2009

M.Sc. Part-II Examination

GEOGRAPHY

PAPER—VIII

Full Marks : 100

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

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

Write the answer question of each module in separate books.

(Special Paper)

(Coastal Management)

Module—15

[Marks : 50]

Group—A

Answer any *two* questions.

1. Classify coast based on the availability of energy and tectonics. What are the major changes does a wave experience when it enters into shallow water? 5+10

2. Classify breaker types and establish the relation between beach slope and width of breaker zone. How are wave length, height and celerity get modified as the waves approach shallow water? 9+6

3. Define *enstacy* and *isostacy*. Explain the nature of long term sea level change. Discuss the possible effects of sea level change under green house state and that under oxygenated state. 3+5+7

4. Classify dune vegetation. How do they get adapted in a condition of sand accumulation? 3+12

Group—B

Answer any *two* questions.

5. How would you define coastal zone? Evaluate the concept of CRZ with examples. 3+7

6. Describe the standard processes for monitoring sediment movement in open coast. Explain the possible conditions for deposition of positivety skewed coastal sediment. 10

7. How do the gyres help in the formation of shoals or bars along irregular coast. What are the standard processes of measuring wave period and wave height? 10

8. Describe the main tropical cyclone paths of the world. Discuss the major primary and secondary effects of tropical cyclone with special reference to a recent one. 3+7

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Module—16

[Marks : 50]

Answer any *four* questions selecting *two* from each group.

Group—A

1. Identify and explain the major environmental issues of West Bengal Coast. What is the significance of land fall of tropical cyclone on the low-lying coast? 10+5

2. Describe the significance of coastal regulations with special reference to India. How far the CRZ areas are grossly violated in absence of proper land use policy made by the respective governments and uncontrolled tourism in the coastal states of India. 5+5+5

3. What is the role of integrated coastal zone management in sustainable development of coastal systems? Explain the environmental viability of coastal engineering structures. 10+5

4. Describe the process of reclamation of Indian Sundarban. Explain the problems faced by the area due to reclamation. Was the process, in your opinion, justified? 3+10+2

Group—B

5. Describe the mode of determining landward limit of CRZ in an area dominated by tidal inlets. In which cases the enforcement of CRZ is exempted? 5+5

6. Explain the role of Remote Sensing in development of fishery with special reference to monitoring surface waters in CRZ and study of chlorophyl content in water. 10

7. Evaluate the role of the coastal dyke in controlling erosion of the Digha beach in view of regional erosion patterns. Comment on the future of Digha township in view of the coastal erosion seen there. 7+3

8. Write short notes on any *two* items : 2×5

(a) Coastal entrophication.

(b) Impacts of 'Aila' cyclone in the Sundurban.

(c) Earthen embankments of the Sundarban.

(d) Marine fishing in West Bengal.

(Regional and Urban Planning)

Module—15

[Marks : 50]

Group—A

Answer any *two* questions. 2×15

1. Critically examine the Growth Pole theory as proposed by Myrdal and highlight the significance of the theory in regional planning in India.

2. What major steps have been adopted in Indian five year plans for regional development. Distinguish between regional planning and regional development.

3. What is meant by planning region? State the characteristics of planning region. Define Basic Needs Approach.

4. Explain the Frank's model of dependent development in third world countries. How does this model explain underdevelopment also?

Group—B

Answer any *two* questions. 2×10

5. Define poverty line, poverty cycle, head-count ratio and Human Poverty Index.

6. Evaluate the importance of environment management in regional development.

7. Rural development is a parameter of regional development —Explain.

8. Write short notes on any *two* of the following :

   (a) Development.

   (b) Polarized region.

   (c) Flood as a regional problem.

   (d) Modernization theory.

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Module—16

[Marks : 50]

Group—A

Answer any *two* questions. 2×15

1. Critically discuss the Garden city concept as proposed by Ebenezer Howard. How far is this theory relevant in present day context. 12+3

2. What are the important characteristics of informal sector? Explain the role of informal sector in urban economy. 8+7

3. How does urban sprawling change the landuse pattern around the fringe area? Explain with examples the factors responsible for such urban sprandling. 10+5

4. Give an account of the pattern of urbanization in India during the medieval period. Mention the different urban centres of that period. What is meant by *Gateway city*? 8+5+2

Group—B

Answer any *two* questions. 2×10

5. Explain the various measures of urban poverty. 10

6. Define urban infrastructure. Distinguish between growth centre and growth pole. 2+8

7. What role do rural-urban fringe and rural-urban continuum play in urban development? What is suburbanization? 8+2

8. What are the major urban environment problems of West Bengal? Give an account of one such problem with reference to any one urban centre of West Bengal. 4+6

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(Remote Sensing & GIS)

Module—15

[Marks : 50]

Group—A

Answer any *two* questions. 2×15

1. Define a black body. Explain Wien's displacement law. Also calculate the dominant wave length for black bodies at temperatures of 6000K and 300K. Discuss the spectral reflectance characteristics of vegetation in different spectral bands. 3+3+4+5

2. What are the different types of platform used in remote sensing? Define an orthophoto. Classify aerial photographs based on the types of film used. What do you mean by film speed and film density? 3+2+6+4

3. What do you understand by remote sensing? What is electromagnetic spectrum? Explain the process of transmission and reception of remote sensing data. 3+3+9

4. Write short notes on any *three* of the following : 3×5

   (a) Orbital velority of satellites ;

   (b) IKONOS ;

   (c) Pushbroom scanning ;

   (d) Radiometric resolution ;

   (e) Tilt displacement of air photos.

Group—B

Answer any *two* questions. 2×10

5. Differentiate aerial photographs from satellite imagery. What are Radarsat data. 7+3

6. Discuss the "Atmospheric windows" with special reference to remote sensing. What is "Mie" scattering? 7+3

7. Classify satellite with examples. What is swath? Explain the relationship between IFOV and spatial Resolution of a satellite data. 4+2+4

8. Write short notes on any *two* of the following : 2×5

   (a) Keplar's 3rd law ;

   (b) Coarse resolution satellites ;

   (c) Colour infrared photographes ;

   (d) Setreoscopy.

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Module—16

[Marks : 50]

Group—A

Answer any *two* questions. 2×15

1. State advantages of Microwave Remote Sensing over Optical Remote Sensing. Explain the spatial resolution of a SLAR System. What is 'speckle'? What is the basic difference between side looking RADAR and Synthetic aparture RADAR? $5+5+2\frac{1}{2}+2\frac{1}{2}$

2. What do you mean by Georeferencing? What are the difference between Radiometric distortion and Geometric distortion? Explain the MXL algorithm of supervised classification system. Why the unsupervised classification system is called 'Cluster building operation'? State the advantages of supervised classification system. 2+2+5+2+4

3. Explain the signal characteristics of a GPS satellite. What do you mean by Pseudo-Ranging in case of GPS survey. What is selective availability? What type of detum is used in GPS survey? 10+2+2+1

4. What is the difference between Raster GIS and Vector GIS? What are the advantages of vector data format over raster format? Why the topological concept is important in GIS analysis? What is the difference between TIN & DEM? 2+4+4+5

Group—B

Answer any *two* questions. 2×10

5. What are the basis causes of having low contrast Image ? Explain the process of 'Min-Max streaching' technique. 4+6

6. Why Image Restoration is required in case of digital image processing? Explain different types of Intensity Interpolation techniques. Which one is the best of 'NNI and Bilinear Interpolation'—Justify your answer. 2+6+2

7. Explain briefly the different segments of GPS system. 10

8. What are the relationship between Remote sensing and GIS. Discuss about the recent trends in GIS. 2+8

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