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GENERAL STUDIES (TEST CODE : 2418)

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|-------------------|----------------|---------------------|---------|
| Name of Candidate | HRITWIK RANJAN | | |
| Medium Eng./Hindi | ENGLISH | Registration Number | 1085424 |
| Center | | Date | |

INDEX TABLE

| Q. No. | Maximum Marks | Marks Obtained |
|--------|---------------|----------------|
| 1 | 10 | |
| 2 | 10 | |
| 3 | 10 | |
| 4 | 10 | |
| 5 | 10 | |
| 6 | 10 | |
| 7 | 10 | |
| 8 | 10 | |
| 9 | 10 | |
| 10 | 10 | |
| 11 | 15 | |
| 12 | 15 | |
| 13 | 15 | |
| 14 | 15 | |
| 15 | 15 | |
| 16 | 15 | |
| 17 | 15 | |
| 18 | 15 | |
| 19 | 15 | |
| 20 | 15 | |

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
- There are **TWENTY** questions printed in **HINDI & ENGLISH** इसमें बीस प्रश्न हैं हिन्दी और अंग्रेजी में छपे हैं।
- All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
- The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
- Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other than the authorized one.
प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
- Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
- Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

16-B, 2nd Floor, Above National Trust Building, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp Punjab & Sindh Bank), Dr. Mukherjee Nagar
Delhi- 110009

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

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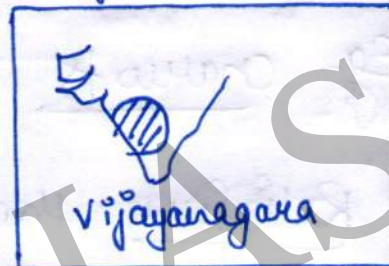
All the Best

1. विजयनगर साम्राज्य की मूर्तियों में अंतर्निहित प्रमुख लक्षणों का सविस्तार वर्णन कीजिए।

Elaborate on the key traits inherent to the sculptures of the Vijayanagara Empire. (Answer in 150 words)

10

Vijayanagara empire flourished in Deccan region (Modern Day Karnataka) in 14th-16th century and brought about several innovations in sculpture art.



Key traits of Vijayanagar sculpture

- 1) Use of metals was prevalent
Eg - Statue of Krishna deva Raya with two queens is made of metals
- 2) Sculpture making progressed from lost-wax technique (during Cholas) to metal casting technique
- 3) Sculptures were made in long-form portraits. Eg - Lepakshi temple portraits

4) Both 3-D sculptures and sculptures on wall relief were made.

Eg- Sculptures on walls of Virupaksha Temple

5) New forms of sculptures came up.

Eg- chariots in Hampi

6) Religious themes were portrayed through sculptures.

Eg- Ramayana Jatayu sculpture in Virbhadra Temple

7) Size of sculptures increased drastically showing grandeur

8) Influence of Islamic features.

Eg- Due to Bijapur sultanate in proximity.

Vijayanagan empire was the epitome of architecture and sculpture in Medieval India ⇒ UNESCO World Heritage Sites in Hampi

2. महिला क्रांतिकारियों ने भारतीय स्वतंत्रता संघर्ष में साहसिक और अविस्मरणीय योगदान दिया है। चर्चा कीजिए।

Women revolutionaries made brave and unforgettable contributions to the freedom struggle in India. Discuss. (Answer in 150 words) 10

Indian freedom struggle was an inclusive movement for independence with participation of peasants, workers, students, industrialists and most importantly women.

Brave and unforgettable contributions

- 1) Participation in violent revolutionary activities. Eg- Prahlata Waddadar in Chittagong Armory Raid
- 2) Individual heroic activities to instil terror among British
Eg- Beena Das & Shanti Ghosh assassination attempts
- 3) Participation in underground revolutionary activities during Quit India Movement.
Eg- Usha Mehta, Aruna Asaf Ali

4) Participation in armed conflict
against British

Eg - Captain Lakshmi Swaminathan
in Acad Hind Fauz

5) Involvement in numerous
revolutionary activities.

Eg - Sheltering freedom fighters
- Delivering secret messages, spying

6) Participation in Gandhian movements

Eg - Sarojini Naidu in breaking salt law
at Dharasana Salt works 1930.

7) Communist movements against British.

Eg - Nalini Gupta

8) Presided over INC sessions.

Eg - Sarojini Naidu

9) Political propaganda against British.

Eg - Annie Besant Home Rule

10) Foreign activities - Eg - Bhikhaji Cama (Paris)
Women were always at forefront
of freedom struggle and also after independence
in various movements

3. चर्चा कीजिए कि अंग्रेजों द्वारा भारत में अंग्रेजी शिक्षा की शुरुआत ने किस प्रकार देश में उपनिवेशवाद विरोधी प्रवृत्ति को मजबूत करने में सहायता प्रदान की है।

Discuss how the introduction of English education in India by the British helped strengthen anti-colonialism in the country. (Answer in 150 words) 10

Anti-colonialism in India was partially a result of British policies and partially a response to British policies. Policy of English education by Benhick in 1835 and Macaulay in 1853 were manifestations of this.

English education ⇒ Anti-colonialism

1) Rise of educated, western ideas among intelligentsia

Eg - Dadabhai Naoroji

2) In-depth analysis of British policies by English educated Indians.

Eg - 'Drain Theory' by Naoroji.

3) Propagation of national ideology among leaders from different linguistic backgrounds. Eg - English acted as a

common binding language.

4) Productive participation in Council debates ⇒ Scrutiny of British policies like Council Act

Eg - Crookhall used councils to debate various issues

5) Response to imposed westernization

Eg - Replacement of Persian as court language by Bentick ⇒ Grievances ⇒ Anti-colonialism

6) English acted as channel of fruitful negotiations between Englishmen and British. Eg - Round Table conference

7) Inculcation of western, liberal ideas of democracy and Parliament through English education.

Despite no intention by British to inculcate anti-colonial ideas, English acted as a catalyst to the freedom struggle.

4. 20वीं सदी के अंत में सोवियत संघ के विघटन का भारत पर दूरगामी प्रभाव पड़ा है। चर्चा कीजिए।

The disintegration of the Soviet Union in the late 20th century had a profound impact on India. Discuss. (Answer in 150 words) 10

USSR disintegrated in 1991 due to multiple internal and external factors, ending the cold war with victory of capitalist western block.

Reasons behind disintegration

1) St Economic stagnation in USSR

Eg- Falling agricultural production and rising prices

2) Reforms introduced by Gorbachev

Eg- Glasnost, Perestroika

3) Fall of communist regimes.

Eg- Poland, Bulgaria

4) Popular movements in multiple

USSR allies.

Eg- Hungary

Propound impact on India

- 1) India had to fine-tune her foreign policy to give more space to Western block. Eg - Negotiations with IMF started
- 2) Economic reforms as USSR could no longer support India's closed economy. Eg - LPG reforms 1991
- 3) Disillusionment with USSR's socialist model of economy. Eg - Shift to a mixed economy model
- 4) Rise of new liberal democracies in near proximity of India. Eg - Eastern European countries
- 5) Increased impact of USA in India's neighbourhood. Eg - Afghanistan.

Post Cold war era led to a unipolar world led by USA with increased socio-economic and cultural impact of West on India and world.

5. मौजूदा मुद्दों को ध्यान में रखते हुए, भारत में शहरी अवसंरचना और परिवहन (मोबिलिटी) सेवाओं में सुधार की आवश्यकता पर लैंगिक दृष्टिकोण से चर्चा कीजिए।

In view of the prevailing issues, discuss the need for reforming the urban infrastructure and mobility services in India through a gender lens. (Answer in 150 words)

10

Urban areas comprise of ~35% population and contribute to ~65% of India's GDP.

Need for reforming urban infrastructure

1) Urban infrastructure is highly polluting and eco-unfriendly

Eg - 75% of greenhouse gas

2) Non-convenient to women.

Eg - women safety is compromised in buses, trains. Eg - Nirbhaya case

3) Non-availability of basic urban amenities for transgenders.

Eg - No separate toilets in public places.

4) Lack of late-night mobility services for women to ensure safety.

Eg - late night women buses and cabs.

5) Lack of crèche services and child-care services close to place of work.

Measures needed

1) Investment in separate washrooms, crèche services for women and transgender

Eg - Swachh Bharat Mission goals

2) Creation of women-friendly mobility services. Eg - Separate areas in buses similar to metro trains

3) Safe and secure public spaces like park. Eg - AMPUT

4) Regular police patrolling.

Inclusive urban infrastructure is crucial to achieve SDG 5 of women empowerment.

6. भारत में, 2011-21 में वृद्धजनों की जनसंख्या की वृद्धि दर सामान्य जनसंख्या की वृद्धि दर से लगभग तीन गुना थी। इस संदर्भ में, चर्चा कीजिए कि वृद्धजनों हेतु नीतियों का निर्माण भारत के समग्र विकास के लिए एक महत्वपूर्ण पहलू क्यों है।

In India, the rate of growth of elderly population in 2011-21 was about three times the rate of growth of the general population. In this context, discuss why policies for the elderly are a crucial aspect for India's overall development. (Answer in 150 words) 10

Rate of growth of elderly population
in FY21 was ~36% which was 3X
of general population growth ~13%.

Need for better policies

1) Increased government expenditure
on elderly welfare.

Eg - Vaay Vandana Yojana

2) Feminization of old age

Eg - 7 crore female elderly,
compared to 6.5 crore males.

⇒ Social, economic and health issues

3) Increasing crimes against elderly

Eg - Rohini murder case

4) Increasing isolation and depression

Eg - 8% suicides in India

5) Poor access to affordable health care.

Eg - 65% non-communicable diseases

⇒ Disproportionate impact on elderly.

Reforms needed

1) Welfare measures

Eg - Pension schemes (NPS)

2) Old-age homes for neglected elderly

3) Legal protection for from abandonment
from children.

4) Financial empowerment through
skill development. Eg - PMKVY.

Integration with mainstream
is crucial to empower elderly people.

7. यद्यपि वैश्वीकरण मानवाधिकारों के उल्लंघन के लिए कथित तौर पर जिम्मेदार है, तथापि यह मानवाधिकार आंदोलनों को इसके अतिक्रमण और नकारात्मक प्रभावों का मुकाबला करने की अनुमति देता है। प्रासंगिक उदाहरणों के साथ सविस्तार वर्णन कीजिए।

While globalisation is allegedly responsible for human rights violations, it allows human rights movements to counter its excesses and negative effects. Elaborate with relevant examples. (Answer in 150 words) 10

Globalization is the large scale movement of people, capital and ideas across borders. It has created benefits and challenges such as human rights violations.

Responsible for human rights violation

- 1) Persecution of migrants in host countries.

Eg - Expulsion of Muslim refugees in Poland, Myanmar Rohingyas

- 2) Armed protests by migrants in Europe. Eg - France riots

- 3) Increased invasion of poor

countries by rich countries.

Eg- US invasion of Afghanistan

4) Use of social media (product of globalization) to provoke riots.

Eg- Delhi riots 2020.

Movements to counter

1) Free flow of ideas to counter human right violations.

Eg- Global condemnation of Israeli activities in Gaza.

2) Spread of peaceful protests through social media. Eg- CAA protests

3) Increased transparency and accountability of government. Eg- Gujarat Riots.

Globalization is a double-edged sword and can be used to provoke and prevent violations.

8. हिमालय की वर्तमान अपवाह प्रणाली काफी हद तक क्रमिक नदी अपहरण का परिणाम है। चर्चा कीजिए।

The present drainage system of the Himalayas is, to a great extent, the result of progressive river piracy. Discuss. (Answer in 150 words) 10

Himalayan drainage system is suffering from multiple challenges of reduced river flow etc. that has caused water insecurity.

Present condition

- 1) Reduced navigability due to low volume. Eg - Yamuna
- 2) Siltation of rivers. Eg - Indus river
- 3) change in river course.
Eg - Kosi river
- 4) Poor water quality. Eg - Ganga at Kanpur coast.

Result of river piracy

1) Reclamation of Teyrai region for settlements ⇒ Encroachment of wetlands

Eg- UP, Bihar

2) concretization of green belts and water bodies

3) Establishment of industries, factories at coast ⇒ Pollution

⇒ Poor quality.

Eg- Tanneries in Canpur

4) Agricultural emissions ⇒ Poor

quality of water ⇒ Hypoxic zones

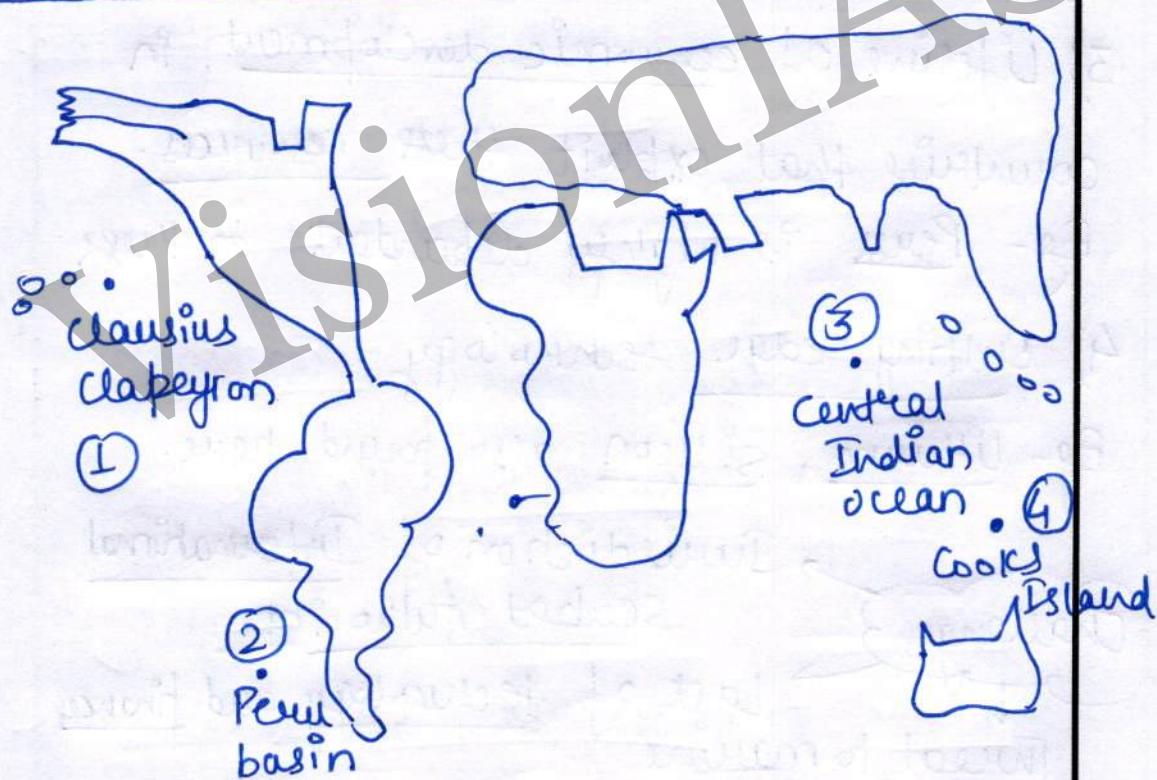
Eg- Western UP, Punjab

5) Groundwater overexploitation ⇒ Water
table reduces

9. बहुधात्विक ग्रंथिकाओं (पॉलिमेटेलिक नोड्यूलस) के भौगोलिक वितरण का उदाहरण प्रस्तुत करते हुए, उनके महत्व पर चर्चा कीजिए।

Illustrate the geographical distribution of polymetallic nodules and discuss their significance. (Answer in 150 words) 10

Polymetallic nodules are minerals rich in Manganese and Iron in concentric layers around its core. These are found in 7% sea bed globally, but concentrated in certain hubs.



Geographical distribution of
Polymetallic nodules

Significance

1) Important source of manganese and iron.

Eg- Crucial in electronics and manufacturing industries

2) Source of other minor minerals.

Eg- Zinc, Lead

3) Lifeline of economic development in countries that exploit these resources.

Eg- Peru is highly dependant on these

4) Cutting edge technology.

Eg- Lithium, silicon also found here.

Challenges → Jurisdiction of International Seabed Authority
→ Lack of technology and finance
→ Threat to marine biodiversity

India has been granted permission to explore Polymetallic Nodule in Indian ocean ⇒ \$5 trillion economy

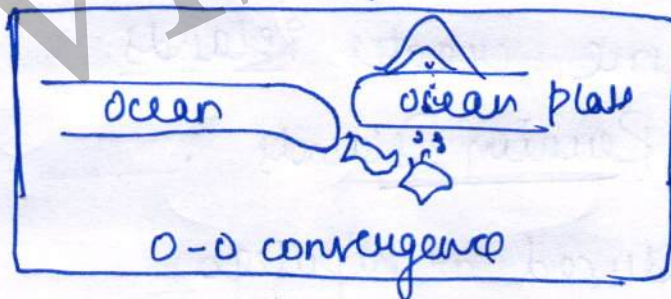
10. द्वीपसमूह से आप क्या समझते हैं? इनके निर्माण में शामिल विभिन्न प्रक्रियाओं को उदाहरण सहित समझाइए।

What do you understand by archipelagos? Explain the different processes involved in their formation, with examples. (Answer in 150 words) 10

Archipelagos are groups of tectono-volcanic islands formed due to endogenic diastrophic processes inside Earth.

Process of formation

- 1) Ocean-ocean convergence
 - > Subduction of denser plate
 - > Rise of magma
 - > Formation of volcanic island arcs

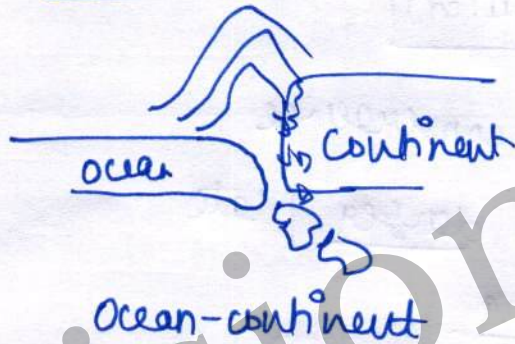


- > when multiple ocean plate convergence happens, it forms archipelago
Eg - Hawaiii islands

2) Ocean-continent convergence

- > Subduction of ocean plates
- > Creation of tectonic islands
- > Due to intense pressure, multiple islands forms \Rightarrow Archipalego.

Eg - Indonesia (Burma plate)



3) Hotspot archipalego

- > Mantle plume creates islands chains. Eg - Reunion Islands.

4) Volcano induced archipalego.

These archipalegoes are important tourist sites and are also vulnerable to different climate challenges like sea level rise.

11. भारत में जनजातीय और लोक कलाएं अपने अस्तित्व को बनाए रखने हेतु आधुनिक युग की कई चुनौतियों का सामना कर रही हैं। चर्चा कीजिए। साथ ही, इस संबंध में सरकार द्वारा प्रारंभ की गई विभिन्न पहलों को रेखांकित कीजिए।

Tribal and folk arts in India are confronting several challenges of the modern age in a bid to survive. Discuss. Also, highlight the various initiatives taken by the government in this regard. (Answer in 250 words) 15

Tribal and folk arts refer to those art forms that have been propagated through generations through folklore and verbal mediums primarily and are an engrained part of Indian culture and heritage.

Challenges being faced

1) Decline in practice of these art forms due to verbal nature

Eg- Disappearance of multiple languages of tribals. Eg- Mitai language

2) Lack of audience due to increasing influence of global art forms

Eg- Pop culture

3) Lack of exhibition avenues and government patronage

4) Restrictions of geography.

Eg- Tribals tend to reside isolated

⇒ Less propagation

5) Less financial resources to promote folk culture internationally.

6) Less interest of film-makers, art patrons, despite immense potential.

Eg- Kantara movie success shows potential of folk culture, still less investment

Government initiatives

1) Promotion of tourism in tribal areas to increase awareness

Eg- Swadesh Devshan, Know India

2) Trade fairs to exhibit tribal handicrafts and art forms

Eg- Tribal Haat by TRIFED.

3) Digitization drive to bring these
artforms on digital platforms

4) Promotion of artists involved in these
artforms through awards.

Eg- Karnataka Bihu artist awarded
Padma Shri

5) Promotion of folk dancers and
musicians by ICCR and Sahitya

Eg- Madhubani painters Academy
- Gharba dancers

Way forward

1) Financial investment to improve
training and development of artforms

2) Promotion of artforms on global
stage. Eg - Indian embassies can
promote these artforms abroad

Tribals are integral contributors
to India's folk heritage and must be
encouraged

12. भारतीय शास्त्रीय नृत्यों की विशिष्ट विशेषताओं पर प्रकाश डालिए। साथ ही, चर्चा कीजिए कि ये नृत्य किस प्रकार आध्यात्मिकता की अभिव्यक्ति हैं।

Highlight the distinguishing features of Indian classical dances. Also, discuss how these dances are a manifestation of spirituality. (Answer in 250 words)

15

Indian classical dances are those dance forms that derive their features and style from ancient literature like Natyashastra and are recognized by the National Academy.

Distinguishing features

- 1) Influenced from religious texts and incidents.

Eg- Kathakali narrates incidents from Ramayana

- 2) Different emotions or 'Rasas' are expressed

Eg- Lasya Ras (Kuchipudi)

- Tandav Ras

3) Focus on both facial movements and hand gestures.

Eg - Kathakali focuses on facial expression
- Odissi focuses on hand movements

4) Performed by both male and females in groups and solo.

Eg - Bharatnatyam ⇒ solo | Mainly women
- Odissi ⇒ Groups/solo | Children, women → Gotipuas

5) Use of heavy makeup and props

Eg - Tal tarang in Kuchipudi

6) Combine 3 different artforms

> Nritya - Dance

> Natya - Drama/Theatre

> Sangeet - Use of musical instruments

↳ Saranggi
↳ Pakhwaj etc.

Manifestation on spirituality

1) Evolved from temple traditions

Eg- Bharatanatyam from Devadasi
culture

2) Use of religious songs

Eg- Manipuri Sankirtana

3) Portrayal of Gods through dance

Eg- Mohiniattam portrays Vishnu
in Mohini form

4) Describes various spiritual and
religious incidents. Eg- Ramayana

5) Begin and ends with tribute to
gods. Eg- Kathakali, Kuchipudi

Indian classical dances are

source of intangible cultural heritage
and soft power for India.

13. चौरी-चौरा की घटना द्वारा भारतीय स्वतंत्रता संघर्ष की गति को कुछ समय के लिए धीमा कर देने के बावजूद, असहयोग आंदोलन भारतीय स्वतंत्रता संघर्ष के इतिहास में एक निर्णायक मोड़ के रूप में बना रहा है। चर्चा कीजिए।

Despite the Chauri Chaura incident slowing down the momentum of Indian freedom struggle for a while, the Non-Cooperation Movement remains a watershed in the history of the Indian freedom struggle. Discuss. (Answer in 250 words)

15

Non-cooperation Movement was launched by Grandhi in 1920 against Punjab wrongs by the British and Khilafat issue

Features of Non-cooperation Movement

- 1) Boycott of British products and institutions. Eg - Schools, courts
- 2) Minimizing any sort of cooperation with the British. Eg - Non payment of taxes
- 3) Constructive work. Eg - Hindu-Muslim unity, campaign against untouchability
- 4) Strong emphasis on non-violence.
Eg - Peaceful protests, agitations, picketing
- 5) Boycott of British clothes.

Impact of chauri chaura incident

1) Growth of violence in the movement.

Eg- Burning of police station in Chauri Chaura

2) Withdrawal of movement by Gandhi

3) Realization of more training of Indians in non-violent methods

Eg- Emphasis on constructive work
by No-changers

4) Disappointment of extremists and revolutionaries. Eg- Initiated phase 2 of revolutionary movement

Watershed in history

1) First organized mass struggle by Gandhi. Eg- Started by INC proclamation

2) Participation of all sections of society. Eg- Peasant, workers, women

3) Brought women in public life and movements. Eg- Picketing by women
- Role of Annie Besant

4) Maximum Muslim participation
Eg- Khilafat issue brought Muslims under freedom movement

5) First application of Grandhian tools of Satyagraha, Boycott at a mass level.

6) Creation of social harmony through constructive work.

Challenges → Also led to communalization due to religious issue for freedom movement

Division of INC-Swarajists and Industrialists formed an Non-cooperation Council

Despite all setbacks, Non-cooperation movement set stage and prepared masses for Civil Disobedience.

14. शिक्षा और विदेशी मामलों के क्षेत्र में डॉ. सर्वपल्ली राधाकृष्णन के योगदान को वर्णित कीजिए।
Bring out the contributions of Dr. Sarvepalli Radhakrishnan in the fields of education and foreign affairs. (Answer in 250 words) 15

Dr Sarvepalli Radhakrishnan

was the 2nd President of India.

Education

1) Teacher's day celebrated in his
honour.

2) Focus on first National
Education Policy

3) Shift to mass education post
independence.

Eg- 11% literacy at independence

4) Established UGC.

Foreign affairs

1) Supreme commander of India's
armed forces during war with
Pakistan.

2) Panchasheel program

3) Non-Aligned movement

4) Negotiations with China during
Tibet invasion

VisionIAS

15. कृषि के नारीकरण को प्रेरित करने वाले कारकों को सूचीबद्ध कीजिए तथा इसके प्रभावों पर चर्चा कीजिए। साथ ही, उन तरीकों का भी वर्णन कीजिए जिनके माध्यम से महिलाओं को इस संदर्भ में सशक्त बनाया जा सकता है।

Enumerate the factors driving feminization in agriculture and discuss its effects. Also, state the ways in which women can be empowered in this regard. (Answer in 250 words) 15

Feminization in agriculture refers to increasing participation of women in agricultural and allied activities. In India, ~94% of rural women are involved in agriculture (Agriculture Census 2015-16)

Factor driving feminization

1) Migration of men to urban areas for employment. Eg - 35% population lives in urban areas.

2) Need of cheap, semi-skilled workforce in agriculture.

Eg - 70% livestock farmers are women
- 30% dairy farmers are women.

3) Lack of non-agricultural women oriented employment in villages.

Eg - 90% people in rural areas dependant on agriculture

4) Lack of education, skill training and awareness among women → forced into underpaid agriculture labour activities

Effects of feminization

1) Positive effects

i) Participation of women in economic activities

ii) Awareness and organization of women.

Eg - Budumbashree SHCs in Uttarakhand

iii) Self-confidence and empowerment

2) Negative effects

i) Lack of ownership of land

Eg. only 13% land owned by women (Agriculture census 2015-16)

- ii) Mostly involved in agriculture labour activities ⇒ Informal employment
- iii) No participation in decision-making
Eg - Very few women in irrigation committees
Panchayat Panchayats
- iv) Lack of women-oriented machines and equipment. Eg - Tractors designed for men.

Measures needed

- 1) Involvement in decision making process through awareness, literacy
Eg - Agriculture extension services
- 2) Financial empowerment by bank lending. Eg - MUDRA Yojana
- Jan Dhan Yojana
- 3) Data aggregated on gender basis
Eg - AgriStack
- 4) Land ownership to be increased.
- 5) Skilling in value-addition and agri entrepreneurship. Eg - READY scheme
Female empowerment is crucial to achieve SDG 5 of gender equality.

16. भारत में, आत्महत्या 15-29 आयु वर्ग के लोगों में मृत्यु के प्रमुख कारणों में से एक बन गई है। इसके लिए उत्तरदायी कारणों को स्पष्ट करते हुए, राष्ट्रीय आत्महत्या रोकथाम रणनीति के प्राथमिकता प्राप्त क्षेत्रों पर चर्चा कीजिए।

In India, suicide has become one of the leading causes of death among those aged 15-29. Bringing out the reasons behind the same, discuss the priority areas of the National Suicide Prevention Strategy. (Answer in 250 words) 15

According to WHO, ~36% people in India are suffering from some kind of mental issues like depression that has made India home of ~8% suicides in the world.

Reasons behind increasing suicides

1) Change in lifestyle

Eg- Junk food, poor work-life

balance etc \Rightarrow 65% non-communicable diseases like cancer, depression etc.

2) Pressure of increased career competition. Eg ~7% unemployment

3) Change in family structure

Eg- Decline in joint family has led to

poor primary socialization and emotional support system.

4) Financial crises in agriculture sector

Eg- Indebtedness (~50% Households) in rural areas is leading cause of suicides.

5) High burden of expectations on children from young age

Eg- High incidence of suicides in IITs.

6) Lack of education and discussion among Indians about mental health

Eg- Psychiatrists are still seen as taboo in India.

Hence, there is a need of

National Suicide Prevention Strategy

1) Promote discussion about mental health issues, especially among men.

Eg- Government suicide helpline reported maximum calls from men.

2) Awareness among families and new generations through IEC campaigns.

Eg- 'We listen' campaigns

3) Immediate support system.

Eg- Mauudayan helpline

4) Comprehensive policy and guidelines

Eg- Mental health Policy 2017

↳ Implementation of guidelines

5) Access to medical support in times of emergency

Eg- Database of legitimate mental health practitioners.

Suicides are the biggest threat to India's demographic dividend and must be addressed by awareness and medical interventions.

17. विश्व भर में पाए जाने वाले विभिन्न प्रकार के मरुस्थलों के निर्माण की व्याख्या करते हुए, उनका विवरण प्रस्तुत कीजिए और उनकी विशेषताओं का उल्लेख कीजिए।

Explaining their formation, provide an account of the various kinds of deserts found across the world along with their characteristics. (Answer in 250 words)

15

Deserts are dry landscapes formed when rate of evaporation in an area is more than rate of precipitation. India has ~30% of landmass under deserts (ISRO).



1) Sub-tropical deserts (Hot)

- > Due to subsiding high-pressure winds in sub-tropical pressure belts (~30°N/S)
- > offshore winds also aids formation of such deserts. Eg - Mojave desert, Sahara
- > characterised by sandy and rocky landscape with strong winds.

2) Deserts on western coast of tropics (Hot)

- > Formed due to offshore trade winds

and cold currents \Rightarrow Dessicating effect
 > Characterised by cool weather, but
dry atmosphere. Eg- Namib desert
 due to Benequela current, Atacama
desert due to Peru current

3) Leeward side of mountains (Hot & cold)

> Formed due to lack of rain-bearing
clouds in leeward side

> Characterised by dry landscape, short
trees and thorny vegetation

Eg- Patagonia desert (Andes mountain)

4) Continental desert (Hot & cold)

> Due to lack of rain in interiors of
continents

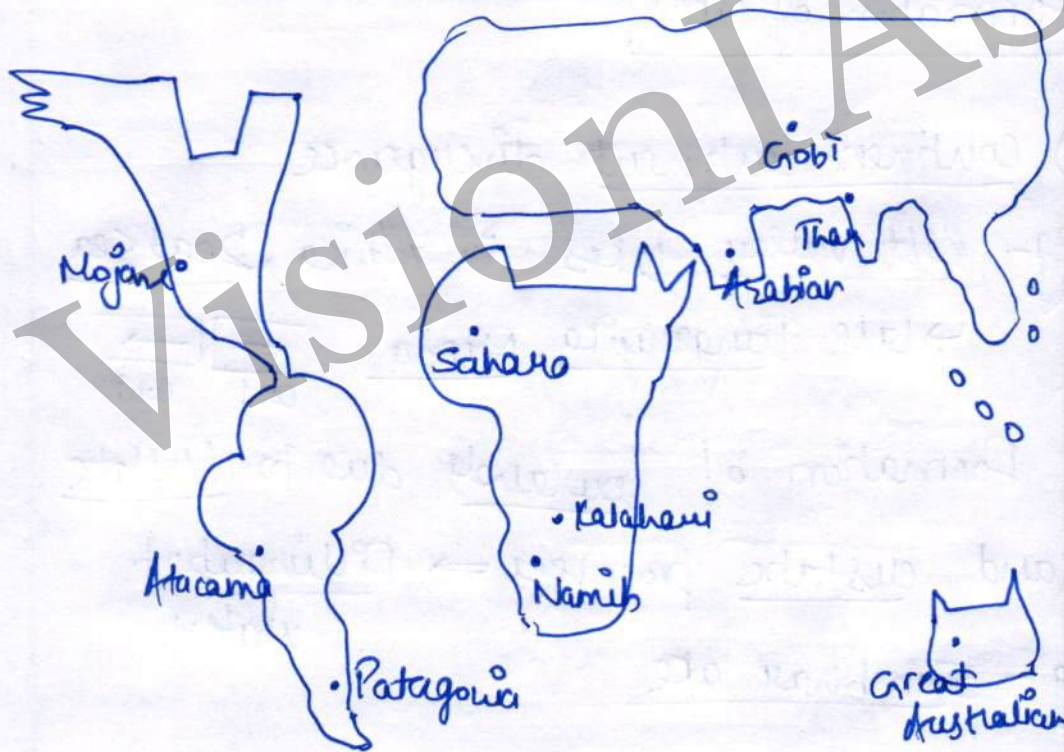
> Characterised by vast areas of
short vegetation and adaptations in
 animals. Eg- Gobi desert (Mongolia)

5) Cold deserts at high altitude

> Formed due to poor rainfall at
high mountains

> characterised by snow cover, very less
vegetation and wildlife - Eg: Mosses, lichens

> Eg - Ladakh.



Deserts of world

There is need to control rapid
desertification of landmass and protect
biological productivity of soil.

18. भू-संचलन के कारण निर्मित झीलों का संक्षिप्त विवरण देते हुए, झीलों के आर्थिक और पारिस्थितिक महत्व पर चर्चा कीजिए।

Giving a brief account of the lakes formed due to Earth's movement, discuss the economic and ecological significance of lakes. (Answer in 250 words) 15

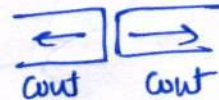
Lakes are aquatic ecosystems or wetlands formed due to multiple endogenic and exogenic processes and have immense economic and ecological significance.

Formation of lakes

- 1) Continent-continent divergence

Eg- Rift valley lakes in Africa, Dead Sea

↳ lake Tanganyika, Nyasa



- 2) Formation of lowlands due to isostatic and eustatic processes ⇒ Filling up of water

Eg - Sambhar lake

- 3) Caldera lakes due to vulcanism

Eg- lake Tihica (Argentina)

- 4) Erosion and deposition lakes due to

movement of water bodies. Eg - Ox bow lakes
→ Lake Kabartal

5) Other processes

→ Man-made lakes. Eg - GB Pant Sagar

→ Natural lakes. Eg - Lonar lake

Ecological significance

1) Inland fishing by coastal communities

Eg - ~60% of India's fishing

2) Source of multiple natural products

Eg - Timber from mangroves

3) Medicinal plants, flowers etc

4) Protects coastal infrastructure by
absorbing excess water

Eg - Bridges,

5) Islands formed in certain lakes
provide settlement

Eg - Plumdie in Wular lakes

6) Rice cultivation, Aquaculture, Swamp farming

Ecological significance

- 1) Reduce urban floods by absorbing excess water. Eg - Mumbai floods 2005
- 2) Habitat for various aquatic organisms. Eg - fish, swamp
- 3) Filter contaminants in water.
Eg - Hard metals by water hyacinths
→ kidneys of water bodies
- 4) Stabilizes coasts. Eg - Pneumatophores
in mangroves
- 5) Regulate micro-climate of the region.
Eg Urban heat islands
Preservation of lakes is
very important to achieve SDGs of
'life on land' and 'life ^{below} before water'

19. भारत के पास 1,80,000 मेगावाट महासागरीय तापीय ऊर्जा उत्पादित करने की क्षमता है, हालांकि, इस दिशा में प्रगति धीमी रही है। इस संदर्भ में, संबंधित चुनौतियों को रेखांकित कीजिए और सुधारात्मक उपायों का सुझाव दीजिए।

India has the potential to generate 180,000 MW of ocean thermal energy, however, progress in this regard has been slow. In this context, highlight the associated challenges and suggest remedial measures. (Answer in 250 words)

15

Ocean thermal energy is a renewable non-conventional form of energy that utilizes temperature difference ($\sim 20^\circ\text{C}$) between surface water and deep water to produce energy.

Status in India

1) Few energy generation plants have been set up.

Eg- Kadmat, Kavaratti in Lakshadweep
- Chennai OTEC plant

2) Collaboration of Israel to set up more plants

3) Promotion of domestic Research & Development. Eg- CSIR, Bluewatersway

4) Total potential of 180 GW from 7500 km coastline and 2 lakh km² continental shelf.

Challenges with progress

- 1) High capital cost and long-term gestation period. Eg- Technology
- 2) Need of skilled workforce and scientific research. Eg- Only <1% budget spent on Research in India
- 3) Impact on marine biodiversity due to setting up of plants
Eg- Coral bleaching
- 4) Policy paralysis. Eg- More focus on solel and wind energy.
⇒ ISA, Green Grids initiative
- 5) Lack of domestic technology.
Eg- Import from Israel.

6) Uncertain capacity utilization.

Remedial measures

1) Comprehensive policy around ocean thermal energy

Eg - Targets, Plan of Action and timelines to be laid out

2) Encourage indigenous research and manufacture. Eg - Budgetary outlay
- ~ 3% of GDP recommended

3) Proper EIA to be done

4) Integration with other programs for optimization of finances. Eg - Deep ocean Mission

5) Cross-country collaboration with other littoral neighbours. Eg - Sri Lanka.

6) Skilling of workforce in new-age renewable technology

Ocean Thermal Energy can

help India achieve its NDC of increasing non-fossil power capacity of 50% and Paris commitments

20. भारत में प्राकृतिक गैस हाइड्रेट्स की उपलब्धता का वर्णन करते हुए, उनके महत्व के साथ-साथ उनके अन्वेषण से जुड़ी चुनौतियों पर चर्चा कीजिए।

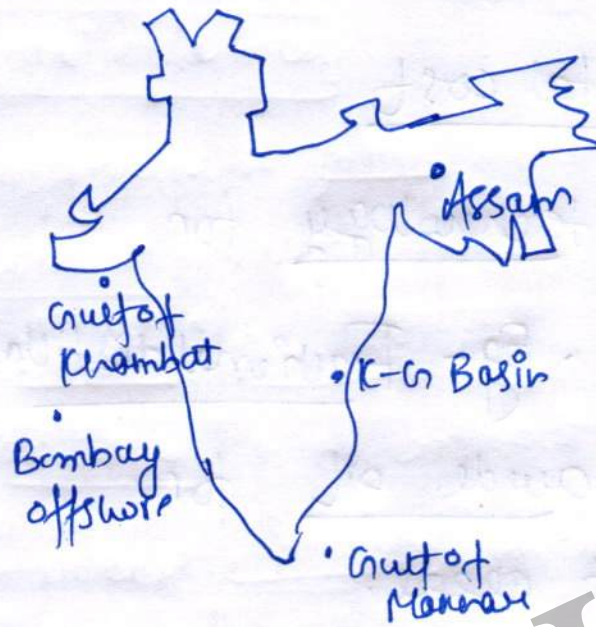
Bringing out the availability of natural gas hydrates in India, discuss the promise as well as the challenges associated with their exploration. (Answer in 250 words)

15

Natural gas hydrates are methane deposits covered within water molecules that can be used for multiple energy and economic activities.

Availability

- 1) Krishna-Godavari Basin
- 2) Assam Atrakan
- 3) Bombay offshore
- 4) Gulf of Khambat
- 5) Gulf of Mannar



Promises

1) Energy security

Eg - CNG, PNG, LPG

2) Reduce energy import bill

Eg - CAD = 1.6% of GDP

3) Reduce carbon emission

Eg - India has 50% coal dependence for electricity

4) Blue methane . Eg - Steam reining

Challenges

- 1) High capital cost
- 2) Lack of technology for haunessing - Eg - Fractional distillation
- 3) Focus on crude oil for development needs.
- 4) Lack of knowledge about concentration of hydrates and efficiency.
- 5) Impact on biodiversity.