

148
300

प्रश्न संख्या

मुख्य परीक्षा उत्तर पुस्तिका
(Mains Answer Sheet)



भाषा क्र. 1 संख्या
कौटिल्य एकेडमी
उत्तराखण्ड प्रवेश द्वार

1 A Cultivated land → Land grown with crops for production is known as cultivated land
It is fertile land

1 1/2

2 B Low → Low is a depression in the land surface on a local scale.
Eg of depression wind
→ leads to convectional rainfall

2

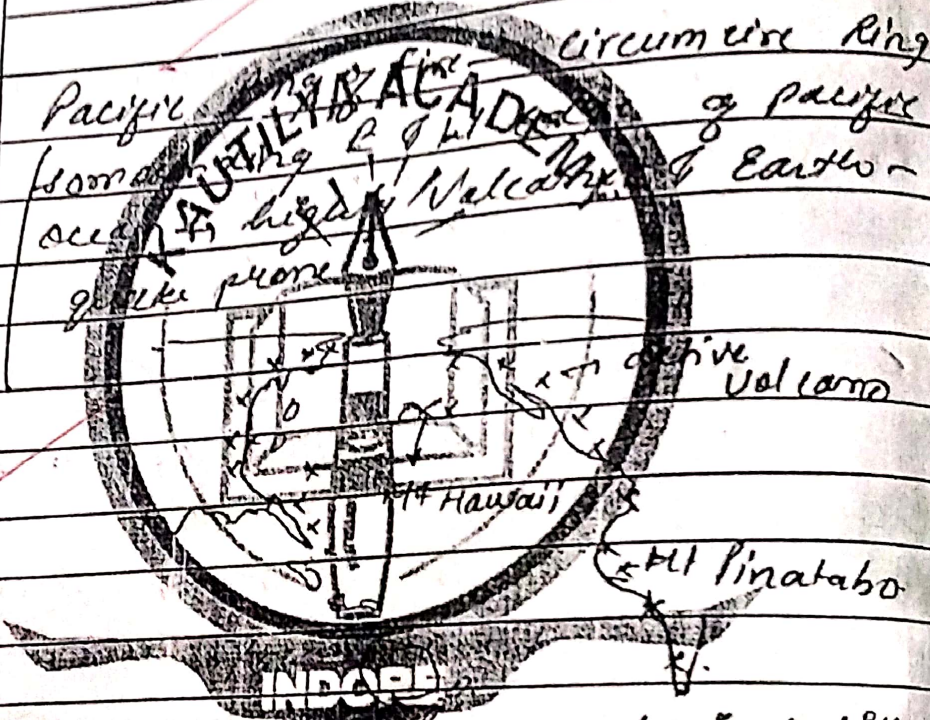
3 C Caldera → Volcanic mountain
→ get destroyed by itself due to violent volcanic eruption
→ Caldera - depression
→ Acidic lava

2

4 D Coral Bleaching → Expelling out of zooxanthellae (organisms) from calcareous deposit is known as coral bleaching
End of symbiotic relationship between zooxanthellae & calcareous deposit
Reason - Temp. rise, global warming, pollution.

2

प्रश्न संख्या	उत्तर	विवरण
1	F	Rift Valley → Depression / subsidence of land between two uplands ↳ Chain of volcanoes zone of subsidence ↳ Eg. Red sea, Normada Rift Valley
1	F	Pacific Ring of fire ↳ some of the highest volcanic Earth-quake prone ↳ Mt Pinatubo ↳ Hawaii
3	G	Moraine → Deposits of glacial till ↳ Result of glacial erosion ↳ Eg. Kailash, Kashmir Valley
3	H	mesa → End product of acid cycle of erosion ↳ small mono uplands in desert area / semi-desert ↳ Result of unroofing of axial plains





Sustainable development → Development
& social, Economic & Ecological of
present generation keeping in mind
the need of future generation

2



15

Chernobyl Atomic Reactor → On 26 April
1986 → Accident after in Chernobyl
Established in present day Chernobyl
Leakage of atomic radiation in
the city, ~~due to~~ reactor
went down.

2

Efficient irrigation systems → Irrigation
which takes into account water
conservation agenda.

15

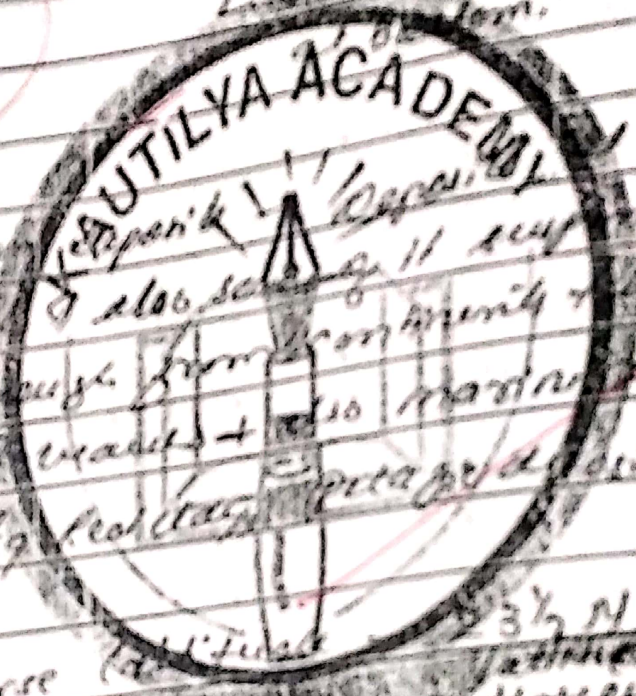
प्रश्न संख्या

Eg. Irrigation, drip, canal system.

Death Valley - in California, USA
 abnormally high temp. area.

1/2

Dead Sea
 Beach also sea level
 Dead Sea
 E.g. Dead Sea



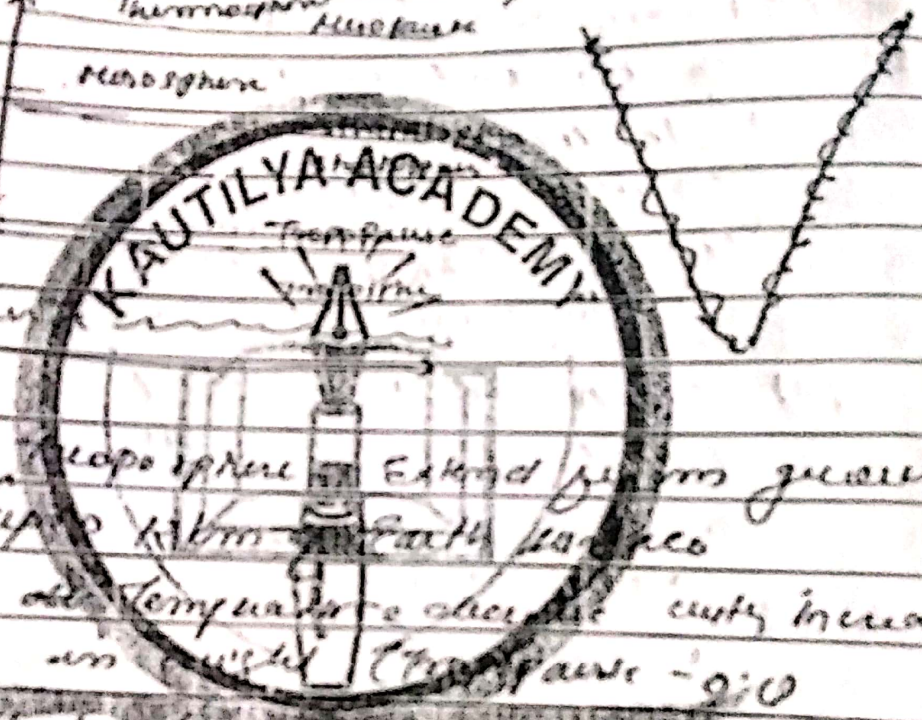
3 1/2 N - Tropic of Cancer
 known as Tropic of Cancer
 ancient seafarer - named it - due to direction of wind
 East wind blew here from E to W.

2

1 B

Atmosphere Layer

- ↳ Blanket air surrounding earth surface is known as atmosphere
- ↳ Divided into 5 layers
 - Thermosphere
 - Mesosphere



① Troposphere - Extends from ground level up to 12 km from Earth's surface
↳ Temperature decrease with increase in height (Tropopause - 9:0)

② Stratosphere - Extends from tropopause to 50 km from Earth's surface
↳ Temperature to increase with height
↳ Ozone layer present here

③ Mesosphere - Extends from stratosphere to 80 km from Earth's surface
↳ Temp decrease with height

④ Thermosphere - from 800 km to 2000 km
↳ Temp increase with height
↳ contains ionospheric layers

⑤ Exosphere - up to space



Factors of soil formation.

1] ~~Temperature~~ ^{Climate} ~~Temperature~~ ^{Temperature} & PPT

- precipitation play significant role
- eg High T & High PPT → laterite soil
- High T + Low PPT → sandy soil
- High PPT → Leaching occurs →

2] Rock ^{Parent Rock} Like igneous, sedimentary, ~~type~~ ^{type} soil eg Black soil of Deccan plateau result of Basaltic igneous rock

3] Vegetation ^{It decides the humus content of soil.} eg. tropical area - high humus content. eg. chernozem.

4] Climate ^{Pressure} affect type of soil. eg. High T → capillary action occurs → salt deposit. eg. Desert soil

5] Agents → like River as agent form alluvial soil, wind → leads to soil erosion.

3

1 D

Human factors causing change
in ecosystem

(a) Agriculture - converting forest
land to agriculture land
discovery of iron - industrialization -
mechanisation of agriculture - forest land
diversity

(2) Industrialization - poultry
Industrial poultry
rise affecting wildlife birds

(3) Urbanisation / Industrialisation -
Urban heat island effect
land productivity
%

(b) Consumerist culture - "There is
sufficient for everyone's need but
not anyone's greed" - MK Gandhi

(7) Mining - making earth scarce as
it's a limited mineral
deposits

There is need for implementation
of sustainable goals with complete
heart & soul,

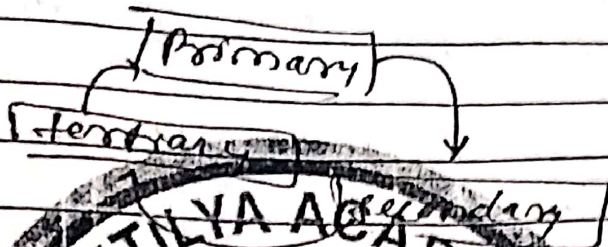


le



Supply chain management
A main driving cycle of economic activity

①



②

Raw material to market & consumer linkage

③

Raw material Industry -> market -> consumer

④

Linking MSME with large scale industry. MSME supplying semi-finished goods & spare parts to large scale industry

⑤

Logistics supply -> agricultural chain
& store house & transportation system

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4 16

Cause of migration

Rural to urban

Pull factor

Push factor

① Employment & Education

① Unemployment poverty leads to

unemployment & education leads to migration of rural people (generally men) to cities

② Cosmopolitan culture

② pressure on agr. culture → division

& standard of living in village people

among land holdings

③ Health care facilities & quality of life

declining productivity

development migration - largest - East due

④ Efforts of transformation

material reasons

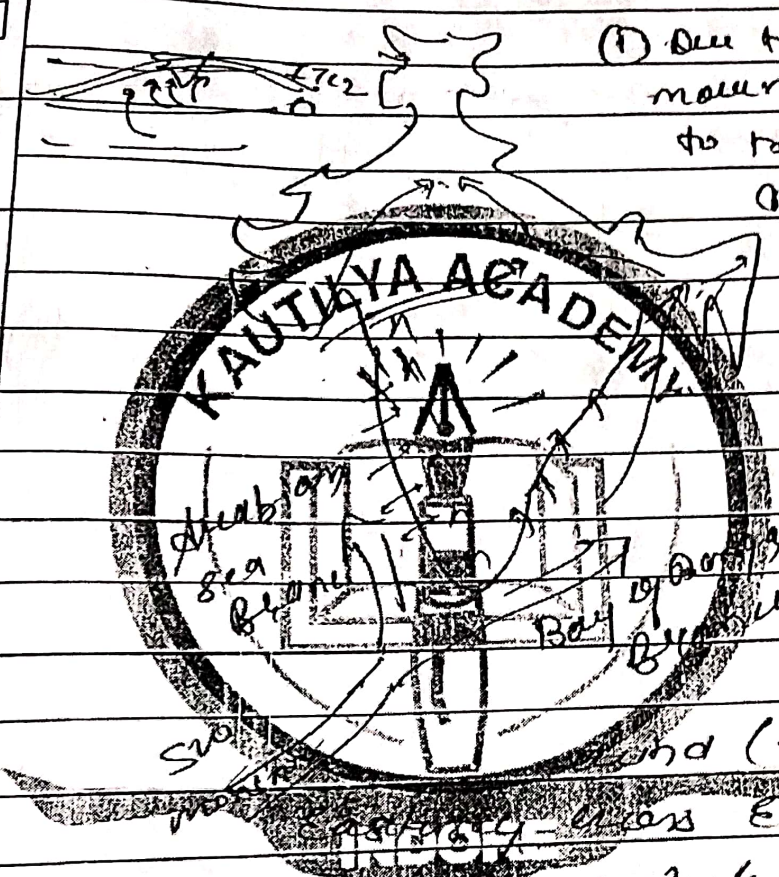
leads to firmness of agr. culture

Handwritten marks and scribbles in the bottom left corner.



1 I

Indian Monsoon



(1) Due to apparent movement of sun to tropic of cancer & subsequent movement of ITCZ ↓ led to formation of low pressure cell over Indian Peninsula ↓ Low pressure attracts wind (thus Southern wind) across Equator and become South westerly winds & strike Kerala

- (2) withdrawal of Jet stream from South of Tibet → led to Low pressure formation
- (3) Heating of their desert form Low pressure attract wind
- (4) Somalian Easterly Jet stream add monsoon winds

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1 C

Non conventional sources of energy →

↳ Energy derived from source which are in frequent use and involve a novel method of energy production from generally Renewable source of energy

Types of conventional sources of energy

(1) Solar Energy → Obtained from sun. Solar Energy converted into electric energy through photovoltaic plates of semiconductor. Renew Solar Project

(2) Wind Energy → वर्तमान ऊर्जा converted into electrical energy through उत्कला of wind mill by air & energy generated through turbine. एग in Rajasthan, Gujarat

(3) Tidal Energy → Energy generated through tides → Turbine move when water enter & move out during high tide & low tide. एग in West Bengal, TN coast

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मुख्य परीक्षा उत्तर पुस्तिका
(Mains Answer Sheet)



भारत का नं. 1 संस्थान
कौटिल्य एकेडमी
संपन्नता का प्रवेश द्वार

<input type="checkbox"/>	<input type="checkbox"/>	(4) Geothermal Energy → Energy generated through conversion of Heat Energy of Earth to Electrical Energy with the help of water Eg, Puga Valley Himachal Pradesh
--------------------------	--------------------------	---

<input type="checkbox"/>	<input type="checkbox"/>	(5) Bio Energy produced from organic waste to a manure
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	Current Status: Indian Prime Minister pledged to produce 450 GW of Renewable Energy by 2030.
-------------------------------------	--------------------------	--

<input type="checkbox"/>	<input type="checkbox"/>	Target: 100% solar energy, 100% wind energy, 100% Nuclear
--------------------------	--------------------------	---

put M.P. covered Spills

3	D.	Ocean salinity → It is the amount of dissolved salt content in ocean water. Salts of Sodium, Magnesium, Chlorides etc contribute to ocean salinity.
		Factors affecting salinity →
		(1) Temperature → High temperature → High evaporation → High salinity at sea surface
		(2) Ocean currents → Being deep cold water from poles and this decrease salinity
		(3) Distance from coast → Rivers & waves bring sediments from land & increase salinity ↳ also rivers bring freshwater → less salinity. Eg Dead sea
		(4) Latitude → at low latitude (Equator & tropics) High salinity due to sun's overhead location, high latitude → less salinity

(5) Location of water Body -

Enclosed sea is more saline in low

latitude ~~eg~~ Eg. Mediterranean sea

whereas enclosed sea less saline in

high latitude due less exposure

to saline ~~Asian~~ water eg

North

Salinity variation with depth



7

Salinity decrease with depth, But generally,

at But at certain depth it becomes

almost constant & known as

Thermohaline layer

In polar high latitude (Polar Region) there



3 E

Sudden shaking of earth due to a tectonic disturbance is known as earthquake.

Causes

Natural

Manmade

1) Tectonic instability (plate movement)

Dam Rupture

2) Volcanic Eruptions (Vibros)

mine collapse

3) Meteoroid/Comet/Asteroid strike

Tectonic instability → due to plate convergence & divergence → form mountains

Volcanic Eruptions → Volcanic Eruption is generally accompanied by Earthquake

Meteoroid strike → from outer space → give a huge impact → led to Earthquake

Dam Rupture is a Dam Construction &



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failure can lead to earthquake

Mine collapse → if technology of mine collapse → result into earthquake

2001 Kutchh Earthquake

On 26/1/2001, a devastating earthquake

struck the Kutchh region of Gujarat. It measured 9.8 on

Richter scale

Impact → around 300 people died

→ about 2 lakh of houses, buildings destroyed

→ infrastructure (transport, communication lines, telephone lines) damaged

→ Thousands of people injured

→ Around 2 crore of \$ Economic loss occurred

Causes → Plate movement between Indo-Australian plate

→ Infrastructure not according to Building

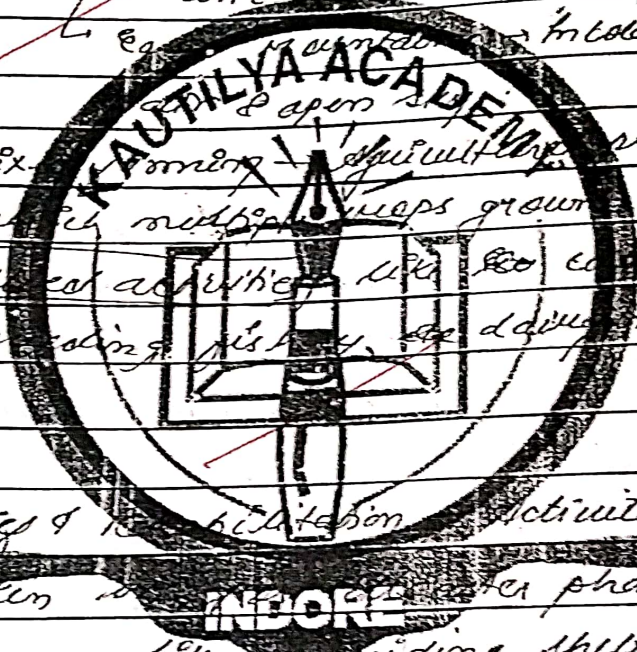
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(Mains Answer Sheet)

1 a Temperature Inversion \rightarrow Increase in temperature within decrease in altitude against the general law of normal lapse rate

13 \rightarrow cold air mass \rightarrow occurs when warm air comes in contact with cold surface
e.g. mountain top \rightarrow in cold night, calm & open slope

1 b relief \rightarrow activities in mountainous regions grow along with relief activities like cattle rearing, beekeeping, fishing, etc



1 c Relief & Rehabilitation activities undertaken in the later phase of DM cycle. Like providing shelter, food, water to victims of disaster.

1 d Relative Humidity \rightarrow amount of moisture contained in the air compared to total capacity of holding moisture in air \Rightarrow Moisture content of air $\times 100$ at T temperature, total capacity to hold moisture

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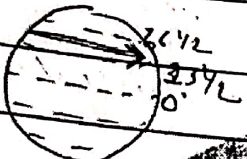
मुख्य परीक्षा उत्तर पुस्तिका
(Mains Answer Sheet)



गारा क्र. 1 संख्यान
कौटिल्य एकेडमी
सफलता का प्रवेश द्वार

1 e

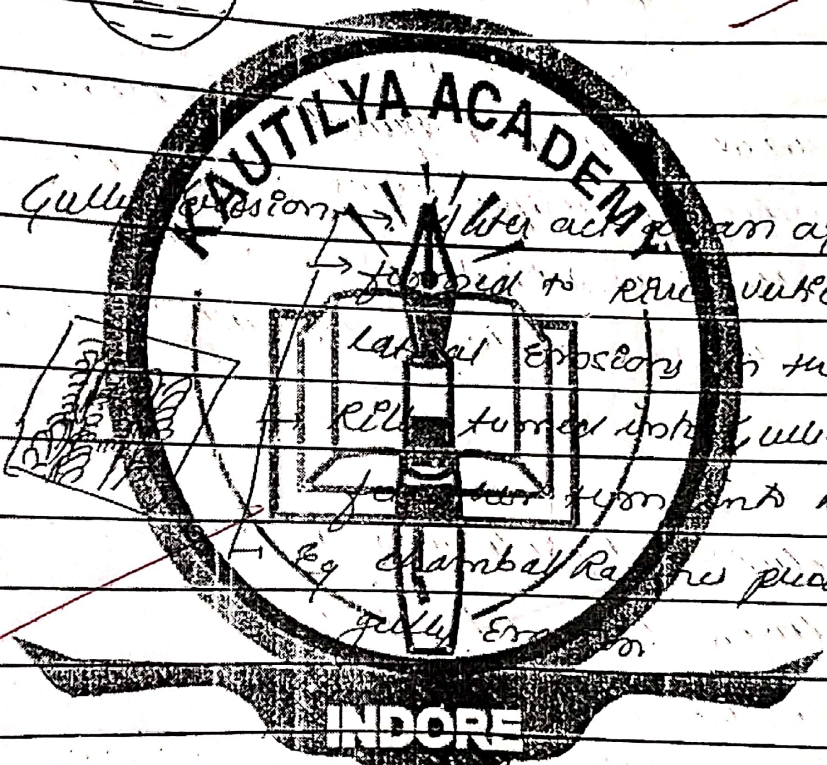
Jet stream → Geostrophic wind - Blow parallel to latitude in W to E direction
→ between 35-60°N & S latitude
also known as Rossby waves



7

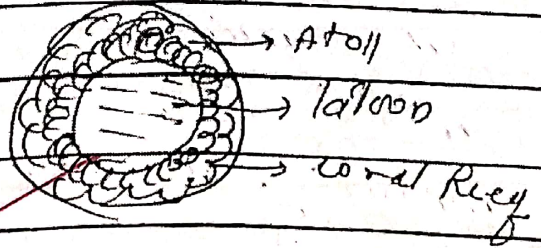
1 h

Gully erosion → Water acts as an agent
→ exposed to R.P.C. vertical & lateral exposure in the soil.
Rills turned into gullies which further turn into ravines.
eg Chambal Ravine the product of gully erosion.



1 9

Atoll → narrow island ~~area~~ formed by coral reefs & surrounding lagoon inside it.
→ formed of calcareous deposits & shallow lagoon lake



10



मुख्य परीक्षा उत्तर पुस्तिका
 (Mains Answer Sheet)

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1 h.

Albedo → Reflection of ^{sun's} light back to the space is known as Albedo Effect
 → Ice has highest albedo on Earth surface. Along with it white clouds also contribute
 → help maintaining Earth's temperature

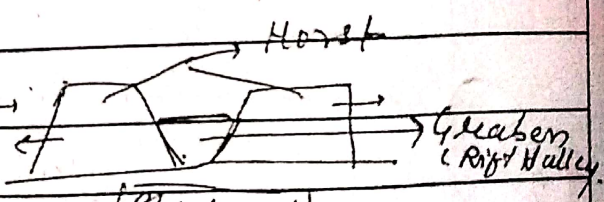
4 I

Gandhinagar Dam → Constructed on Chambal River
 → in Kota Rajasthan.
 → part of the electric project
 → Rajasthan

1 J

Solar constant → It is the amount of solar radiation constantly maintained & absorbed Earth's surface. It is the heat budget of Earth's surface.

1 K

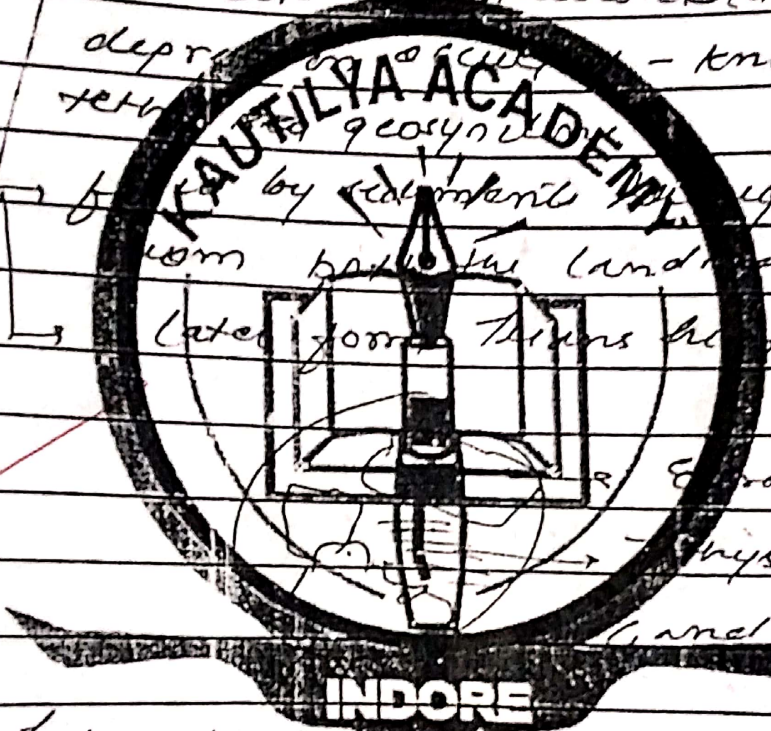
Block Mountain → 
 → formed due to subsiding of landmasses between two uplands forming horst
 → formed due to Normal slip faulting occur due to tensional force
 → Eg. Vosges Mt, Blackforest mt (Germany), Vindhayachal & Satpura (MI).

1 2

Narmada & Tapi - form estuary in Arabian sea

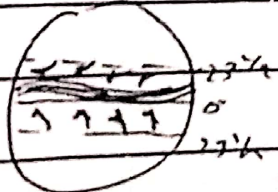
1 M.

Tethys Geosyncline → Between Eurasian landmass & Gondwana land → a depression or a trough - known as tethys geosyncline - formed by sediments brought by river from both the landmasses later form Tethys sea



1 N

Inter tropical Convergence Zone →



↳ Belt where Easterlies from N & S meet
↳ also known as Doldrums
↳ shift with apparent movement of sun
↳ Responsible for Indian monsoon

मुख्य परीक्षा उत्तर पुस्तिका
(Mains Answer Sheet)

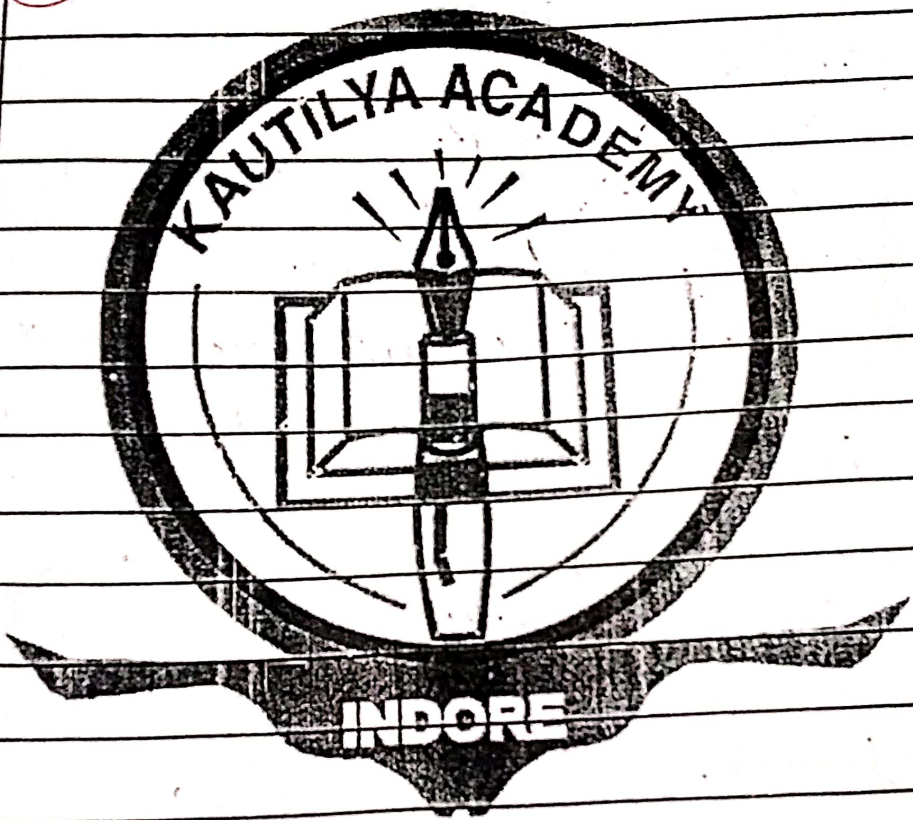
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Cropping Intensity \rightarrow crop grown on an area of land.

$$\frac{\text{Net sown area} \times 100}{\text{Total area of land}}$$

15





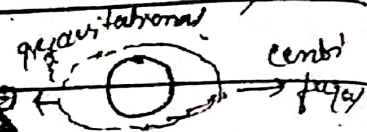
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C

Spring tides & Neap tides.

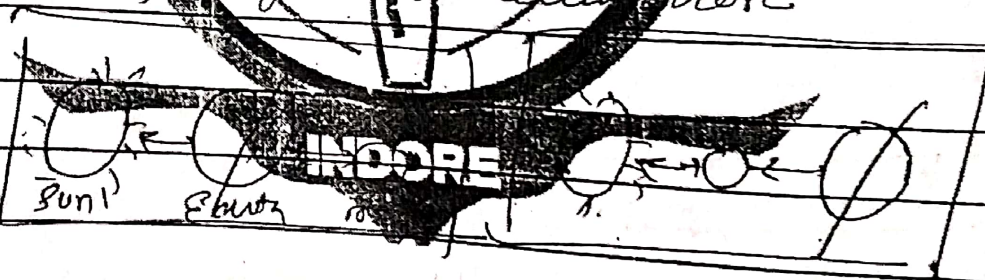
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Tides occur due to gravitational pull of sun and moon, and rotational centrifugal force. It is ~~caused~~ gradual rise & water - Vertically over the coast.

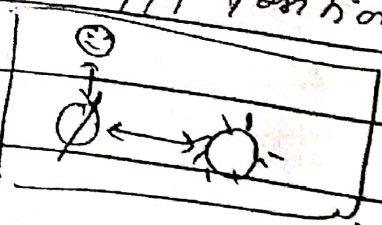


Spring tides → It occurs when sun, moon and Earth are in 180° position to each other (in line).

It occurs twice a month. On full moon & new moon. Exceptionally high tide occurs here.



Neap tides → It occurs on 7th day of new moon and full moon. It also twice a month. Exceptionally low tide occurs here. Here sun, moon & Earth are in syzygy position. at 90° angle.



4



2	A	<p>Soil is the unconsolidated upper layer on Earth's surface composed of minerals, organic material, etc.</p>
		<p>Due to natural & manmade activities there is frequent erosion taking place.</p>
		<p>→ Shelter belts are used along the direct line of erosion</p>
		<p>→ Afforestation & reforestation (Govt judgement - Delhi construction site)</p>
		<p>Step for soil conservation: afforestation fund → for development project</p>
		<p>→ Contour Bunds, check dams, shelter Belts.</p>
		<p>→ Govt order for Reclamation of Badland topography of Chambal</p>
		<p>→ artificial River Banks, Trees grow around agricultural field</p>
		<p>→ Mulching on agri field to conserve soil</p>
		<p>→ Traditional methods Encouraged - like stepped agri on hill slopes</p>

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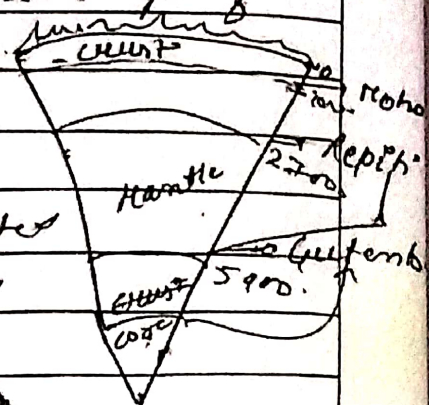
मुख्य परीक्षा उत्तर पुस्तिका
 (Mains Answer Sheet)

2	P	Requisites for forward & backward linkages of industries
		Raw material, Market are two crucial factors for working of any industry apart from labour & capital.
		→ connecting farmers to agro based industry through laws like Backward Linkage
		→ transport especially for iron & steel industry connecting to coal & iron mines.
		→ just supply of perishable raw materials like sugarcane
		legislation → tax benefits to industry to set up in suitable
		protecting & production
		interest
		→ Labour mkt - through labour laws
		Forward linkage → Market → nearest location required for perishable commodities like in Agri based food processing industry
		→ Market laws → like APMC, fair trade practices → to make fair competition in market

Q	A.	
<input type="checkbox"/>	<input type="checkbox"/>	Problems of Indian agriculture
<input type="checkbox"/>	<input type="checkbox"/>	(1) Land → fragmented land holding among family members. A Max no. of land cases pending in courts
<input type="checkbox"/>	<input type="checkbox"/>	(2) Mechanisation → fragmented lands make difficult to be mechanised
<input type="checkbox"/>	<input type="checkbox"/>	Co-operative farming
<input type="checkbox"/>	<input type="checkbox"/>	(3) New cultural values → farmers unrest
<input type="checkbox"/>	<input type="checkbox"/>	case to APMC (cases), centrally financing
<input type="checkbox"/>	<input type="checkbox"/>	(4) Privatisation of land holding in APMC
<input type="checkbox"/>	<input type="checkbox"/>	schemes lead to loss of Revenue to farmers
<input type="checkbox"/>	<input type="checkbox"/>	farmers less incentives to invest
<input type="checkbox"/>	<input type="checkbox"/>	(5) Mono culture → MSP for certain products - discouraging other crops like coarse grains & traditional crops
<input type="checkbox"/>	<input type="checkbox"/>	(6) Green Revolution → Benefitted selected Region of India → affects Land fertility degraded, Excessive fertiliser use, soil salinization (Rw).



2	J	<p>Earth's interior → made up of 3 layers → crust, Mantle, core</p>
		<p>Each layer is separated from each other by a discontinuity</p>
		<p>(1) Crust → upper solid layer → made of long horizontal & oceanic crust</p>
		<p>solid material, separated from mantle by Mohorovicic</p>
		<p>(2) Mantle → upper mantle → semi-solid</p>
		<p>lower mantle → liquid</p>
		<p>separated by core from depth discontinuity</p>
		<p>(3) Core → outer core - liquid</p>
		<p>inner core - solid</p>
		<p>made of Iron & Nic</p>
		<p>Curtenberg dis continuity separates outer & inner core</p>



27/11/2024
 15/11/2024

2 K

Water irrigation facilities
It is significant for water
conservation and soil conservation.

→ Various methods are used for
micro irrigation like →

1) Drip irrigation → (and pipes with
valves directly & supplies

water to the plants directly & flooding
fields irrigation through

2) Fertigation → mixing fertilizer
with water & spread through
sprinkler.

Importance

↳ It helps in soil from becoming
saline

↳ Ind. water scarce country → 24%
of fresh water

↳ ~~Sau crops~~ - provide adequate
water



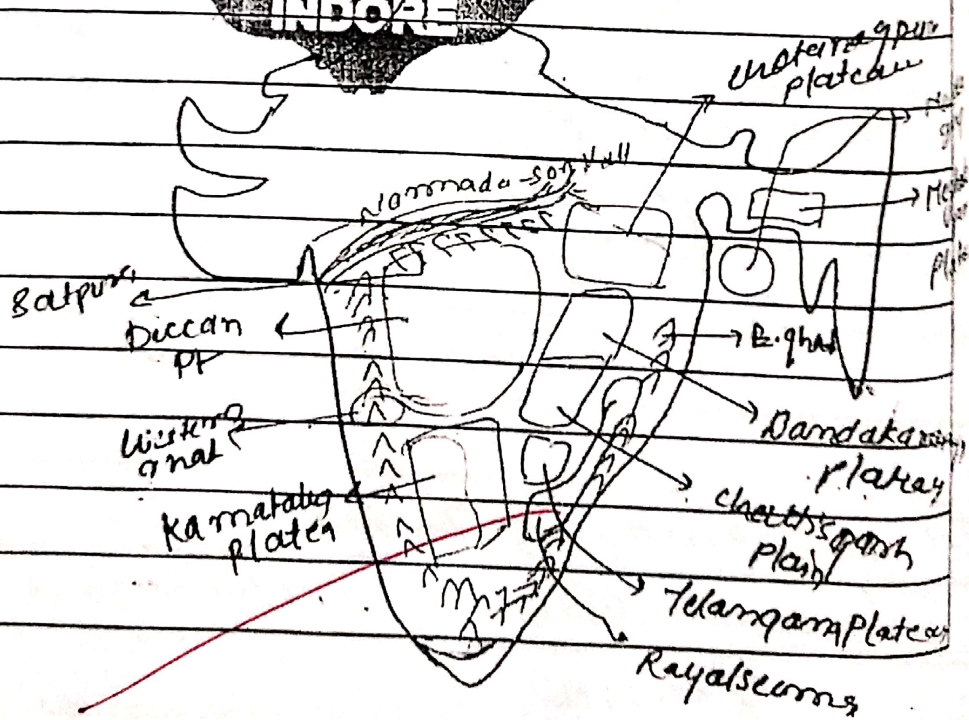
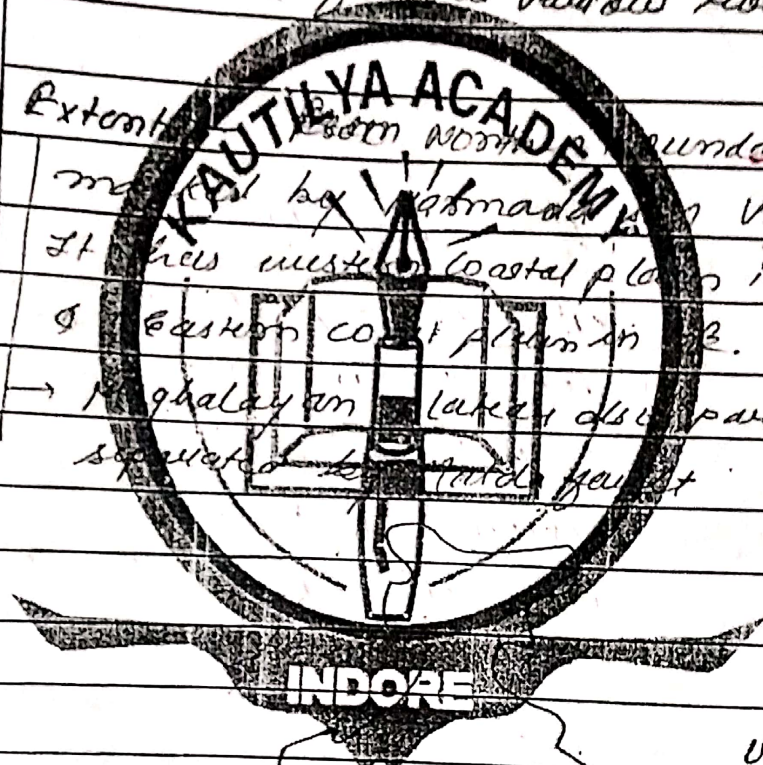
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8 A

Peninsular plateau

It is part of Gondwana Landmass.
It has witnessed various age from Cambrian, Ordovician, Uddapan, Carboniferous and thus formed various rock types.

Extent: Eastern North Indian peninsula is marked by Narmada valley. It lies between coastal plains in West & Eastern coast of India.
→ Meghalayan lakes also part of it separated by high forest



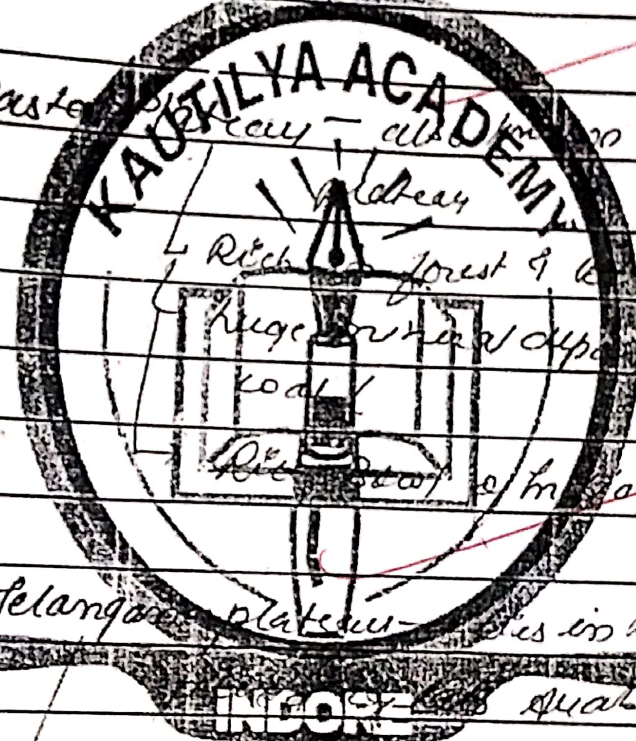


3

↳ formed of Pat lands. (plateau with hill like features)

↳ Various physiographic divisions → Rajpura hills, ~~Basaltic~~ Rarngach hills etc.
Rich in mineral deposit - Fe, Mn, Al, Mg etc.

4) ~~Bastar Plateau~~ - ~~located in~~ Bastar



↳ Rich forest & biodiversity
↳ huge reserve deposit of iron & coal
↳ ~~Rich~~ ~~source~~ of ~~iron~~

5) Telangana Plateau - lies in Rajpura hills

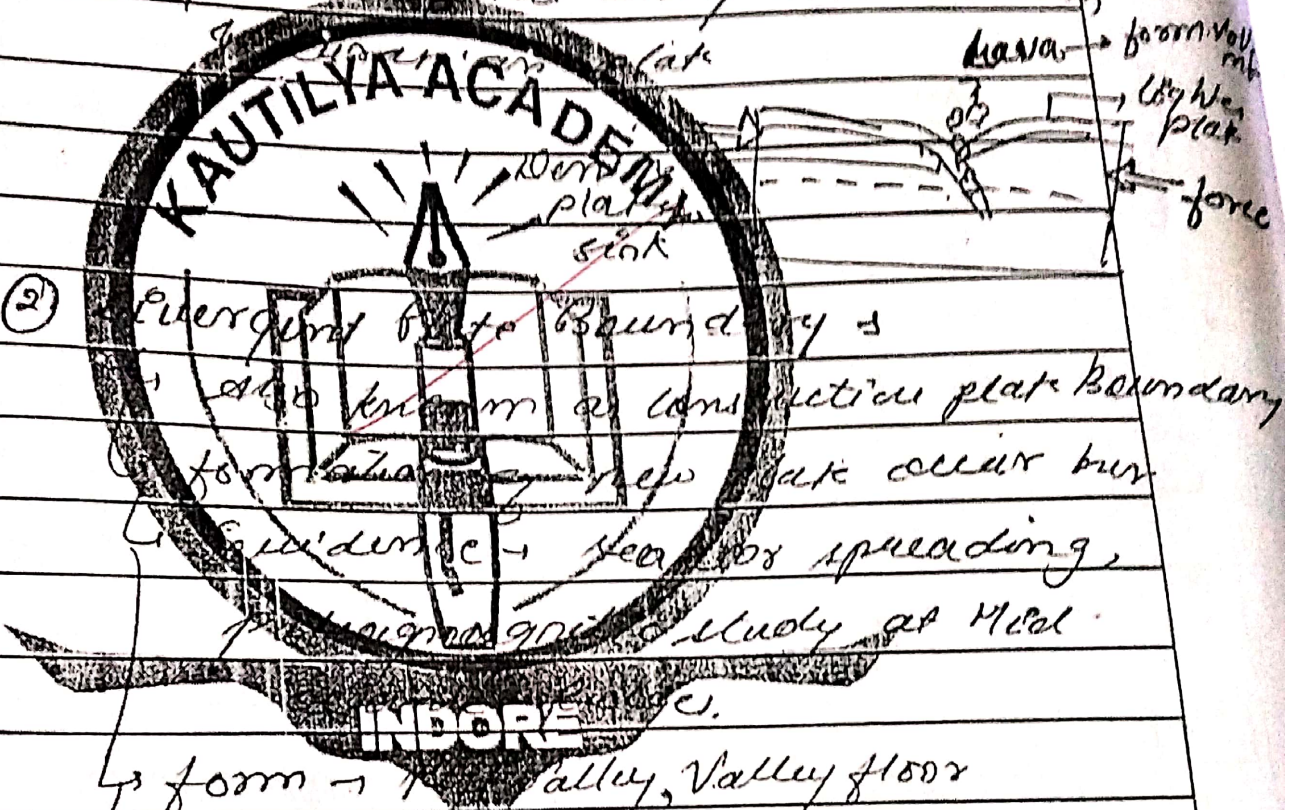
↳ some ~~high~~ due to Bay of Bengal
↳ mineral deposits found.
↳ Red-lateite soil.

8 1/2

6) Rayal seema & fertile plains

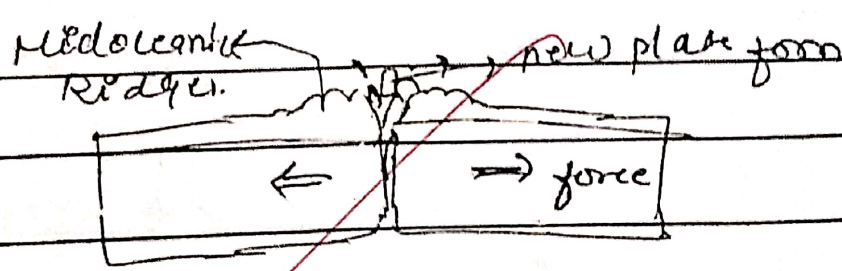
↳ Rainfall plenty from Bay of Bengal Branch
↳ Rice, groundwater cultivation.

- Ends of plate
- form fold mountains, volcanic islands,
- Eg Himalayan mt, Atlas mt, Alps, Rockies, Andes.
- Eg convergence along Indo Australia



② ~~Emergent Plate Boundary~~ →
 also known as constructive plate boundary
 formation of new plate occur but
 evidence → sea bed spreading,
 paleomagnetism study at Mid.

- form → valley, valley floor
- translational force applied



③ ~~Transform plate Boundary~~ →
 due to unequal convergence
 & divergence activity in plate and

