

Total No. of Questions : 8]

SEAT No. :

[Total No. of Pages :2

**P3171**

**[5031]-101**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg. - 101 : Principles of Geomorphology  
(2013 Pattern) (Semester - I) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks : 50*

*Instructions to the candidates:*

- 1) *Attempt any three questions from question number 1 to 6.*
- 2) *Question no 7 and 8 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw figures/maps wherever necessary.*
- 5) *Use of map, stencils and calculator is allowed.*

- Q1)** a) What is spatial scale in geomorphology? [2]  
b) Write in brief the history of geomorphology. [4]  
c) Write a note on process geomorphology. [4]
- Q2)** a) Define exogenetic forces. [2]  
b) Explain seismic waves as a source of knowledge of the earth's interior. [4]  
c) Write a note on global isostatic adjustments. [4]
- Q3)** a) What is palaeomagnetism? [2]  
b) Describe wegener's continental Drift Theory. [4]  
c) Explain biotic weathering in short. [4]
- Q4)** a) What is river erosion? [2]  
b) Explain seafloor spreading in short. [4]  
c) With suitable diagrams explain any two types of mass movement. [4]

**P.T.O.**

- Q5)** a) What is cycle of erosion? [2]  
b) Explain any two landforms produced by fluvial erosion. [4]  
c) Give an account on types of glaciers. [4]
- Q6)** a) What do you mean by saltation? [2]  
b) Explain the concept of pediplanation. [4]  
c) Give the mechanism of deposition by the wind in arid region. [4]
- Q7)** a) Write a note on mechanism of transportation by sea waves. [5]  
b) Give any two erosional landforms produced by glaciers. [5]
- Q8)** a) Give different facets of slope profile. [5]  
b) Write a short note on slope decline. [5]



Total No. of Questions :8]

SEAT No. :

[Total No. of Pages :2

**P3172**

**[5031] - 102**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 102 : Principles of Climatology**

**(2013 Pattern) (Credit System) (Semester - I)**

*Time : 3 Hours]*

*[Max. Marks :50*

*Instructions to the candidates:*

- 1) *Attempt any three questions from Q1. to Q6.*
- 2) *Question numbers 7 and 8 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) What is ionosphere? [2]
- b) Discuss the structural layers of the atmosphere. [4]
- c) Describe the chemical composition of the atmosphere. [4]
- Q2)** a) What is electromagnetic spectrum? [2]
- b) Explain the latitudinal and seasonal variations in insolation. [4]
- c) Explain the energy balance of earth and atmosphere. [4]
- Q3)** a) What is inversion of temperature? [2]
- b) Explain vertical distribution of air temperature. [4]
- c) Discuss radiational inversion of temperature. [4]

***P.T.O.***

- Q4)** a) How does air pressure change with altitude. [2]  
b) Explain - the factors determining wind direction and velocity. [4]  
c) Discuss the geostrophic winds. [4]
- Q5)** a) What do you mean by primary atmospheric circulation? [2]  
b) Discuss the prevailing winds. [4]  
c) Explain the Jet streams. [4]
- Q6)** a) What is an air mass? [2]  
b) Which are the various source regions of air masses? [4]  
c) Discuss the types of fronts. [4]
- Q7)** a) Discuss the subdivisions of climatology. [5]  
b) Explain the hydrological cycle. [5]
- Q8)** a) Explain the absolute instability of the atmosphere. [5]  
b) Explain any two methods of weather forecasting. [5]



Total No. of Questions :8]

**P3173**

SEAT No. :

[Total No. of Pages :2

**[5031]-103**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg-103:Principles of Economic Geography  
(2013 Pattern) (Semester-I) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks :50*

*Instructions to the candidates:*

- 1) *Attempt any three questions from question number 1 to 6*
- 2) *Question number 7 and 8 are compulsory*
- 3) *Figures to the right indicate marks.*
- 4) *Use of map stencils and calculator is allowed.*

- Q1)** a) Give any two definitions of 'Economic geography. [2]  
b) Explain the scope of economic geography. [4]  
c) Give an account of recent trends in economic geography. [4]
- Q2)** a) What is hypothesis? [2]  
b) Describe the types of hypothesis. [4]  
c) How are the hypothesis formed and tested. [4]
- Q3)** a) What do you mean by village economic landscape? [2]  
b) Trace out the historical evolution of economic landscape. [4]  
c) Explain the zonal arrangement of economic activities with reference to von thunon model. [4]
- Q4)** a) What do you mean by spatial variation in demand? [2]  
b) Explain the importance of capital in economic activity. [4]  
c) Discuss the external economies of scale. [4]
- Q5)** a) What are the spatial and temporal aspects of economic development?[2]  
b) Explain the various measures of economic development. [4]  
c) Explain Myrdal's model of economic development. [4]

**P.T.O.**

- Q6)** a) What do you mean by privatisation? [2]  
b) Explain the natural factors behind regional disparity in Indian economic development. [4]  
c) Give a brief history of India's economic development after independence. [4]
- Q7)** a) Discuss the importance of natural resources in economic development. [5]  
b) Discuss the spatial variation in cost of transportation. [5]
- Q8)** a) Explain the natural factors influencing international trade. [5]  
b) Explain the problems of international trade. [5]



Total No. of Questions :8]

SEAT No. :

[Total No. of Pages :2

**P3174**

**[5031] - 104**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 104 : Principles of Population and Settlement Geography  
(2013 Pattern) (Semester - I) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks :50*

*Instructions to the candidates:*

- 1) Attempt any three questions from question number 1 to 6.*
- 2) Question numbers 7 and 8 are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Use of map stencils is allowed.*

**Q1) a)** Explain the ecological approach to the study of settlement geography. [2]

b) Describe any two approaches to the study of population geography. [4]

c) Describe economic factors influencing distribution of settlements. [4]

**Q2) a)** What is threshold? [2]

b) Describe the effects of technology on shelter from neolithic to modern period. [4]

c) Describe the importance of transportation in urban growth. [4]

**Q3) a)** List the social factors influencing population distribution. [2]

b) Describe economic factors influencing population distribution. [4]

c) Describe the physical factors influencing the nucleation of settlements. [4]

**P.T.O.**

- Q4)** a) What is hierarchy? [2]  
b) Discuss relevance of Demographic Transition model. [4]  
c) Describe Ricardo's Theory. [4]
- Q5)** a) List the economic factors influencing the dispersion of settlements. [2]  
b) Describe the physical factors influencing distribution of settlements. [4]  
c) Give the criticism on Malthus theory. [4]
- Q6)** a) Explain the spatial approach to the study of settlement geography. [2]  
b) Describe the man-environment relationship. [4]  
c) Describe the levels of urbanisation in the world. [4]
- Q7)** a) Describe Charistaller's theory of settlement. [5]  
b) Explain any two aspects of population as a resource. [5]
- Q8)** a) Describe the economic factors influencing the nucleation of settlements. [5]  
b) Explain the social factors related to dispersion of settlements. [5]



Total No. of Questions : 6]

SEAT No. :

**P3175**

**[5031]-201**

[Total No. of Pages : 3

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg. - 201 : Quantitative Techniques in Geography  
(2013 Pattern) (Semester - II) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.1 to Q.4.*
- 2) *Question 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of statistical tables and calculators is allowed.*

**Q1) a)** What do you mean by discrete and continuous data? **[2]**

**b)** Calculate mean and standard deviation for the given data: **[4]**

Classes	50.21- 52.21	52.21- 54.21	54.21- 56.21	56.21- 58.21	58.21- 60.21
f	10	42	47	64	52

Classes	60.21- 62.21	62.21- 64.21	64.21- 66.21	66.21- 68.21	68.21- 70.21	70.21- 71.21
f	44	29	18	6	4	2

**c)** Calculate skewness for the data provided in Q.1.b. **[4]**

**Q2) a)** Give any two characteristics of normal probability distribution. **[2]**

**b)** The analysis of the flood occurrences at Station X reveals that the bankful discharge condition is reached by floods 8 times in 20 years. Find the probability that the next 9 years the station shall have bankful discharge condition in- **[4]**

- i) more than 6 years
- ii) less than 4 years

**P.T.O.**

- c) During the last 2000 years 20 seismic tremors of an intensity of more than 8 Richter scale were recorded at a station. Using an appropriate probability distribution, find the probability that in the next 100 years the station will be struck by: [4]
- less than 8 seismic tremors
  - 7 seismic tremors.

- Q3)** a) Explain the concept of residuals in bivariate analysis. [2]
- b) Calculate the Person product moment correlation coefficient ( $r$ ) between distance upstream from the confluence of two rivers and sediment size. Interpret the results. [4]

Distance (m)	10	20	30	40	50	60	70	80
Sediment diameter(mm)	1.2	1.31	1.50	1.69	1.82	1.90	1.99	2.0

- c) Obtain a simple linear regression equation for the data given in Q3 b. [4]

- Q4)** a) Define the terms population and sample in statistics. [2]
- b) Formulate the hypothesis and apply t test for the given data. [4]

Sample 1	1	0.8	0.5	0.6	0.7	0.6	0.6
Sample 2	0.4	1.1	0.4	0.6	0.5	0.4	0.8

- c) From the results obtained in Q.4 b test the hypothesis at 0.05, 0.01 and 0.001 level of significance and interpret the same. [4]

- Q5)** a) Apply F test to prove the hypothesis that there is no difference in the four samples and their categories have meaningful distribution. [5]

Sample 1	Sample 2	Sample 3	Sample 4
0.5	5.5	12.1	15.2
1.6	7.3	13.2	16.6
2.5	8.2	15.3	17.8
4	10	15.1	18.9
4.5	11.3	16.5	19.3

- b) From the results obtained in Q.5 a test the hypothesis at the 0.05, 0.01 and 0.001 level of significance and interpret the same. [4]

- Q6)** a) Calculate 5-year moving average for mean tidal level in a bay for 24 successive years. Plot the data and interpret. [5]

Year	1960	1961	1962	1963	1964	1965	1966	1967
Tidal level in m	2.1	3.2	5.3	2.3	5.6	3.2	2.5	3.2
Year	1968	1969	1970	1971	1972	1973	1974	1975
Tidal level in m	5.6	4.9	4.8	4.7	6.3	5.2	5.3	4.8
Year	1976	1977	1978	1979	1980	1981	1982	1983
Tidal level in m	4.7	4.4	5.2	5.5	4.3	4.5	4.8	5.0

- b) Write a note on scales of measurement. [4]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 1

**P3176**

**[5031]-202**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg- 210:Coastal Geomorphology**

**( 2013 Pattern) (Credit System) (Semester-II)**

*Time : 3 Hours]*

*[Max. Marks : 38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.1 to Q.4.*
- 2) *Q.5 and Q.6 are compulsory.*
- 3) *Draw figures/ maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) What is temporal scale in coastal geomorphology? [2]  
b) Explain the process of shoaling of wave. [4]  
c) Explain gravity and swell waves? [4]
- Q2)** a) What are rip currents? [2]  
b) Explain co-tidal lines. [4]  
c) Discuss the association between tides and coastal landforms. [4]
- Q3)** a) What is spring tide? [2]  
b) Write a note on Holocene transgression. [4]  
c) Explain the pathways of sediment transport. [4]
- Q4)** a) What are clastic sediments? [2]  
b) Explain the causes and consequences of sea- level change. [4]  
c) Write a note on contemporary coastal issues. [4]
- Q5)** a) Write a note on morphodynamics of coastal deltas. [4]  
b) Explain the formation of sea cliffs and caves. [5]
- Q6)** a) Explain the morphology of mud flats. [4]  
b) Write a note on corals and coral reefs. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 1

**P3177**

**[5031]-203**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg- 211:Synoptic Climatology**

**( 2013 Pattern) (Credit System) (Semester-II)**

*Time : 3 Hours]*

*[Max. Marks : 38*

**Instructions:**

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) What are the levels of climatological synthesis? [2]  
b) Explain the analytical approach to the study of synoptic climatology.[4]  
c) Discuss the meteorological code and data exchange. [4]
- Q2)** a) What are the tornados? [2]  
b) Discuss the development and occurrence of tornados. [4]  
c) Describe the environmental impact of severe weather systems. [4]
- Q3)** a) What do you mean by convective precipitation? [2]  
b) Describe the cloud classification. [4]  
c) Compare and contrast the heat waves and cold waves. [4]
- Q4)** a) What do you mean by short range weather forecasting? [2]  
b) Discuss the numerical method of weather forecasting. [4]  
c) Explain the role of satellites in weather forecasting [4]
- Q5)** a) Describe the tropical cyclones. [4]  
b) Explain the air masses of North America. [5]
- Q6)** a) Explain the life cycle of wave cyclone. [4]  
b) Discuss the benefits of weather forecasting with reference to agriculture.[5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 1

**P3178**

**[5031]-204**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg. 212:Agricultural Geography  
( 2013 Pattern) (Credit System) (Semester-II)**

*Time : 3 Hours]*

*[Max. Marks : 38*

**Instructions:**

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Draw figures/ maps whenever necessary.*
- 4) *Use of map stencils and calculator is allowed.*
- 5) *Figures to the right side indicate full marks.*

- Q1)** a) Define agricultural geography. [2]  
b) Explain the singnificance of agriculture in Indian economy. [4]  
c) Describe the regional approach to the study of agricultural geography. [4]
- Q2)** a) What is commodity approach? [2]  
b) Write a note on mixed farming. [4]  
c) Explain the nature of agricultural geography. [4]
- Q3)** a) What do you mean by intensive subsistence farming? [2]  
b) Explain the salient features of weaver's crop combination method. [4]  
c) Describe the influence of relief on agriculture. [4]
- Q4)** a) Define drought. [2]  
b) Explain the significance of Bhatia's crop-combination method. [4]  
c) Explain the role of irrigation in arid regions. [4]
- Q5)** a) Describe the economical factors influencing agricultural production. [4]  
b) Explain the parameters of landuse survey. [5]
- Q6)** a) Discuss the agricultural regions in India. [4]  
b) Explain the scope of agricultural geography. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 1

**P3179**

**[5031]-205**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg. 213:Population Geography  
( 2013 Pattern) (Credit System) (Semester-II)**

*Time : 3 Hours]*

*[Max. Marks : 38*

**Instructions:**

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) Define population geography. [2]  
b) Describe the approaches to the study of population geography. [4]  
c) Discuss the physical factors affecting world population distribution. [4]
- Q2)** a) Define mortality. [2]  
b) Describe the factors affecting mortality. [4]  
c) Discuss the factors influencing population growth. [4]
- Q3)** a) Define fertility. [2]  
b) Explain the level and trends of fertility in developing countries. [4]  
c) Discuss the population policies in India. [4]
- Q4)** a) What is population projection? [2]  
b) Explain the importance of population projection in agricultural development. [4]  
c) Discuss Malthus population Theory. [4]
- Q5)** a) Discuss the literacy and economic composition of population. [4]  
b) Discuss the causes and consequences of migration. [5]
- Q6)** a) Discuss the age and sex composition of population. [4]  
b) Critically examine the Demographic Transition Theory. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3180**

**[5031]-206**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-220: Fluvial Geomorphology**

**(2013 Pattern) (Semester - II) (Credit System)**

*Time :3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.1 to Q.4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) What is drainage basin? [2]
- b) State the laws of allometric growth. [4]
- c) Distinguish between steady and unsteady flow. [4]
- Q2)** a) What is isovels? [2]
- b) Explain in detail, at - a - station hydraulic geometry. [4]
- c) Explain the capacity and competence of a river. [4]
- Q3)** a) Define meandering channel. [2]
- b) Explain the concept of grade. [4]
- c) Write a note on channel types. [4]

**P.T.O.**

- Q4)** a) What is lateral erosion of a channel? [2]  
b) Explain various types of erosion. [4]  
c) How flood plains are formed? [4]
- Q5)** a) Write a note on 'Horton's Overland flow'. [4]  
b) Explain the types and combinations of river terraces. [5]
- Q6)** a) Write a note on riparian vegetation. [4]  
b) Explain the long term and short - term adjustments in river metamorphosis. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3181**

**[5031]-207**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-221: Monsoon Climatology**

**(2013 Pattern) (Semester - II) (Credit System)**

*Time :3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Questions number 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) Define 'Monsoon Climatology' [2]
- b) Discuss the environmental and economic importance of monsoon climatology. [4]
- c) Explain the concept of thermal origin of monsoons. [4]
- Q2)** a) What is aerological concept of monsoons? [2]
- b) Differentiate between east and South Asian monsoons [4]
- c) Discuss the 'Classical Theory' of monsoons. [4]
- Q3)** a) What do you mean by winter monsoon? [2]
- b) Explain the differential heating of land and water. [4]
- c) Discuss the annual cycle of summer monsoons. [4]

**P.T.O.**

- Q4)** a) What do you mean by monsoon forecasting? [2]
- b) Discuss the ENSO indicators and monsoon forecasting. [4]
- c) Explain the multiple power Regression model of monsoon forecasting. [4]
- Q5)** a) Discuss the temperature at the surface and aloft during summer monsoons. [4]
- b) Explain the long period trends in Indian rainfall. [5]
- Q6)** a) Discuss the main rain bearing systems. [4]
- b) Explain the walker circulation with reference to monsoons. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3182**

**[5031]-208**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-222: Industrial Geography**

**(2013 Pattern) (Semester - II) (Credit System)**

*Time :3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from question No.1 to 4.*
- 2) Questions number 5 and 6 are compulsory.*
- 3) Draw figures/maps wherever necessary.*
- 4) Use of map stencils and calculator is allowed.*
- 5) Figures to the right indicate full marks.*

- Q1)** a) Define Industrial geography. [2]
- b) Write a note on industrial regions. [4]
- c) Write assumptions of Weber's model. [4]
- Q2)** a) What do you mean by agglomeration? [2]
- b) Explain the problems of Anglo-American industrial regions. [4]
- c) Explain the nature of industrial geography. [4]
- Q3)** a) State four Anglo-American industrial regions. [2]
- b) Describe the distribution of iron and steel industries in India. [4]
- c) Critically evaluate 'Israd's model. [4]

**P.T.O.**

- Q4)** a) What do you mean by decentralization of industrial location. [2]
- b) Explain with examples the salient features of Japanese industrial regions. [4]
- c) Explain the problems of IT industries in India. [4]
- Q5)** a) Explain the impact of geographical factors on industrial location. [4]
- b) Describe the scope of industrial geography. [5]
- Q6)** a) Describe the role of software industry in India. [4]
- b) Give an account of textile industries in India. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3183**

**[5031]-209**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-223: Geography of Rural Settlement  
(2013 Pattern) (Semester - II) (Credit System)**

*Time :3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from Q1 to Q4.*
- 2) Questions 5 and 6 are compulsory.*
- 3) Draw figures / maps wherever necessary.*
- 4) Figures to the right indicate full marks.*
- 5) Use of map stencils and calculator is allowed.*

- Q1)** a) Define settlement geography. [2]
- b) Discuss the historical aspects of settlements reflected in placenames. [4]
- c) Explain the evolution of settlements. [4]
- Q2)** a) List the factors affecting settlement site and situations. [2]
- b) Explain the factors affecting growth of settlement. [4]
- c) Explain Von Thunen Theory of rural land use. [4]
- Q3)** a) What is centraling? [2]
- b) Describe the central place Theory. [4]
- c) Discuss the socio-economic transformation in rural areas. [4]

***P.T.O.***

- Q4)** a) What is dispersion of settlements. [2]
- b) Explain the factors affecting nucleation of settlements. [4]
- c) Describe the morphogenesis of rural settlements. [4]
- Q5)** a) Describe occupation and education aspects of demography. [4]
- b) Discuss the causes of migration in rural areas. [5]
- Q6)** a) Describe the physical and economic factors affecting rural house types. [4]
- b) Explain various patterns of rural settlements. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3184**

**[5031] - 210**

**M.A. / M.Sc.**

**GEOGRAPHY**

**Gg. 204 : Geography of Tourism**

**(2013 Pattern) (Credit System) (Semester-II)**

*Time : 3 Hours]*

*[Max. Marks :38*

**Instructions:**

- 1) *Attempt any two questions from question No. 1 to 4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicates full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) What do you mean by tourism? [2]  
b) Distinguish between leisure, recreation & tourism. [4]  
c) Briefly discuss the evolution of tourism industry in India. [4]
- Q2)** a) What is adventure tourism? [2]  
b) Examine the socio-economic impact of tourism with special reference to India. [4]  
c) Describe the role of travel agencies in the promotion of tourism. [4]
- Q3)** a) Define medical tourism. [2]  
b) Discuss the recent trends of growth of international tourism in India. [4]  
c) Discuss the basic elements of tourism. [4]
- Q4)** a) Enlist any four hill stations in Maharashtra. [2]  
b) Evaluate the role of state government in planning and promoting tourism in India. [4]  
c) Discuss the changes in the global pattern of tourism that have occurred since second half of the twentieth century. [4]

**P.T.O.**

- Q5)** a) Describe the coastal tourism. [4]  
b) Critically examine the impact of tourism development on environment. [5]
- Q6)** a) Describe the various types of tourism. [4]  
b) Analyse the potentials of temple, caves, and forts in promoting heritage and adventure tourism in Maharashtra. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3185**

**[5031] - 211**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 205 : Geography of Disaster Management  
(2013 Pattern) (Credit System) (Semester - II)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from question number 1 to 4.*
- 2) Question number 5 and 6 are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Use of map stencils is allowed.*

- Q1)** a) What do you mean by disaster? [2]
- b) Describe the effects of landslide. [4]
- c) Explain the causes of earthquakes. [4]
- Q2)** a) Define hazard. [2]
- b) Discuss the economic impact of floods. [4]
- c) Describe the psychological impact of droughts. [4]
- Q3)** a) What are the effects of Tsunami? [2]
- b) Explain the trends in urban disasters. [4]
- c) Describe the complex emergencies in fire disasters. [4]

***P.T.O.***

- Q4)** a) What is disaster management? [2]  
b) Describe the role of Police forces in natural hazards. [4]  
c) Explain the role of Para-military forces in natural hazards. [4]
- Q5)** a) Explain the various factors of disaster management. [4]  
b) Explain the use of technologies in disaster management. [5]
- Q6)** a) Explain the role of Remote sensing in disaster management. [4]  
b) Discuss the disaster of floods in India. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :2

**P3186**

**[5031]-212**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 206 : Geography of Energy Resources  
(2013 Pattern) (Semester - II) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.No.1 to Q.No.4.*
- 2) *Questions No.5 and 6 are compulsory.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculators is allowed.*

- Q1)** a) Define renewable energy resources. [2]  
b) Distinguish primary and secondary energy resources. [4]  
c) Discuss the historical background of energy use and development. [4]
- Q2)** a) What is an energy crisis? [2]  
b) Discuss the world pattern of natural oil production. [4]  
c) Explain global scenario of energy requirement. [4]
- Q3)** a) Define energy conservation. [2]  
b) Explain the world consumption pattern of renewable resources? [4]  
c) Discuss the traditional and modern methods of energy conservation.[4]
- Q4)** a) What is the potential zone of energy conservation? [2]  
b) Explain spatial pattern of energy consumption in agricultural sector in India. [4]  
c) Discuss the various energy related agreements of India with other countries. [4]

**P.T.O.**

- Q5)** a) Discuss the impact of energy use on environment. [4]  
b) Describe present geo-politics of energy in the world. [5]
- Q6)** a) Discuss energy management for sustainable development. [4]  
b) Discuss issues related to energy use and mitigation of energy crisis in India. [5]



Total No. of Questions : 6]

SEAT No. :

**P3187**

**[5031] - 213**

[Total No. of Pages :1

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg-208 : Geoinformatics - I**

**(2013 Pattern) (Credit System) (Semester - II)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.No.1 to Q.No.4.*
- 2) *Questions No.5 and 6 are Compulsory.*
- 3) *Draw figures/Maps Wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) Which are the components of GIS? [2]  
b) Explain any two applications of GIS. [4]  
c) Write a note on the history of GIS. [4]
- Q2)** a) What is meant by topology? [2]  
b) Explain the concept of layers used in GIS with examples. [4]  
c) Differentiate between nominal and ordinal scales of measurement. [4]
- Q3)** a) Enlist the objectives of GIS. [2]  
b) Explain any two models used in the implementation of DBMS. [4]  
c) Explain the raster format. Give its advantages. [4]
- Q4)** a) What is map algebra? [2]  
b) Explain manual digitizing with suitable diagrams. [4]  
c) Write a note on the tasks of GIS. [4]
- Q5)** a) Examine the benefits and constraints of vector format used in GIS. [4]  
b) Describe Structured query language. [5]
- Q6)** a) Discuss the local and focal operations. [4]  
b) Discuss the error detection and editing in digitizing process. [5]

✓ ✓ ✓

Total No. of Questions : 6]

SEAT No. :

**P3188**

**[5031]-214**

[Total No. of Pages : 1

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 209 : Geoinformatics - II**

**(2013 Pattern) (Semester - II) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks : 38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q1 to Q4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) Mention the data source in remote sensing. [2]  
b) Explain the electromagnetic spectrum with a suitable diagram. [4]  
c) Write the significance of remote sensing data in spatial analysis. [4]
- Q2)** a) Define the term spectral signature. [2]  
b) Explain the interaction of EMR with the atmosphere. [4]  
c) Explain types of remote sensing with respect to energy source. [4]
- Q3)** a) Name the types of aerial photographs. [2]  
b) Explain the 'atmospheric windows'. [4]  
c) Describe the various segments of GPS. [4]
- Q4)** a) State the types of remote sensing platforms. [2]  
b) Write a note on measurement of scale and height from aerial photographs. [4]  
c) Explain the components of an aerial camera. [4]
- Q5)** a) Give an account of the historical development of remote sensing. [4]  
b) Explain the concept of Black body radiation. [5]
- Q6)** a) Explain the geometric characteristics of aerial photographs. [4]  
b) Write a note on the factors governing the interpretability of satellite images. [5]

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Total No. of Questions : 6]

SEAT No. :

**P3189**

**[5031]-301**

[Total No. of Pages : 1

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg. - 301 : Geography of India with Special Reference to Maharashtra  
(2013 Pattern) (Semester - III) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from question no. 1 to 4.*
- 2) *Question no 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map, stencils and calculator is allowed.*

- Q1)** a) Name the neighbouring countries of India. [2]  
b) Describe the geological structure of Maharashtra. [4]  
c) Describe the drainage system of the Godavari. [4]
- Q2)** a) What is season? [2]  
b) Describe the physiography of North Indian Plain. [4]  
c) Explain the mechanism of south -west monsoon. [4]
- Q3)** a) What is soil degradation? [2]  
b) Describe major soil types in Maharashtra. [4]  
c) Give an account of green revolution in India. [4]
- Q4)** a) Mention various types of forests in Maharashtra. [2]  
b) Describe the production and distribution of petroleum in India. [4]  
c) Explain the distribution and production of cotton in India. [4]
- Q5)** a) Give an account of fertilizer industries in India. [4]  
b) Explain the growth and distribution of population in India. [5]
- Q6)** a) Write a note on developed regions in India. [4]  
b) Describe the distribution of Iron ore in India. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3190**

**[5031] - 302**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 310 : Tropical Geomorphology  
(2013 Pattern) (Credit System) (Semester - III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from question number 1 to 4.*
- 2) Questions 5 and 6 are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Use of map stencils and calculator is allowed.*

- Q1)** a) Mention the peculiarities of the tropical climate. [2]
- b) Explain the tropical weathering. [4]
- c) Describe major secondary minerals found in the tropics. [4]
- Q2)** a) Mention the names of laterites. [2]
- b) Explain process of slope wash. [4]
- c) Describe duricrust in the tropical environment. [4]
- Q3)** a) Define stream erosion. [2]
- b) Distinguish between domed and boulder inselbergs. [4]
- c) Explain relief characteristics of tropical terrain. [4]

***P.T.O.***

- Q4)** a) What is pediments. [2]  
b) Give brief account of morphogenetic region. [4]  
c) Write note on tropical coast. [4]
- Q5)** a) Explain the climatic changes during quarternary period. [4]  
b) Explain the various types of mass movements in tropics. [5]
- Q6)** a) Explain the nature of deep weathering profile. [4]  
b) Write note on tropical soils. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3191**

**[5031] - 303**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 311 : Applied Climatology**

**(2013 Pattern) (Credit System) (Semester - III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*
- 5) *Draw figures/ maps wherever necessary.*

- Q1)** a) What is evapotranspiration? [2]
- b) Explain the empirical methods to estimate evapotranspiration. [4]
- c) Explain the relationship between soil moisture and plants. [4]
- Q2)** a) What do you mean by micro-meteorological change? [2]
- b) Discuss the relationship between climate and livestock. [4]
- c) Explain the impact of micro-meteorological changes on pests and diseases. [4]
- Q3)** a) Define human biometeorology. [2]
- b) Discuss the impact of climate on clothing. [4]
- c) Explain the nature of urban climates. [4]

***P.T.O.***

- Q4)** a) What do you mean by ‘Climate change’? [2]  
b) Discuss the relationship between solar variabilities and climate change. [4]  
c) Explain the role of remote sensing in agriculture. [4]
- Q5)** a) Explain the ‘Climate impact assessment’. [4]  
b) Discuss the nature of global environmental change. [5]
- Q6)** a) Explain the significant climate variables with reference to industry. [4]  
b) Discuss the effects of climate on land transport. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3192**

**[5031] - 304**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 312 : Trade and Transport Geography  
(2013 Pattern) (Credit System) (Semester - III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Draw figures/ map wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) State any two approaches to the study of trade and transport geography. [2]  
b) Write a note on balance of trade. [4]  
c) Describe the limitations of roadways in regional development. [4]
- Q2)** a) What is traffic flow? [2]  
b) Critically evaluate gravity model. [4]  
c) Explain the characteristics of inland water ways. [4]
- Q3)** a) What do you mean by accessibility? [2]  
b) Give an account of development of geography of trade and transport. [4]  
c) Explain the network structure of transport. [4]

***P.T.O.***

- Q4)** a) Define international trade. [2]  
b) Explain the alternative transport system in Indian cities. [4]  
c) Explain the importance of railways in the regional development. [4]
- Q5)** a) Explain the impact of economic factors on the location of seaports. [4]  
b) Examine the Neo-classical theory. [5]
- Q6)** a) Describe the problems of international trade. [4]  
b) Explain the significance of transportation in regional economics. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3193**

**[5031] - 305**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 313 : Urban Geography**

**(2013 Pattern) (Credit System) (Semester - III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from question number 1 to 4.*
- 2) Question number 5 and 6 are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Use of map stencils is allowed.*

- Q1)** a) Define central place. [2]  
b) Explain the nature of urban geography. [4]  
c) Explain the contemporary factors of urbanisation. [4]
- Q2)** a) What is urban structure? [2]  
b) Describe the Park and Burgess model of urban structure. [4]  
c) Discuss 'conurbation and megalopolis. [4]
- Q3)** a) What do you mean by rural-urban fringe? [2]  
b) Describe the characteristics of CBD. [4]  
c) Explain the criteria used to classify the towns and cities. [4]

***P.T.O.***

- Q4)** a) What is rank size rule? [2]  
b) Discuss the urban transport problems. [4]  
c) Explain the need of urban planning. [4]
- Q5)** a) Explain the concept of city-region. [4]  
b) Discuss the problem of urban environmental pollution. [5]
- Q6)** a) Explain the role of GIS in modern city planning. [4]  
b) Describe christaller's Central Place Theory. [5]



Total No. of Questions :6]

P3194

SEAT No. :

[Total No. of Pages :3

[5031]-306

M.A./M.Sc.

GEOGRAPHY

Gg-320 Multivariate Statistics

(2013 Pattern) (Semester-III) (Credit System)

Time : 3 Hours]

[Max. Marks :38

Instructions to the candidates:

- 1) Attempt any two questions from Q.1 to Q.4.
- 2) Question 5 and 6 are compulsory.
- 3) Figures to the right indicate full marks.
- 4) Use of statistical tables and calculator is allowed.

Q1) a) Define the terms Matrix and dimension of a matrix. [2]

b) Find  $A * B$  [4]

$$A = \begin{pmatrix} 326 & 695 & 102 \\ 647 & 203 & 666 \\ 40 & 2 & 83 \end{pmatrix} \quad B = \begin{pmatrix} 30 & 8 & 12 \\ 8 & 41 & 15 \\ 21 & 23 & 2 \end{pmatrix}$$

c) Find the Inverse of Matrix B given in Q.1 b. [4]

Q2) a) List the steps used in stepwise multiple regression. [2]

b) Using the data given below find the  $A_0$ ,  $A_1$  and  $A_2$  determinants. [4]

X	2	5	6	8	10	13	18	19	20	22	25	28
Y	12	16	20	24	28	30	27	23	19	15	11	9

P.T.O.

- c) From the Determinants found in above Q2b obtain the second degree bivariate regression equation. And interpret the results. [4]

**Q3) a)** Write the given data in a proper variance covariance matrix format.

Means:  $\bar{Y} = 0.67$ ;  $\bar{X}_1 = 9.96$ ;  $\bar{X}_2 = 14.45$ ;  $n=9$

Variances:  $\sigma^2 Y = 0.06$ ;  $\sigma^2 X_1 = 30.91$ ;  $\sigma^2 X_2 = 32.70$

Covariances:  $\text{Cov } YX_1 = 0.4608$ ;  $\text{Cov } YX_2 = -0.43$ ;  $\text{Cov } X_1 X_2 = -17.30$  [2]

- b) Using the data given in Q3 a find the  $A_0$ ,  $A_1$  and  $A_2$  determinants. [4]  
 c) Using the determinants obtained above compute a multiple regression equation, explained variance and interpret the results. [4]

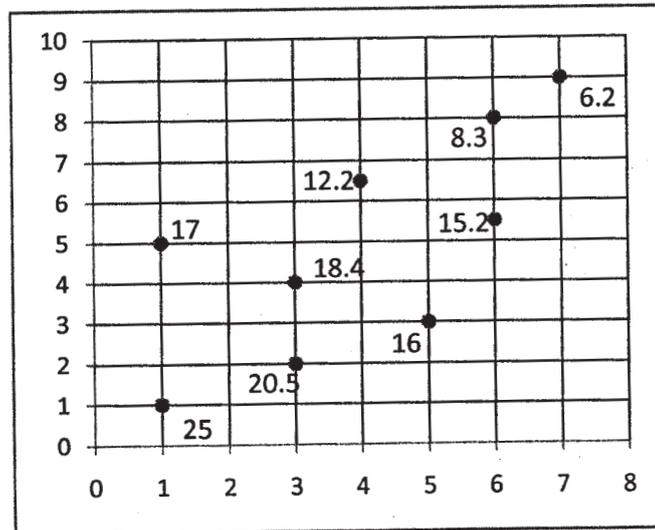
**Q4) a)** Give the importance of trend surface analysis in the study of spatially distributed data. [2]

b) Using the following matrix obtain the first factor loadings matrix. [4]

	X1	X2	X3	X4	X5
X1	1	0.08	0.34	0.14	-0.23
X2	0.08	1	0.3	0.4	0.45
X3	0.34	0.3	1	0.36	-0.36
X4	0.14	0.4	0.36	1	0.59
X5	-0.23	0.45	-0.36	0.59	1

- c) Compute Eigen vector and the variance explained by the factor loadings form the above given data and interpret the results. [4]

- Q5) a)** Write the data in a tabular (XYZ) format using the given scatter plot and fit a suitable trend surface equation. **[5]**



- b) Using the results obtained from Q.5 a find the explained variance , level of significance at 0.05 level and interpret the results. **[4]**

- Q6) a)** Using the correlation matrix given in Q. 4 b Compute the first principal component loadings. **[5]**

- b) From the principal loadings obtained in the Q.6 a find Eigen value, explained variance and interpret the results. **[4]**



Total No. of Questions :6]

**P3195**

SEAT No. :

[Total No. of Pages :1

**[5031]-307**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-321 Political Geography**

**(2013 Pattern) (Semester-III) (Credit System)**

*Time :3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from question number 1 to 4.*
- 2) Question number 5 and 6 are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Use of the map stencils is allowed.*

- Q1)** a) Define 'Political geography'. [2]  
b) Explain the nature of study of political geography. [4]  
c) Discuss the relationship between geography and politics. [4]
- Q2)** a) Which are the various approaches to the study of political geography?[2]  
b) Explain the functional approach in brief. [4]  
c) Explain the centrifugal forces. [4]
- Q3)** a) Differentiate between nation and state. [2]  
b) Discuss the process of state formation. [4]  
c) Explain nationalism. [4]
- Q4)** a) What are the frontiers? [2]  
b) Distinguish between frontiers and boundaries. [4]  
c) Explain the genetic classification of boundaries. [4]
- Q5)** a) Explain the geo-strategic views of mackinder. [4]  
b) Discuss the geographical significance of the Indian ocean. [5]
- Q6)** a) Classify the resources of nations. [4]  
b) Discuss 'unity in diversity' with reference to India. [5]



Total No. of Questions :6]

**P3196**

SEAT No. :

[Total No. of Pages :1

**[5031]-308**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg-322 Geography of Soils**

**(2013 Pattern) (Credit System) (Semester-III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.1 to Q.4*
- 2) *Question 5 and 6 are compulsory.*
- 3) *Draw figures/ maps wherever necessary*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of map stencils is allowed.*

- Q1)** a) Define soil geography. [2]  
b) Elaborate relationship between human Geography and soil [4]  
c) Explain role of vegetation in soil formation. [4]
- Q2)** a) What do you mean by soil moisture? [2]  
b) Explain importance organic matter in soil fertility. [4]  
c) Explain processes of soil profile development. [4]
- Q3)** a) What do you mean by Bulk density? [2]  
b) Explain land suitability classification. [4]  
c) Discuss the importance of secondary clay minerals in soil profile. [4]
- Q4)** a) Define paleosoils? [2]  
b) Explain how deforestation and overgrazing is harmful in soil conservation. [4]  
c) Discuss in brief the role of salinization and acidification in soil degradation. [4]
- Q5)** a) Discuss the physical properties of soils. [4]  
b) Discuss the problems related to soil degradation. [5]
- Q6)** a) Give an account of morphological features of soil horizons. [4]  
b) Explain the factors of soil formation. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 1

**P3197**

**[5031]-309**

**M.A /M.Sc.**

**GEOGRAPHY**

**Gg. 303:Research Methods in Geography  
( 2013 Pattern) (Credit System) (Semester-III)**

*Time : 3 Hours]*

*[Max. Marks : 38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) Explain the significance of UTM projection. [2]  
b) Explain the methods of theodolite survey. [4]  
c) Discuss the importance of survey. [4]
- Q2)** a) What do you mean by topographical map. [2]  
b) Explain data base creations of physical features from toposheets. [4]  
c) Discuss the demarcation of drainage basin. [4]
- Q3)** a) What are the fiducial marks? [2]  
b) Describe tentative scheme of interpretation of satellite image. [4]  
c) Explain the use of aerial photograph. [4]
- Q4)** a) What is non-parametric test? [2]  
b) Discuss the hypothesis testing by chi-square test. [4]  
c) Explain inferential statistics. [4]
- Q5)** a) Discuss the uses of GIS in spatial data analysis. [4]  
b) Explain the importance of interviews in the field work. [5]
- Q6)** a) Explain the importance of references in report writing. [4]  
b) Discuss the significance of survey of literature in report writing. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3198**

**[5031] - 310**

**M.A./M.Sc.**

**Gg - 304 - Social & Cultural Geography  
(2013 Pattern) (Credit System) (Semester - III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from question no 1 to 4.*
- 2) Question no 5 and 6 are compulsory.*
- 3) Figures to the right indicate marks.*
- 4) Use of map stencils and calculators is allowed.*

**Q1) a) Define cultural geography. [2]**

b) Discuss the scope of cultural geography. [4]

c) Explain the nature of social geography. [4]

**Q2) a) Explain the concept of radicalism. [2]**

b) Discuss the base and concept of phenominalism. [4]

c) Discuss the base and concept of structuralism. [4]

**Q3) a) What is 'theoretical space'. [2]**

b) Explain 'public space'. [4]

c) Discuss the models of social assimilation and segregation. [4]

***P.T.O.***

- Q4)** a) Define social -cultural region. [2]  
b) Discuss the changes in cultural regions. [4]  
c) Discuss the role of caste and ethnicity in the formation of cultural regions. [4]
- Q5)** a) Describe the componenets of socio-cultural well being. [4]  
b) Discuss the economic activities and formation of socio-cultural region.[5]
- Q6)** a) Describe the rural -urban contracts in social and economic characteristics. [4]  
b) Discuss the significance of physical intrastructure in rural settlements.[5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3199**

**[5031] - 311**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 306: Geoinformatics - III**

**(2013 Pattern) (Semester - III)**

*Time : 3 Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Answer any two questions from Q.1 to Q.4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*

- Q1)** a) What is global grid operation? [2]  
b) Explain single layer operation in GIS. [4]  
c) Write a note on Digital Elevation Model (DEM). [4]
- Q2)** a) What is image rectification? [2]  
b) Explain the non-systematic errors in digitization. [4]  
c) Write a note on surface analysis in GIS. [4]
- Q3)** a) What do you understand by parallel-piped classifier in Digital Image Processing (DIP)? [2]  
b) Explain geometric distortions and noise. [4]  
c) Explain the mapping functions of georeferencing. [4]
- Q4)** a) What is the importance of training stage in supervised classification?[2]  
b) Explain spatial filtering and spectral rationing techniques of image enhancement. [4]  
c) Write a note on grid analysis in GIS. [4]

***P.T.O.***

- Q5)** a) Give an account of spatial modeling. [4]  
b) Explain producer's accuracy. [5]
- Q6)** a) Give an account of importance of classification in DIP. [4]  
b) Explain multiple layer operations in GIS. [5]



Total No. of Questions : 6]

SEAT No. :

**P3200**

**[5031]-401**

[Total No. of Pages : 2

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg-401: Theoretical and Applied Geography  
(2013 Pattern)(Semester-IV)(Credit System)**

*Time :2½Hours]*

*[Max. Marks : 38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.No.1 to Q.No.4.*
- 2) *Question No.5 and 6 are Compulsory.*
- 3) *Draw figures and map wherever necessary.*
- 4) *Use of Map stencils and calculator is allowed.*
- 5) *Figures to the right side indicate full marks.*

**Q1) a)** What is meant by ‘social Darwinism’? **[2]**

b) Discuss contribution of ptolemy to the field of map making. **[4]**

c) Elucidate the imprtance of Marco polo explorations. **[4]**

**Q2) a)** What is meant by ‘stop and go determinism’? **[2]**

b) Explain the dichotomy in physical versus human geography. **[4]**

c) Explian the nature of regional geography. **[4]**

**Q3) a)** Define cartography. **[2]**

b) Write a note on paradigms in geography. **[4]**

c) Describe in brief the types of models used in geographical studies. **[4]**

**Q4) a)** Define hypothesis. **[2]**

b) Write a brief account of recent trends in geography. **[4]**

c) Discuss the significance of field work in the geographical studies. **[4]**

**P.T.O.**

- Q5)** a) Discuss the nature and importance of applied geography. [4]  
b) Explain the geographical techniques used in the study of any one natural hazard. [5]
- Q6)** a) Describe the technique and importance of scenic evaluation. [4]  
b) Explain any one technique used in sustainable urban planning. [5]



Total No. of Questions : 6]

SEAT No. :

**P3201**

**[5031]-402**

[Total No. of Pages : 1

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg. 402:Principles of Remote Sensing and GIS  
( 2013 Pattern) (Credit System) (Semester-IV)**

*Time : 2½ Hours]*

*[Max. Marks : 38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.1 to Q.4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) Define Remote sensing. [2]  
b) Describe the process of remote sensing. [4]  
c) Explain the electromagnetic spectrum. [4]
- Q2)** a) What is spectral region? [2]  
b) Explain the interaction of the EMR with the atmosphere. [4]  
c) Explain the types of sensing platforms. [4]
- Q3)** a) What do you mean by geostationary satellite? [2]  
b) Describe the characteristics of 'SPOT'. [4]  
c) Explain the features of 'INSAT'. [4]
- Q4)** a) Define GIS. [2]  
b) Describe the 'raster' data model. [4]  
c) Discuss the 'vector' based spatial data analysis. [4]
- Q5)** a) Describe the along- track scanning. [4]  
b) Explain the concept of spatial resolution. [5]
- Q6)** a) Discuss the elements of image interpretation. [4]  
b) Give the applications of integrated RS and GIS data. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3202**

**[5031]-403**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-411: Geostatistics**

**(2013 Pattern) (Semester - II) (Credit System)**

*Time :2½ Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) Attempt any two questions from Q.1 to Q. 4.*
- 2) Question 5 and 6 are compulsory.*
- 3) Draw figures wherever necessary.*
- 4) Figures to the right indicate full marks.*

- Q1)** a) Define spatial dependence. [2]
- b) Write a note on application of geostatistics to the field of Earth science.[4]
- c) Explain the types of spatial data. [4]
- Q2)** a) What do you mean by Exploratory Spatial Data Analysis (ESDA)? [2]
- b) Explain the characteristics of ESDA. [4]
- c) What are normal probability plots? Give its significance in ESDA. [4]
- Q3)** a) Define spatial correlation. [2]
- b) Write an ote on “Moran’s I” statistic. [4]
- c) Explain the concept of autocorrelation. [4]

**P.T.O.**

- Q4)** a) What is a variogram? [2]
- b) Give definitions and applications of nugget, sill and range in structural analysis. [4]
- c) Give an account of uses of Markov chain analysis in Earth science. [4]
- Q5)** a) Write a note on global interpolation techniques. [4]
- b) Describe the characteristics of kriging. [5]
- Q6)** a) Explain with proper examples the phylogenetic relationships. [4]
- b) Write a note on cluster analysis. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3203**

**[5031]-404**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-420: Regional Planning and Development  
(2013 Pattern) (Semester - IV) (Credit System)**

*Time :2½ Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from question No.1 to Q.No. 4.*
- 2) *Question No. 5 and 6 are compulsory.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) Define regional planning. [2]
- b) Explain the role of geography in regional planning. [4]
- c) Describe the various types of planning. [4]
- Q2)** a) What is a region? [2]
- b) Explain the concept of planning region. [4]
- c) How to measure the regional development? [4]
- Q3)** a) What are the indicators of development. [2]
- b) Write a note on a diagnostic surveys. [4]
- c) Discuss the methodology of regional planning. [4]

**P.T.O.**

- Q4)** a) What do you mean by multilevel planning? [2]
- b) Explain the concept of planning strategies in regional development. [4]
- c) Differentiate between concentration and dispersal in regional development. [4]
- Q5)** a) Write a note on experience of regional planning in India. [4]
- b) Discuss the planning of metropolitan regions. [5]
- Q6)** a) Explain the concept of regionalization. [4]
- b) Discuss the regional policies in India's Five Year Plans. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3204**

**[5031]-405**

**M.A/M.Sc.**

**GEOGRAPHY**

**Gg-421: Geography of Water Resources  
(2013 Pattern) (Semester - IV) (Credit System)**

*Time :2½ Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q. No.1 to Q.No. 4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils is allowed.*

- Q1)** a) What do you mean by percolation and runoff? [2]
- b) Show various components of hydrologic cycle with the help of suitable diagram. [4]
- c) Give the distribution of world's available water in the form of ice. [4]
- Q2)** a) What do you mean by water deficit? [2]
- b) Discuss the methods of estimation of municipal and domestic uses of water. [4]
- c) Describe the methods of distribution of weat to farms. [4]
- Q3)** a) Enlist the various industrial uses of water? [2]
- b) Explain how to treat water against pollution? [4]
- c) Discuss the imbalance between municipal demand and use of water. [4]

**P.T.O.**

- Q4)** a) What is watershed? [2]
- b) Discuss the international water disputes with examples. [4]
- c) Discuss the Caveri river water dispute. [4]
- Q5)** a) Explain afforestation and channel improvement as measures of water management. [4]
- b) Discuss Brahmaputra river dispute. [5]
- Q6)** a) Explain the process of evaporation and evapotranspiration. [4]
- b) Discuss 'soil-water-crop relationship'. [5]

*EEE*

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3205**

**[5031] - 406**

**M.A. / M.Sc.**

**GEOGRAPHY**

**Gg - 422 : Biogeography**

**(2013 Pattern) (Credit System) (Semester - IV)**

*Time : 2½ Hours]*

*[Max. Marks :38*

**Instructions:**

- 1) *Attempt any two questions from Q No 1 to Q No. 4.*
- 2) *Questions No 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculators is allowed.*

- Q1)** a) Define biogeography. [2]  
b) Explain basic processes in biogeography. [4]  
c) Discuss the history of biogeography. [4]
- Q2)** a) What do you mean by floral kingdom? [2]  
b) Discuss the biodiversity pattern. [4]  
c) Describe major zoogeographical provinces in the world. [4]
- Q3)** a) What is paleomagnetism? [2]  
b) Discuss the variety and problems of island habitats. [4]  
c) Give a detailed account of evolution of life on earth. [4]
- Q4)** a) Define ecosystem. [2]  
b) Explain the ancient pattern on distribution of plants and animals. [4]  
c) Discuss tundra biomes with respect to species richness and regional climate. [4]

**P.T.O.**

- Q5)** a) Discuss changing patterns of continents. [4]  
b) Describe biomass of tropical broad leaf evergreen forests [5]
- Q6)** a) Critically examine the factors of physical limitation of life. [4]  
b) Describe the nature and scope of Biogeography. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3206**

**[5031] - 407**

**M.A. / M.Sc.**

**GEOGRAPHY**

**Gg - 423: Oceanography**

**(2013 Pattern) (Credit System) (Semester - IV)**

*Time : 2½ Hours]*

*[Max. Marks :38*

**Instructions:**

- 1) *Attempt any two questions from Q.1 to Q.4.*
- 2) *Question 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicates full marks.*
- 5) *Use of map stencils is allowed.*

- Q1)** a) What do you mean by spring tide? [2]  
b) Discuss modern trends in study of Oceanography. [4]  
c) Explain the concept sea floor spreading. [4]
- Q2)** a) What do you mean by ideal sea waves? [2]  
b) Explain the distribution of sediment deposits. [4]  
c) Elaborate the dynamic theory of tides? [4]
- Q3)** a) What are Internal Waves? [2]  
b) Describe the ocean currents of the Pacific ocean. [4]  
c) Explain the composition of sea salts. [4]
- Q4)** a) Name the oceanic trenches in the Pacific ocean. [2]  
b) Explain the foundation of modern oceanography. [4]  
c) Explain the processes along convergent plate boundaries. [4]

**P.T.O.**

- Q5)** a) Elaborate the carbonate cycle. [4]  
b) Explain the Equilibrium Theory of Tides. [5]
- Q6)** a) Explain the process of formation of coral reefs. [4]  
b) Discuss the nature and distribution of lithogenous sediments. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

**P3207**

**[5031] - 408**

**M.A. / M.Sc.**

**GEOGRAPHY**

**Gg - 424 : Natural and ManMade Hazards  
(2013 Pattern) (Semester - IV) (Credit System)**

*Time : 2½ Hours]*

*[Max. Marks :38*

**Instructions:**

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question number 5 and 6 are compulsory.*
- 3) *Figures to the righth indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) Define manmade hazards. [2]  
b) Explain the causes of thunderstorms. [4]  
c) Describe the causes and effects of boil storms. [4]
- Q2)** a) What do you mean by disaster mitigation? [2]  
b) Discuss the causes of erosion. [4]  
c) Explain the effects of erosion. [4]
- Q3)** a) What do you mean by disaster? [2]  
b) Explain the effects of release of toxic elements in the soil. [4]  
c) Explain the causes and effects of flash floods. [4]
- Q4)** a) What is rehabilitation? [2]  
b) Explain the causes of drought. [4]  
c) Discuss the effects of drought [4]

**P.T.O.**

- Q5)** a) Describe the types of natural hazards. [4]  
b) Explain the hydrologic cycle. [5]
- Q6)** a) Explain the influence of large river projects on environment with reference to Tehri Dam. [4]  
b) Explain the causes of earthquakes. [5]



Total No. of Questions :5]

SEAT No. :

[Total No. of Pages :2

**P3208**

**[5031] - 409**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 441 : Principles of Regional Planning and Project Work  
(2013 Pattern) (Semester - IV)**

*Time : 2½ Hours]*

*[Max. Marks :25*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q 1 to Q3.*
- 2) *Attempt any one questions from question 4 & 5.*
- 3) *Draw figures and maps wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of map stencils and calculators is allowed.*

- Q1)** a) Explain the concept of regionalization. [2]  
b) Describe the effects of regional disparities. [4]  
c) Discuss the application of the market principles by Christaller. [4]
- Q2)** a) Define the term e Threshold. [2]  
b) Suggest the remedies for disparities. [4]  
c) Discuss the application of 'Growth Pole Theory in India'. [4]
- Q3)** a) Explain the importance of regional geography. [2]  
b) What is regional approach. [4]  
c) Explain the need of regional planning. [4]

***P.T.O.***

- Q4)** a) Describe the  $K_4$  principle. [2]  
b) Explain Myrdal's theory in brief. [3]
- Q5)** a) Discuss the application of the Central place Theory in India. [2]  
b) Explain the principles of regional geography. [3]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :2

**P3209**

**[5031]-410**

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 404 : Geography of Food Security in India  
(2013 Pattern) (Semester - IV) (Credit System)**

*Time : 2½Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.No.1 to Q.No.4.*
- 2) *Questions No.5 and 6 are compulsory.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) Explain the term food security. [2]  
b) Explain the importance of availability of food. [4]  
c) Describe the production of food crops in India. [4]
- Q2)** a) Define agricultural productivity. [2]  
b) Explain the economic difficulties in access to food. [4]  
c) Evaluate food security conditions at state level in India. [4]
- Q3)** a) What is food stability? [2]  
b) Examine the demerits of India's Food Security Bill 2013. [4]  
c) Explain the significance of food security in India. [4]
- Q4)** a) Name the socio- economic aspects of food security. [2]  
b) Give the distribution of cash crops in India. [4]  
c) Discuss the availability of food for the masses. [4]

**P.T.O.**

**Q5)** a) Examine the role of newspapers in spreading knowledge about food security in India. [4]

b) “Social injustice exists in India.” Discuss. [5]

**Q6)** a) Explain the study of spatio-temporal aspects of food security by maps.[4]

b) Give the distribution of any four crops in India. [5]



Total No. of Questions : 6]

SEAT No. :

**P3210**

**[5031] - 411**

[Total No. of Pages :1

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg-405 : Geography of Health**

**(2013 Pattern) (Credit System) (Semester - IV)**

*Time : 2½ Hours]*

*[Max. Marks :38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.No.1 to 4.*
- 2) *Question No.5 and 6 are Compulsory.*
- 3) *Draw figures/Maps Wherever necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) Define Geography of Health. [2]  
b) Explain the development of geography of health. [4]  
c) Discuss the various geographical factors affecting human health. [4]
- Q2)** a) What is ecology? [2]  
b) Discuss the demand and supply with reference to health care. [4]  
c) Corelate social practices with diseases. [4]
- Q3)** a) What is occupational disease? [2]  
b) Explain various genetic diseases. [4]  
c) Write a note on non-communicable diseases. [4]
- Q4)** a) What do you mean by diffusion of a disease? [2]  
b) Discuss the deficiency disorders and malnutrition. [4]  
c) Discuss the health problem of the tribals. [4]
- Q5)** a) Discuss the occupational health hazards. [4]  
b) Explain the impact of enviromental pollution on health in urban areas. [5]
- Q6)** a) Give the WHO classification of diseases. [4]  
b) Discuss the planning of health care centres and health services in India. [5]

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Total No. of Questions : 6]

SEAT No. :

**P3211**

**[5031]-412**

[Total No. of Pages : 1

**M.A./M.Sc.**

**GEOGRAPHY**

**Gg - 407 : Regional Geography of SAARC Countries  
(2013 Pattern) (Semester - IV) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks : 38*

*Instructions to the candidates:*

- 1) *Attempt any two questions from Q.1 to Q.4.*
- 2) *Questions 5 and 6 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils is allowed.*

- Q1)** a) Name the major rivers originating in the Western Ghats. [2]  
b) Explain demographic aspects of Pakistan. [4]  
c) Give salient features of SAARC organization. [4]
- Q2)** a) Give general location of Nepal. [2]  
b) Explain economic aspects of India. [4]  
c) Write a note on vegetation of Afghanistan. [4]
- Q3)** a) Enlist the major rivers in Bhutan. [2]  
b) Describe the culture of Sri Lanka. [4]  
c) Write a note on 'Agriculture of Bangladesh'. [4]
- Q4)** a) Give the types of climate in Nepal. [2]  
b) Describe the economy of Maldives. [4]  
c) Explain the importance of SAARC countries. [4]
- Q5)** a) Write a note on drainage system in Nepal. [4]  
b) Explain the vegetation of Bangladesh. [5]
- Q6)** a) Explain the economic aspects of Pakistan. [4]  
b) Write a note on 'cultural aspects of India'. [5]

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