

M.A./M.Sc. 3rd Semester Examination, 2009

GEOGRAPHY

COURSE No. — 2304

Full Marks : 40

Time : 2 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 to questions of each Unit
in separate books**

[Option 1 : Coastal Geomorphology (Special Paper)]

UNIT—XXXI

(Coastal Processes)

GROUP—A

1. Answer any *one* question : 8 × 1

(a) How does a wave maintain energy conservation rule through attenuation ?

(b) How does the time-velocity asymmetry occur in an estuary ? Explain its morphological significance with suitable examples.

GROUP—B

2. Answer any *two* questions : 4 × 2

(a) Describe the internal morphology of a plunging breaker.

(b) Discuss the major approaches to classification of coast.

(c) Enumerate the characters of a dissipative coast.

(d) Explain the different types of wave-induced currents.

GROUP—C

3. Answer any *two* questions : 2 x 2

- (a) Define translatory wave.
- (b) Why is a steep beach composed of Coarser Sand?
- (c) Define wave refraction.
- (d) What are the components of coastal cell?

UNIT—XXXII

(Human Impacts and Coastal Processes)

GROUP—A

1. Answer any *one* question : 8 x 1

- (a) Briefly explain the navigational problems faced by Haldia Port in the lower section of the Hugli River Mouth, and also the shoreline erosion problems experienced in Digha-Shankarpur-Mondarmoni beach resorts in the Bay of Bengal coast. Suggest management options for reducing those problems.

- (b) Narrate the causes of Tsunami and its impact on the coastal areas of South India mentioning the methods of mitigating its possible impacts.

GROUP—B

2. Answer any *two* questions : 4 × 2

- (a) Identify the significance of Coastal Regulation Zones for controlling the over development in the coasts.
- (b) Write down the major environmental issues of the coasts of Sundarban.
- (c) Discuss briefly the environmental impact of coastal fishing.
- (d) Mention briefly any theory regarding the origin of tropical cyclones in the Bay of Bengal.

GROUP—C

3. Answer any *two* questions : 2 × 2

- (a) Why the growth of coastal population is estimated as a threat to the marine ecosystem ?

- (b) What is the impact of sand mining and coral mining on the seashores ?
- (c) What is the difference between EEZ and SEZ ?
- (d) Identify the most important salt processing centres of Bengal and Maharastra coast.

[Option 2 : Urban (Special Paper)]

UNIT—XXXI

(Foundation of Urban Geography)

GROUP—A

1. Answer any *one* question : 8 x 1

- (a) How did urban geography evolved as a systematic branch of study ?
- (b) Elaborate the visionary model of a compact city after Le Corbusier and state its practical constraints.

GROUP—B

2. Answer any *two* questions : 4×2

- (a) "Urbanism is a way of life characterized by density, diversity and complex social organization." Elaborate.
- (b) Identify the salient features of the social structure of the Western Industrial Cities.
- (c) Why are the cities in the Third World growing faster than cities in the developed world ?
- (d) Explain the changing connotation of 'Urban' in India since 1901.

GROUP—C

3. Answer any *two* questions : 2×2

- (a) Define 'urban ecology'.
- (b) What do you understand by 'urban inflation' ?
- (c) Distinguish between 'suburbanization' and 'peri-urbanization'.
- (d) What is meant by green cities ?

UNIT—XXXII

(*Contemporary Urban Issues*)

GROUP—A

1. Answer any *one* question : 8 × 1

(a) Examine the salient features of metropolitan cities with special reference to Kolkata.

(b) Explain why Crime is a social hazard and indicate the factors responsible for criminal behaviour.

GROUP—B

2. Answer any *two* questions : 4 × 2

(a) 'Status of Women is a very strong indicator of metropolitan development.' Elucidate the statement.

- (b) Do you consider poor people as agents and victims of pollution ?
- (c) Specify the policy measures for improvement and renewal of urban slums in India with examples.
- (d) Explain the role of basic and non-basic function in urban economy.

GROUP—C

3. Answer any *two* questions : 2 × 2

- (a) What is meant by urban heat island ?
- (b) What do you understand by homelessness ?
- (c) What is informal sectors in urban economy ?
- (d) What are the impact of transport congestion in a metropolitan city ?

[Option 3 : Remote Sensing and Geographic
Information System (Special Paper)]

UNIT—XXXI

(Physical Basis of Remote Sensing)

GROUP—A

1. Answer any *one* question : 8 x 1

(a) Describe the sensors and resolution of the IRS series of satellites.

(b) Derive the wavelength-frequency-energy relationship of EMR.

GROUP—B

2. Answer any *two* questions : 4 x 2

(a) State the significance of atmospheric window in Remote Sensing.

- (b) Discuss the differences between TM sensor and MSS sensor.
- (c) Discuss the utility of Green, Red and Infrared band for Vegetation status monitoring.
- (d) Find the orbiting time period of a satellite that revolves round a planet of 10 gm/cc density. Consider the radius of the orbit of the satellite is little bigger than the radius of the planet.
Given : $G = 6.68 \times 10^{-8}$ c.g.s unit.

GROUP—C

3. Answer any *two* questions : 2 × 2

- (a) What are the different formats of storing digital images ?
- (b) What is the significance of spectral signature in Remote Sensing ?
- (c) State the difference between spectral resolution and colour.
- (d) Define I.F.O.V.

UNIT—XXXII

(*Photogrammetry and Satellite Systems*)

GROUP—A

1. Answer any *one* question : 8 x 1

(a) What are the different types of aerial photographs ? Illustrate your answer with the help of diagrams.

(b) Distinguish between geostationary and sun-synchronous orbits with examples.

GROUP—B

2. Answer any *two* questions : 4 x 2

(a) Describe the sensors attached to Oceansat-1 mentioning their applications ?

(b) How does the pushbroom system operate ?

- (c) What are the characteristics of image parallax elucidating its importance in photogrammetry.
- (d) How to determine the scale of aerial photograph?

GROUP—C

3. Answer any *two* questions : 2×2

- (a) What are the potential fields of uses of Carlosat-2 Images.
 - (b) Write the use of fiducial mark.
 - (c) What are the characteristics of colour Infrared film?
 - (d) What do you mean by orthorectification?
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