M.A./M.Sc. 3rd Semester Examination, 2018

GEOGRAPHY

PAPER – GEO-303(U-29 & 30)

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

(Special Paper : *Coastal Management*)

[Option—1]

UNIT—29

[*Marks* : 20]

GROUP–A

1. Answer any *one* question : 8 × 1

   (*a*) Explain the mechanism of wave refraction. Illustrate the landforms developed by wave refraction. 5 + 3

   (*b*) Elucidate the formation of rip cell under different situations in coast. 8

GROUP–B

2. Answer any *two* questions : 4 × 2

   (*a*) Examine the relevance of coastal study in the context of increasing problems.

   (*b*) Discuss the impacts of tidal asymmetry on estuarine system citing examples.

   (*c*) Assess the physical and ecological importance of coastal dune.

   (*d*) Explain the relation between wave dynamics and beach gradient.

GROUP–C

3. Answer any *two* questions : 2 × 2

(*a*) Define coastal zone as a system unit.

(*b*) How does primary coast differ from secondary coast ?

(*c*) Define tidal range.

(*d*) Define amphidromic point ?

(Special Paper : *Coastal ENVT : Focus on Indian Regions*)

UNIT–30

[*Marks* : 20]

GROUP–A

1. Answer any *one* question from the following : 8 × 1

(*a*) Describe the role of waves and wave induced currents in the formation and modification of shore fringed beaches and barriers along the Northern Bay of Bengal Coast.

(*b*) Explain the techniques for assessing coastal hazards and risks of site specific areas in the sensitive zones along the coast.

GROUP–B

2. Answer any *two* questions from the following : 4×2

(*a*) Assess the magnitude of the coastal erosion problems in terms of commerce and environment.

(*b*) Explain the impact of historical land reclamations of the Sundarbon in the content of rising sea level at present.

(*c*) Shortly explain the morphodynamics of carbonate shore platforms with examples from Andaman and Nicober Islands.

(*d*) Classify the estuary morphology of the Hooghly downstream section.

GROUP–C

3. Answer any *two* questions from the following : 2×2

(*a*) How do the human activities interfare into the coastal processes ?

(*b*) What is feedback mechanism in the morpho-dynamic behaviour of coastal systems ?

(*c*) What is the mechanism of beach rock formation ?

(*d*) What is the significance of temporal and spatial scales in explanation of coastal features ?

[Special Paper : *Urban*]

UNIT–29

(*Foundation of Urban Geography*)

[*Marks* : 20]

GROUP–A

1. Answer any *one* from the following questions : 8 × 1

(*a*) Account for the content and scope of Urban geography giving focus on its application aspect.

(*b*) Elucidate the process and types of urban sprawl and identify the social consequences resulting out of irrational urban sprawling.

GROUP–B

2. Answer any *two* from the following : 4×2

(*a*) Identify the spatial features of gated commities.

(*b*) Briefly discuss the effects of new town movement on the existing cities of development countries.

(*c*) Give a brief account on the nature of urbanisation in India since independence.

(*d*) What are the salient features of European style of Architecture.

GROUP–C

3. Answer any *two* questions from the following : 2×2

(*a*) Compare the system of Urban ecology with environmental ecology.

(*b*) What is Gnetto ?

(*c*) Who is the planner of Bhubaneswar City and what is the specificity of planning of the same.

(*d*) Compare the concept of urbanism with that of urbanization.

UNIT–30

(*Contemporary Urban Issues*)

[*Marks* : 20]

GROUP–A

1. Answer any *one* from the following questions : 8 × 1

(*a*) Examine the roles of socio-economic factors of homelessness in urban areas of developing countries.

(*b*) Explain the challenges management of air pollution problems in Urban India.

GROUP–B

2. Answer any *two* from the following questions : 4 × 2

(*a*) Compare between the role of basic and non-basic economic functions in urban growth.

(*b*) What are the parameters for measurement of urban livability index ?

(*c*) Elucidate briefly the concept of tolerance and impersonality of urban life.

(*d*) In which way remote sensing and GIS techniques help in urban space management ?

GROUP–C

3. Answer any *two* from the following questions : 2 × 2

(*a*) Define metropolitan area

(*b*) What is urban pathology ?

(*c*) Define UHI.

(*d*) What do you mean by urban ecological footprint ?

(Special Paper : *RS/GIS*)

UNIT–29

[*Marks* : 20]

GROUP–A

1. Answer any *one* question : 8 × 1

   (*a*) What is 'photoelectric effect' discovered by Albert Einstein ? How do you explain the wave nature of light. Give appropriate diagram.

   (*b*) Explain the type of interference that are produced by the atmosphere during passive remote sensing.

GROUP–B

2. Answer any *two* from the following questions : 4 × 2

   (*a*) State the implication of Wine's Displacement Law in thermal remote sensing to designe thermal sensor.

(*b*) Prove that emissivity (ξ) is proportional to 4th power of the ratio of radiant to kinetic temperature

$$\left[\xi = \left(\frac{Trad}{Tkin}\right)^4\right].$$

(*c*) What is orbital velocity of a satellite ? Give a mathematical proof of $v = \sqrt{\frac{GM}{r}}$, where v is orbital velocity, G is gravitational constant, M is the mass at the larger body and r is the height of the smaller body above the surface of the larger body or in other wods it is radius at the circular orbit.

(*d*) Give a brief description of data format and data type of optical remote sensing sensors.

GROUP–C

3. Answer any *two* questions from the following : 2 x 2

(*a*) Why O_3 absorbs uv radiation at the upper atmosphere ?

(*b*) Which part of the electromagnetic spectrum is called 'atmospheric window and why ?

(*c*) Would remote sensing at the Earth's surface and atmosphere still be possible if there is no atmospheric window ? Why ?

(*d*) Find radiant temperature of dry loam soil if its ξ is 0·92 and true kinetic temperature is 27 °C.

UNIT–30

[*Marks* : 20]

GROUP–A

1. Answer any *one* question : 8×1

(*a*) How characteristics curves of photographic films explain about the multiple property of the film that determines the quality of aerial photographs ? Brief with suitable diagrams.

(*b*) What are the steps since flight planning to aerial photograph development process, one should follow to get the best quality aerial photograph ? Give suitable diagrams.

GROUP–B

2. Answer any *two* questions : 4×2

(*a*) What do you mean by parallax and how do you calculate it from the air photopair ?

(*b*) How orthophotos are produced and why it is called 'best of bath would' ?

(*c*) Write a brief note on digital photogrammetry.

(*d*) Write a short note on the application of different resolution (coarse, fine and very fine) satellite system with suitable examples.

GROUP–C

3. Answer any *two* questions : 2 × 2

(*a*) What do you mean by geometric error ?

(*b*) What is an antivignetting filter ?

(*c*) What do you understand by colour substruction ?

(*d*) How do you calculate the diameter (coverage) from I FOV ?
