

2007

GEOGRAPHY

PAPER-VIII

Full Marks : 100

Time : 4 hours

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Write the answers Questions of each Module **in separate books**

MODULE-15

(Marks 50)

(*Coastal Management Special*)

GROUP-A

Answer any *two* questions

1. Define coastal zone. Describe the coastal morphodynamics with reference to micro, macro and biogenic forms of the seashores. 3+12

(*Turn Over*)

2. Give an account of the morphological, ecological and economic significance of mangroves and corals on the coastal zone. 5+5+5
3. Why coastal classification is a major task to a coastal geomorphologist? Classify coasts on the basis of processes and sediment characteristics. 5+5+5
4. Discuss the formation of wind-formed waves and trace their behavior as they approach a shoreline. Identify the differences between wind-driven waves and tidal waves. 10+5

GROUP-B

Answer any *two* questions

5. Explain how the coastal sediments are mobilised by cell circulation systems. 10
6. Identify the types of coastal hazards on the basis of hydrological, atmospheric and geomorphological factors. Describe the social and economic impacts of **future sea level rise** in Bangladesh and West Bengal coasts. 6+4
7. Identify **and explain the two significant techniques of monitoring changes in** coastal landforms **with diagrams and field** observations. 2+8
8. Explain **why the high** wind speed. **storm surges and torrential rains are** associated with tropical cyclones. **Distinguish** the impact **variation** of the **phenomenon on the low-lying** coasts of Bay of Bengal. 5+5

MODULE-16

(/Marks : 50)

GROUP-A

Answer any *two* questions

1. Give an account of the environmental impacts of **pre-mature** land reclamation at coastal areas with special **reference to islands at** Sunderbans. Propose the procedures **of management** to overcome the negative impacts. 10+5
2. How do the **coastal engineering structures** affect coastal **environment by altering the sediment budget** inviting either erosion or deposition ? What should be the measures for controlling both erosion and sedimentation? 7+8
3. Explain how **Remote Sensing** can be used in studying **concentration of suspended sediment and chlorophyll** content of coastal waters. 15
4. Explain the various **field techniques** adopted to **monitor changes in beach environment** in view of **managing coastal erosion**. 15

GROUP-B

Answer any *two* questions

- S. Describe the different impacts of offshore oil exploitation on coastal environment. 10

6. **Discuss the major impacts and management issues related to landfall of tropical cyclones in West Bengal coast.** 10
7. **Make an assessment of coastal zone as an abode of resources with special reference to land, water, fish and mineral resources.** $\frac{21}{2} \times 4$
8. **Discuss the impact of pollution on coastal habitats. What are the management techniques to be followed to minimise the impact ?** 5+5

MODULE-15

(Marks : 50)

(*Regional Development*)

Answer *four* **questions**, selecting *two*
from each Group

GROUP--A

1. **Critically analyse the growth pole theory as proposed by Perroux Hirschman and G . Myrdal.** 15
2. **Discuss the nature of planning strategies for regional development adopted in developing and developed countries. Give examples.** 15

3. **Define agropolitan development.** Discuss its **salient features and mention the strategies** for development. **3+6+6**
4. Mention the basic indicators of development. Highlight the status of these indicators in developing countries. **6+9**

GROUP-B

5. **Enumerate** the concept of poverty line and poverty cycle. **State some important plans adopted** by Govt. of India for regional develop. **5+5**
6. **What are the major environmental issues? Assess the environmental problems experienced by inhabitants of Kolkata. Give suitable examples.** **3+7**
7. **Discuss the contribution** of Friedmann **in developing** the concept of dependency theory. **10**
8. **Write short notes on any two :** **5×2**
- (a) **Demerits of growth pole model**
- (b) **Development and Environmental degradation**
- (c) **Core-periphery Model**
- (d) **DVC.**

MODULE- 16

(Marks : 50)

(*Urban Geography*)

Answer *four* **questions**, selecting any *two*
from each Group

GROUP-A

1. Examine the influence of global scale 'trigger factors' on the processes of urbanization. Make a subjective comparison between 'urban growth' and 'urbanization'. **10+5**
2. Bring out the economic and socio-political influences that have shaped urban planning in the cities of USA. How far such planning has ensured sustainability ? **10+5**
3. Distinguish between basic and non -basic urban economic functions. Establish the relationship between urban economy and global economy in the perspectives of globalization and tertiarization — with particular reference to India. **7+8**
4. With reference to specific Indian examples, consider the major environmental problems at domestic, neighbourhood and city levels in Third World Metropolitan areas. What do you mean by environmental health of an urban area? **12+3**

GROUP-B

5. Elaborate the major characteristics of metropolis. How has the definition of metropolis changed in India during the Census years'? 5+5
6. Identify the principal components of the informal sectors of urban economy and mention their general characteristics. 6+4
7. Examine the causes and consequences of poverty in urban areas of India. 5+5
8. Assess the impact of industrialisation on urbanisation with examples from both developed and developing countries. 10

MODULE-15

(Marks : 50)

(Remote Sensing and GIS)

Answer *four* questions, selecting any *two* from each Group

GROUP--A

1. **What is Remote Sensing? List out different stages of Remote Sensing. What are the requirements of Remote Sensing? Define the Stefan-Boltzmann law about energy. Solve the following problem:**

Find out the radiant existence of a building at a temperature of 310°K . 2+3+3+3+4

2. What do you know about atmospheric window?
Atmosphere is essential for our living, but causes lot of problems for Remote Sensing and Global Positioning System'. Briefly discuss it. 3+12
3. Make the list of different types of aerial photograph. What is overlap ? What is relief displacement? Derive the equation of relief displacement. Solve the following problem:
Relief displacement of a tower on the vertical aerial photograph measures 220 mm and the radial distance from the center of the photo to the top of the tower is 52-40 mm. If the flying height is 1200m above the base of tower, find out the height of tower. 4+2+2+4+3
4. Write short **notes on any five** 3×5
- (a) Type of **photogrammetry**
 - (b) **Radiant and kinetic temperature**
 - (c) **Image parallax**
 - (d) **Along-track scanning**
 - (e) **Spatial resolution** of LISS-I, II and III
 - (f) **Wien's law**
 - (g) **Importance of temporal resolution.**

GROL-P-B

5. Write down three Kepler's laws. Solve the following numerical problem:

A satellite is moving on its orbit around the earth with perigee altitude of 450 km and apogee altitude of 14000km. Calculate the eccentricity of the orbit. Also calculate the period of this orbit. 3+3+4

6. What is film density ? Briefly discuss about characteristic curve of a film. 2+8
7. Discuss about basic negative-to-positive photographic sequence. What is dia-positive and contact printing? 6+4
8. Write short notes on any *four* : $2\frac{1}{2} \times 4$
 - (a) Metric camera
 - (b) Escape velocity
 - (c) Black & white film
 - (d) FOV&Swath
 - (e) **Elements** of image interpretation
 - (f) Real body concept.

MODULE-16

(Marks : 50)

(*Advance Techniques & Apph'cation*)

Answer *four* questions, selecting any two from each Group

GROUP-A

1. What are the advantages of Microwave Remote Sensing? Describe about resolution of SLR system. Solve following numerical problems :

(a) ASLAR system has a **15 millirad** antenna beamwidth.

Find out the azimuth resolution of the system as a range of **25** and 40 km.

25

(b) A SLAR system sends pulses for a period of **0.3 μ s**.

Find out the range resolution of the system at depression angle of **45°** and **60°**.

3+4+4+4

2. Discuss about any *two* segments of NAVSTAR GPS.

What is **meant** by pseudorange?

4+4+7

3. Define GIS. What are map features? Present or comparative **discussion** about raster and vector **data structure with suitable diagrams**.

2+3+10

4. Explain *any two* processes of data enhancement. Discuss practical applicability of density **slicing and unsupervised classification**.

3+3+4+5

GROUP-B

5. **What are the Advantages of digital image processing?**

List the geometric and radiometric errors that may get introduced in satellite imagery.

5+5

6. **What are the principles of preparing NDVI?** Give a hypothetical example to calculate NDVI for water body and forest.

4+6

7. **Discuss** the applications of Remote **Sensing and GIS in land use/ land cover mapping.**

S+5

8. Write short notes on any *two* :

5×2

(a) P code and C/A code

(b) DGPS

(c) TIN

(d) Forest fire mapping.