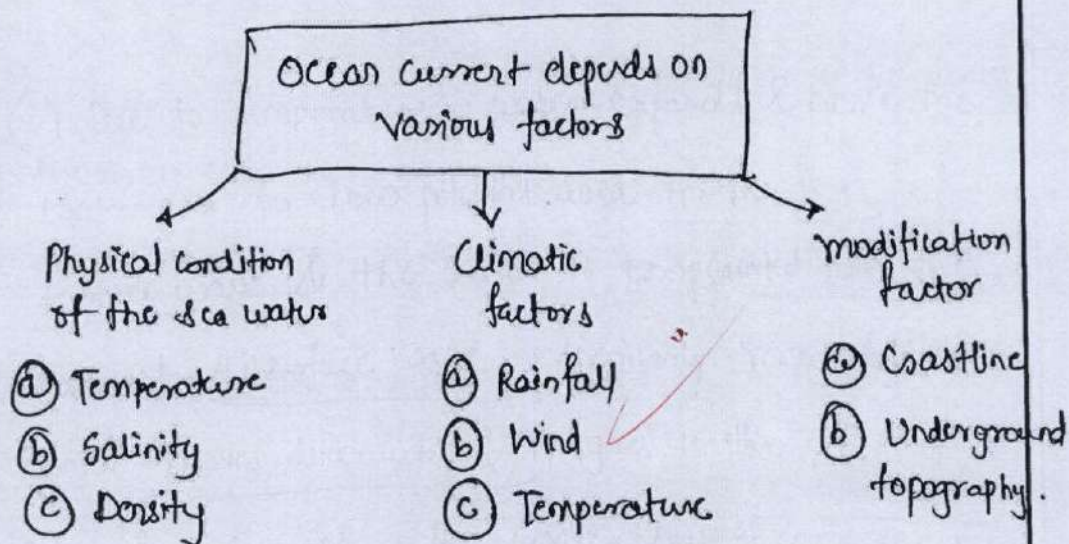
Ocean currents are, the horizontal
mass movement of water in particular direction
in Oceans.

Mechanism:-→

- ① When the wind travels over the ocean, the displacement of the ocean water takes place. However due to, the layeric mechanism, the direction of the ocean water is deflected from the wind direction.

② Subsequently the speed of the ocean water decreases due to loss of energy because of the frictional loss in the ocean layer mechanism,

③ But the entire length of the water column moves perpendicular to the direction of winds this phenomenon is called as Ekman's transport



(a) Due to temperature; water expands & hence the water goes to low potential area in the form of surface wave & the water is compensated in the form of subsurface wave, similarly more saline water moves downward & it goes in the form of subsurface current, the water lost is compensated

Candidate should not write anything in the margin

by the surface current

(09) Ekman's transport

summary

at the surface	at the surface	at the surface
at the bottom	at the bottom	at the bottom
at the surface	at the surface	at the surface
at the bottom	at the bottom	at the bottom
at the surface	at the surface	at the surface
at the bottom	at the bottom	at the bottom

... ..

... ..

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END

