

2016

M.A./M.Sc.

3rd Semester Examination

GEOGRAPHY

PAPER—GEO-304

Full Marks : 40

Time : 2 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 answers of each Unit in separate books.

Special Paper

OPTION—I

[Coastal Geography]

Unit—31

(Coastal Processes)

Group—A

1. Answer any one of the following : 1×8
- (a) Explain the conditions of wave breaking classify breaker based on breaking co-efficient. 5+3

(Turn Over)

- (b) Elucidate the mechanism of rip cell formation in a regular coast. How do you calculate long-shore discharge and velocity? 5+3

Group—B

2. Answer any *two* questions : 2×4
- (a) Elucidate coast as a dynamic system.
- (b) Assess the importance of coastal study in the present context.
- (c) Explain with illustration the scheme of classification of coast following valentin.
- (d) Elucidate the principle of wave breaking with illustration.

Group—C

3. Answer any *two* questions : 2×2
- (a) How is dimension of land forms in coast related to different relaxation time ?
- (b) How does translatory wave differ from oscillatory wave ?
- (c) Define shore-normal current.
- (d) How does beach profile vary with wave variability ?

Unit—32
(Coastal Geography)

Group—A

1. Answer any *one* question : 1×8
- (a) Discuss the techniques for assessing costal hazards with special reference to USGS method.
 - (b) Explain the morphodynamic behaviour of coastal systems for analyzing the modification of coastal features in temporal and spatial scales with feedback mechanisms.

Group—B

2. Answer any *two* questions : 2×4
- (a) What is the role of waves in the formation of beaches and barriers ?
 - (b) Explain the origin of carbonate platforms fringed with Andaman Group of Islands.
 - (c) Evaluate the impact of Costal tourism on ecological environment of Indian Coasts.
 - (d) Evaluate the geomorphological significance of tidal range.

Group—C

3. Answer any *two* questions : 2×2
- (a) Identify any two major impacts of Land reclamation with reference to the Sundarban.
 - (b) What are the major parameters needed for estimating coastal land loss ?
 - (c) Define Estuary hydrodynamics.
 - (d) What are the problems of coastal erosion hazard ?
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OPTION—II**[Urban & Regional Planning]****Unit—31****(Foundation of Urban Geography)****Group—A**

1. Answer any *one* of the following : 1×8
- (a) Examine the content and application of Urban Geography as a systematic discipline.

- (b) Give an account on the processes of urban sprawling and state its consequences in the peri-urban areas.

Group—B

2. Answer any *two* questions of the following : 2×4
- (a) Urbanism is a way of life characterised by density, diversity and complex social organization— Explain.
- (b) Why the cities in the developing entries are growing faster than the developed world ?
- (c) Elucidate the concept and factors of urban agglomeration processes.
- (d) Discuss in brief the structure of National Urban systems with special reference to India.

Group—C

3. Answer any *two* questions of the following : 2×2
- (a) What do you understand by rural Urban Continuum ?
- (b) State the impact of urbanization processes on urban ecology.
- (c) Identify the salient features of new towns.
- (d) What are the major characteristics of Urban Ghettos ?

Unit—32**(Planning for Regional Development)****Group—A**

1. Answer any one question of the following : 1×8
- (a) Discuss the evaluation and functions of different social classes in urban India.
 - (b) Explain the causes of formation and consequences of Urban Heat Island (UHI).

Group—B

2. Answer any two questions of the following : 2×4
- (a) Differentiate between TNC and MNC.
 - (b) What do you understand by segregation of urban settlements and what are the forces behind such segregation ?
 - (c) Explain with illustrations the concepts of city's ecological footprint.
 - (d) Why Remote sensing and GIS are essential tools for urban planning and management ?

Group—C

3. Answer any *two* questions of the following : 2×2
- (a) What do you understand by world city?
 - (b) Define urban sociology.
 - (c) What do you mean by deindustrialisation?
 - (d) What are the characteristics of metropolitanization in developing countries?
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OPTION—III**[Remote Sensing and GIS]****Unit—31****(Physical Basics of Remote Sensing)****Group—A**

Answer any *one* question : 1×8

1. What do you mean by electromagnetic radiation (EMR)? Discuss the two theories of EMR. 8
2. What is orbital velocity? How do we derive Kepler's 3rd law of planetary motion ($T^2 \propto r^3$) from orbital velocity?

Group—B

Answer any *two* questions of the following : 2×4

1. What is scattering? Explain different types of scattering. 4
2. What do you mean by temperature of a real body? State the difference between radiant and Kinetic temperature. 4
3. What are the different types of satellite platform? State the advantage and disadvantage of them. 4
4. What is path radiance? Explain the different paths of radiance with diagram. 4

Group—C

Answer any *two* questions : 2×2

1. Distinguish between reflection and refraction? 2
2. Why light bends while moving from lighter medium to denser medium? 2
3. At which portion of the electromagnetics spectrum remote sensing operation is executed and why? 2
4. What are the levels and types of data product from the remote sensing satellites. 2

Unit—32**(Photogrammetry & Aerial photo and Satellite System)****Group—A**

1. Answer any *one* question : 1×8
- (a) What do you mean by characteristics curve? How characteristics curve explain the properties of film density? 8
- (b) Mention different types of Geometric errors in case of aerial photograph and how do you rectify all those errors? 8

Group—B

2. Answer any *two* questions of the following : 2×4
- (a) What is photogrammetry? Write down the Significance of Photogrammetry in study the earth surface. 4
- (b) Write a short note on different types of filter and its utility. 4
- (c) How different types of image resolutions in Whiskbroom scanning system are determined? 4
- (d) Write a short note on image displacement due to parallax of aerial photograph. 4

Group—C

3. Answer any *two* questions : 2×2
- (a) What do you mean by principle point ?
 - (b) Which type of sensor is suitable for studying earth surface during rainy season and why ?
 - (c) Which type of film would you prefer to analyse vegetation cover and why ?
 - (d) What do you mean by stereoplatter ?
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