Date of the Exam: 08-08-2019

SMT 2019

GEOGRAPHY

FINAL - 2

TEST - 6

General Instructions

This Question-Cum-Answer (QCA) Booklet contains 60 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: APURVA KUMAR SINGH

Topic Comprehensive Test (Paper - II)

Examination Date: 08/09/2019

(1) Morning (2) Afternoon (3) Evening

Online (1) / Offline (2)

Candidate Signature

Ultimate Learning Experience (P) Ltd.

Hari Bhawan : 14A/103, W.E.A, Karol Bagh
New Delhi - 110005
Ph: 011 - 25719872, 25719862, 25752444
M: 09810382305 mail: info@directionias.com
Visit Us at www.directionias.com
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 of 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.
You approach questions well.

Need to work on diagram quality.

Add the unp result curves out.

All the best.
TEST - 6
GEOGRAPHY

Question Paper

SECTION - A

Ques. 1. (a) Examine the plastic waste challenges in India. 
(b) What are the provisions of ethanol policy in India? 
(c) Explain the major fracture zones of India. 
(d) In reference to geological structure, briefly describe coal beds of India. 
(e) What is Wetland restoration in India.

Ques. 2. (a) Briefly examine the status of water management index score of Indian states. 
(b) What is the agriculture waste challenge in India? Outline its planning strategies. 
(c) "India is among top SO2 emitters". Examine the pattern and causes.

Ques. 3. (a) "One border one guarding force" – explain the significance and challenges. 
(b) Avail brief accounts of monsoonal precipitation pattern of India. 
(c) What is the requirement of food security planning in India?

Ques. 4. (a) Write note on prospects of Indo-Pacific cooperation. 
(b) Explain Indian urban resilience in light water resource management. 
(c) In reference of high speed rail network, examine potentials of economic growth.

SECTION - B

Ques. 5. Answer the following in above 150 words each : 
(a) Food loss statistics 
(b) National Inland Fisheries and Aquaculture policy 
(c) Atal Bhujal Yojna 
(d) Operation Green 
(e) Write in your QCA Booklet the significance of these locations, whether physical/commercial/ economic/ecological/environmental/cultural in not more than 30 words for each entry. 
(i) Valai Island, (ii) Osudu lake, (iii) Mt. Thinchinkang, (iv) Samba, (v) Chaukan

Ques.6. (a) Examine the feedback relation between agriculture and climate in Indian context. 
(b) Write note on regional potential of renewable energy sources in India. 
(c) What is the requirement of coordination and collective action for agricultural innovation?

Ques. 7. (a) Examine key uncertainty for India in economic consumption front. 
(b) What the growing concerns of India in Indian Ocean region? 
(c) Examine the role of pipeline in decentralizing economic development.

Ques. 8. (a) What is the extension of salt affected areas? Also identify the methods of reclaiming. 
(b) What is the role of social capital in rural development in India? 
(c) Outline the nature, causes of water challenges in context of Maharashtra and Gujarat.
Examine the plastic waste challenges in India.

**Indian PM during the Independence day speech promised to launch a program for the removal of single use plastic in India.**

**Threats of Plastic Pollution**
- Non-degradable
- Threat to flora & fauna
  - Engulf & suffocating fish
- Marine pollution e.g., great pacific garbage
- Land pollution e.g., decreasing soil quality
- Air pollution & toxic emission of gases on burning
  - Urban floods, urban pollution etc.

**Various challenges**
1. **Lack of better alternatives**
   - Although there are options based on the product made from starch and grasses, jute bags, bagasse bags etc., but their production is not at the high level.
2. **The failure of Panchayats & Municipalities**
   - The collection and segregation of municipal waste is absent in most of the Indian cities.
3. **Behavioral issues**
   - The plastics are easy to use and carry, so people often prefer it.
4. **Circular economy**
   - The recycling of plastic, use it in road construction etc.

**Que.1. (a)**
Hence, we need to tackle these challenges. We need efforts at all the level. The households need to segregate the waste and ensure the plastic less life.

Local bodies collect and sent to recycle centre

Government implement plastic waste management rules in letter & spirit.

There is a need of "San Androlan" to bring the behavioural change and ensure elimination of plastics in a phased manner.

Que. 1(b) What are the provisions of ethanol policy in India?

To fulfill its aim toward INDC of Paris agreement, India has targeted the 10% mixture of Biofuels in the petrol and hence government come up with ethanol policy

1. Define the ethanol as first generation, 2nd generation (e.g. from starch like potato), 3rd generation & 4th generation fuel.

2. To declare the policy to support the production of 2nd generation ethanol by providing subsidies and technical support.
(i) Extended the ambit of raw material for ethanol production. New farmers can sell the rotten grains for the ethanol production. Even if the production is large, they can divert the grains, fruits, vegetables.

(ii) Used edible oils from hotels, restaurants to be used for ethanol production.

Benefits:

(i) Clean energy ⇒ Environment-friendly
(ii) Benefit to farmers ⇒ Augment their income
(iii) Health benefit ⇒ The practice of using some oil many times by the restaurant will be softened.

Challenges:

(i) Farmers may tend to divert more food grains to the production of ethanol to get benefited. In long run may lead to the food crisis.

(ii) Support is given only to 2nd generation biofuel and not the first generation is criticized by many. Hence, the national ethanol policy will augment the production of ethanol, and we will have a safer cleaner fuel option.
Que. 1(c) Explain the major fracture zones of India.

10 marks

Indian Peninsula can be divided into two major fracture zones:

1. The Himalayan Zone
2. The Peninsular Zone

The Himalayan Zone:
- It is a zone of high seismic activities as the Himalaya is young and still growing.
- It results into few of high seismic zone as: the western Himalaya zone of J&K, Himachal Pradesh, Uttarakhand.
- The parts of northern Bihar, the parts of north east.

The Peninsular Zone:
- With upliftment of Himalaya there is a rift valley along which Narmada and Tapti flows.
- The eustatic balance of Katpana mountain
- The formation of decollement due to
Que. 1(d) In reference to geological structure, briefly describe coal beds of India.

10 marks

Indian coals are basically of two types:

- Varanasi coal
- Bhubaneswar coal

Bhubaneswar coal

It consists of almost 95% of Indian coal. They are mainly bituminous coal found in the parts of Haripur, Jharia coal field, Singhbhum coal field, also in Madhya and
part of Chhattisgarh. Andhra Pradesh is also spread in parts of North East of India and also the parts of the southern India in Andhra and Telengana.

Berry coal

They are also found in Jharkhand, Chhattisgarh and part of the Karnataka and Maharashtra. Certain part of tertiary coal is also found in Rajasthan. They are mostly lignite or brown coal.

Anthracite coal

They are mostly found in the parts of Jammu and Kashmir. They are of very high quality with high carbon content & less smoke.

Coal forms the backbone of an Industrial economy. India today meets the majority of its energy needs through Thermal Power Plants. However, the emission of Sulphur & an environmental & health hazard makes it a poor choice for environment.
Que. 1(e) What is Wetland restoration in India.

In India various wetlands are defined and protected under the Ramsar Convention. The monterau record of Ramsar includes the Keoladeo National Park and certain lake for the conservation and restoration.

Two types of wetlands

1. **Inland wetlands**
   - Example: Chikar lake
   - **Wetland restoration** is a program to restore the health of wetland and maintain its ecosystem. It is done through:
     1. **Legislation**
     - The wetland rules of 2018 defines wetland and prohibits any kind of waste and dump. It also set rules to remove the encroachment.
     2. **Human Awareness and Private Participation**
     - The Bellandur and Agera care of Bangalore is being restored by the private bodies along with people's participation.
     3. **Ecosystem approach of Restoration**
Que. 2. (a) Briefly examine the status of water management index score of Indian states.

20 marks
Que. 2. (b) What is the agriculture waste challenge in India? Outline its planning strategies. 15 marks
Que. 2.(c) "India is among top SO2 emitters". Examine the pattern and causes.

15 marks
Que. 3.(a) "One border one guarding force" - explain the significance and challenges.

"one border one guarding force" is a concept of creating a single command of border security.

Amidst the current threat of security along the borders, there is a demand to rehaul the border security framework.

Map (1) Current scenario of border guarding forces

Problems with current framework of different forces along different border

1. Lack of coordination
2. Information asymmetry
3. Developmental bottlenecks of road infrastructure
- faster, quicker deployment of forces, integrated strategy to tackle terrorism

Hence there is a demand for one border one guarding force.

**Significance**

1. Horizontal and vertical unity in planning

   a. unified plan
   
   Single Command Information Process
   
   Information gathering

b. It will be comprehensive and that will result in better coordination

   - inclusiveness of the requirements along the border
   - foster procurement of weapons, building roads, technology implements
   - from as well as human resource development & train-

   (5) Strengthening the information sharing mechanism will help to tackle the twin issue of terrorism, insurgency and substance abuse

   Also, help in border area development
With better security & stability in the region, the employment, health, education of people will be strengthened.

However, there are few challenges:

2. Border with tribal indigenous people of Assam. Mishes suited for the tribal area of North East since it recruits local people.

Hence, the idea of "one border, one force" is strategically good. But it also needs to incorporate few of the flexibilities that is unique to Indian borders.

Que. 3.(b) Avail brief accounts of monsoonal precipitation pattern of India.

15 marks

Indian peninsula lies in the northern hemisphere which provides it a good geographical location for unique development of monsoon. Monsoon is a reversal of winds, with a break in the rainfall.

India's Indian monsoon shows classical example of monsoon climate with two distinct monsoon precipitation pattern of:

1. Northeast monsoon
2. Southwest monsoon (Settling up of monsoon)
Monsoon precipitation pattern during S-W monsoon accounts for 80% of precipitation.

Arabian Sea (Worm of S-W monsoon)

The onset of monsoon happens at Malabar coast.

- Normally during the first week of June
- The sudden onset at Malabar coast is facilitated by Atlantic easterly jet stream and the southward shift of storms and subtropical easterly jet stream.

- It brings heavy rain around 200 cm in the windward side of the western coast.
- It also brings some rain in the leeward side but in Tamil Nadu, it is almost dry.
- Then it moves toward central and northern India (parts of Maharashtra, Gujarat, MP etc.)

Bay of Bengal (Worm)

- It is parallel to Aravalis, so doesn't facilitate much rain in the Rajasthan.

Funnelling effect in North-East

This makes the regions like Cherrapunji, a major rain area in the world's most rainy areas.
6. Then it moves toward the interior part of India, brings decent rain in West Bengal & Bihar (around 150-200 cm), further to Western UP and Delhi region it brings rain (100-150 cm).

7. Monsoon precipitation due to the retreating monsoon in India were little rain around 2-15% of total. It is mostly offshore so does not contain moisture.

Case of Tamil Nadu:

The orientation of Tamil Nadu coastal coast is favorable for the rain in this season as retreating monsoon carries moisture from Bay of Bengal. Hence Tamil Nadu climatic classification as per Koppen is AS (summer dry) India. Is very lucky to have such a favorable rainfall regime. However, with climate change, there is a change in pattern, intensity as well as timing of monsoonal rainfall which has resulted into climatic disasters like floods of Kerala Flood 2019.
India is all set to become the world's most populous country by surpassing China in 2027. Thus, it also necessitates to increase the food production to strengthen the food security.

Requirement of food security planning:

- To feed the increasing population
- To tackle the diversity variable
- Impact of climate change on food production
- Removal of agricultural hazards
- Threat to food security

To feed increasing population

Matthews had said that the population multiplies in geometric progression, while food security production can only increase in arithmetic progression. So, with increase in population and to reap the benefit of demographic dividend we need to do food security planning.
ii. Climate change impact


A threat to the productivity of International Rice Research Centre has estimated the downfall of 20% in the rice production in the period area.

Futher there is a report that shows around 50% of land under cropping is degraded.

iii. Agricultural Hazard


Drought - due to faulty irrigation like irrational groundwater extraction, wrong crop selection of, suprause in marathwada, the clearing the forest for agriculture in turn affect the soil quality, the loss of land due to landslides, the water loss of due to floods.

iv. To remove disparity


There is a disparity of food & nutrition intake among the various sections of people of developed states have better food security than the developing states. The Green revolution best are better & fortified with food security. Hence we need to plan for food security, various measure can be.
Que. 4.(a) Write note on prospects of Indo-Pacific cooperation. 20marks
Que. 4.(b) Explain Indian urban resilience in light of water resource management.

15 marks
Que. 4.(c) In reference of high speed rail network, examine potentials of economic growth. 15 marks
Food loss statistics

Brand of 20% of food is lost due to various reasons in India.

**Reasons for food loss**

- Supply chain bottlenecks
- Climate change
- Cultural
- Food processing
- Waste

1. Supply chain bottlenecks

- Contributes to around 50% of total food loss.
- Involves the lack of infrastructure, like
- Cold storage.
- The government calculates
- Accounting for hundreds of tonnages of food
- Loss due to improper cooling management.
- Lack of on-farm infrastructure.
- Lack of refrigerated transport.
- Perishable food items like vegetables and
- Fruits.

2. Climate change

- The tropical regions
- Have witnessed increase in temperature and
- Maturation which lead to early ripening.
of product and quick damage.

(ii) poor agricultural practices & lack of use of machines for harvesting & food processing techniques.

(iii) cultural and behavioural changes & keep of ex-poo food during the social gathering like marriages.

We need to ensure the zero food waste, as it is one of the way to ensure food security for millions of people.

Que. 5. (b) National Inland Fisheries and Aquaculture policy

The the nema kumari committee had been established to suggest about the prospect of inland fishing in India. The recent budget also provided with setting up of a fisheries department to boost the fishing in India.

National Inland Fisheries and Aquaculture policy

(i) use of technology

The modern way of casting of fish through container collaboration with Japan for training.
of fishermen. The research and development to produce quality aquaculture seeds.

- Sustainable fishing
  - It should ensure minimum loss to river water & marine ecosystem.

- Private player
  - The PPP model to provide boost to commercial business.

- Safeguarding the traditional fishing community
  - Loans, training & skills, subsidies, health & 
  - free or subsidized seeds & 
  - PM fancy schemes. 

- Disaster resilience
  - It will also equip farmer to act in case of 
  - cyclones & flood warning.

So this policy mainly aims to augment the income of poor fishing community and ensure the nutritional security. It is also focusing towards sustainable fishing practice.
Atal Bhujal Yojana is a program to conserve, recycle, and sustainable use of groundwater.

Around 80% of groundwater is used for the purpose of agriculture, and rest for domestic use like drinking & cooking.

Features:

1. Mapping of ground water potential

States of high groundwater potential:

Conservation measures:

1. Intensive afforestation
2. Restoration of ground & aquifers

Awareness program — to aware
People about the national use of ground water resources.

The recent water crisis of Chennai shows an alarming situation of India’s state of water crisis. So such scenarios we need to work on the promotion of the blissful polenta in order to spirit.

Both rural and urban participation

Que. 5. (d) Operation Green

The operation green was launched during the 2018 budget. It mainly aims at augmenting the use of production, processing and marketing of POP.

Production → 0 → provide better seed

Somelings of better irrigation facilities
e.g. drip irrigation, fertilizers, credit support etc.

- Processing: Making the food products like sauces from tomatoes, chuties from onion, and potato.

- Marketing: Infrastructure support like cold storage, the model ATM, act (ATMI) which allows them to sell the vegetables and fruit outside the APMC market, and use of e-NAM.

It will help in:
1. Augmenting the farmer's income
2. Skilling them to start their own cottage food processing units.

Hence, Operation Green is a sustainable way to augment farmer's income through planned and focussed intervention.
Write only Question numbers on this margin (प्रश्न संख्या)

Que. 5. (e) Write in your QCA Booklet the significance of these locations, whether physical/commercial/economic/zoological/environmental/cultural in not more than 30 words for each entry. 

10 marks

(i) Valai Island,

(ii) Osudu lake

(iii) Mt. Thinchinkang

(iv) Samba

(v) Chaukan
Que. 6. (a) Examine the feedback relation between agriculture and climate in Indian context.

More than 60% of Indian agriculture is rainfed and only around 15% are irrigated. The recent IPCC report claimed agriculture is impacting the climate change and in turn it is getting impacted by climate change. So there is a feedback mechanism.

Impact of climate on agriculture

1. Choice of crops

This decides the choice of crops as in the high rainfall region of Kerala, West Bengal, Bihar, eastern Uttar Pradesh, etc.
the water intensive crops are cultivated like rice and sugarcane. In the drier areas it should be less water intensive like millet.

1. Cropping season

The availability of monsoon and the precipitation divides India into 3 Agricultural seasons

- Rabi:
  - Wheat

- Kharif:
  - Rice
  - Cotton
  - Vegetables

2. Negative impact of climate change on agriculture

- Increased pest attack
- Lower production (e.g. estimated 20% less in production value of rice)
- Land degradation → floods, drought, and slides
- Monsoon variability with climate change

Impact of agriculture on climate change

1. Increasing emissions due to:
   - Crop residue burning
   - Emission of methane
Elevated temperature $\rightarrow$ Increased global warming

- Clearing the forest area for agriculture $\rightarrow$ Impact on the local climate

Positive

The practices like organic farming and zero budget natural farming has positive impact on climate

Hence, the climate and agriculture has a feedback relation. The study of this phenomenon can help us in formulating a sustainable agricultural planning.
In order to fulfill its INDC targets under Paris climate agreement, India has fixed the target of 175 GW of renewable energy production.

India's progress:
- India ranks 4th in the wind energy production
- India ranks 5th in the solar energy production
- Overall in renewable energy production, India ranks 5th.

Areas with renewable energy potential:
India has following renewable energy options:

1. Solar Energy

   The potential of solar energy is huge up to 1000GW according to some studies. The location of India makes it a rich region receiving the solar insolation. The establishment of the International Solar Alliance is a progressive step. The hot regions of their desert, the dry and arid areas of Rajasthan, Madhya Pradesh, and Andhra Pradesh provide a potential destination. The project like rooftop solar power generation, schemes like KUSUM, and the establishment of solar farms in Gujarat and Andhra Pradesh are welcome steps.

2. Wind Energy

   It requires continuous and strong intensity of winds to ensure. And offshore coastal regions are good sites. The western coast like Gujarat, Mumbai, Karnataka, etc. offer a
Large potential
(a) Other sources like tidal energy, solid waste based energy production has also good potential.
(b) Hydro power (also included the large hydro power projects)
- By increasing large hydro projects, this sector is currently contributing most.

The various renewals like paraffins, skill up are relatively serendipitous.
The integrated source renewable energy projects also helping to establish a quick electric supply. So overall the renewable energy is to be the future of energy in India.

Que. 6(c) What is the requirement of coordination and collective action for agricultural innovation?  

With increase in population hence there is a need to increase the productivity of available agricultural land. Thus requires the coordination and collective action for agricultural innovation. Use of technology, research, traditional methods, awareness.

Various fields where these can help
Seed generation to innovate and...
Que. 7. (b) What the growing concerns of India in Indian Ocean region? 15marks

The Indian Ocean has huge prospects as it is the transition area that connects the eastern part of the world through the western part through connecting pacific and Atlantic Ocean.

The 35% of world trade and around 85% of trade in oil passes through Indian Ocean.

Indian Ocean has also become the region for major power projections.
Various concerns of Indian Ocean Region

Environmental Concerns

- Coral Bleaching
  - The Great Barrier Reef of Australia and the Indian Ocean coral reefs are affected due to longer heat condition and increased temperature (33°C).

- Sea Water Pollution
  - Oil spillage.
  - Pollution due to increased traffic of ships.

- Dead Zone
  - The areas devoid of flora and fauna due to the intake of polluted water & depletion of oxygen.
The conflict between China, and USA on the South China Sea issue, The Spratly Island, and strategy of China. The conflict at Persian Gulf.

Economics - The issue of arresting crew members in Persian Gulf & Strait of Gibraltar, the issue of pirates near Somalia and other areas.

Hence the Indian Ocean region has multifaceted concerns that need a different approach through collaborative efforts of Indian Ocean region states.

Que. 7. (c) Examine the role of pipeline in decentralizing economic development. 15 marks

Pipeline is an important transport medium that facilitates the transportation of natural and petroleum gases as well as coal and other minerals.

Few major pipelines in India are:

1. H.E.S Pipeline
2. The Eastern Pipeline
3. The Western Pipeline
4. Cauvery Yama Ganga project - east India Pipeline.
Role of pipeline in decentralization of economic development

O Pipeline stations act as growth poles. Centres such as Hazira, Bizapur and Sagardipur can act as growth poles, the functional linkages can be provided through setting up an industrial network and better transportation facilities. Thus, it will help to generate employment in these regions around Bizapur (madhya pradesh) and Sagardipur (uttar pradesh) which ultimately become an integrated industrial region.
Que. 8.(c) Outline the nature, causes of water challenges in context of Maharashtra and Gujarat.

15 marks
(i) Valai Island,
(ii) Osudu Lake
(iii) Mt. Thinchinkang
(iv) Samba
(v) Chaukan