

Total No. of Questions : 8]

SEAT No. :

[Total No. of Pages :2

P1636

[5228]-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 No. 1 to 6.*
- 2) *Question No. 7 and 8 are compulsory.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) What is catastrophism? [2]
b) Explain the concept of time scale. [4]
c) Describe the scope of Geomorphology. [4]
- Q2)** a) What is fault? [2]
b) Write the views of Airy and Pratt. [4]
c) Give an account of sea-floor spreading. [4]
- Q3)** a) Define the term peneplanation. [2]
b) Describe the theory of plate tectonics. [4]
c) Explain the process of mass movement. [4]
- Q4)** a) Write a note on chemical weathering. [2]
b) Explain the displacement of plate Boundaries. [4]
c) Write a note on erosional landforms produced by the river. [4]
- Q5)** a) What is fjord? [2]
b) Write a note on gravity anomalies. [4]
c) Write a note on different types of glaciers. [4]

P.T.O.

- Q6)** a) What is 'Erosion'? [2]
b) Discuss the mechanism of erosion and landforms produced by wind in desert. [4]
c) Explain any two depositional landforms produced by rivers. [4]
- Q7)** a) Explain various landforms produced by water in arid areas. [5]
b) Write a note on mechanism of erosional landforms by sea waves. [5]
- Q8)** a) Explain the Davisian cycle of Erosion. [5]
b) Give an account of different elements of slope profile. [5]



Total No. of Questions : 8]

SEAT No. :

[Total No. of Pages : 2

P1637

[5228]-102

M.A./M.Sc.

GEOGRAPHY

**Gg-102 : Principles of Climatology
(2013 Pattern) (Semester-I) (Credit System)**

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *Attempt any three questions from Q. 1 to Q. 6.*
- 2) *Questions No. 7 and 8 are compulsory.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) What is tropical climatology? [2]
b) Explain the terms weather and climate and describe their elements in brief. [4]
c) Describe the vertical structure of atmosphere. [4]
- Q2)** a) What do you mean by composition of atmosphere? [2]
b) Explain the homosphere and heterosphere. [4]
c) Discuss the factors affecting variations in insolation. [4]
- Q3)** a) What is electromagnetic spectrum? [2]
b) Discuss the various effects of atmosphere on insolation. [4]
c) Explain the seasonal variations in insolation. [4]
- Q4)** a) Differentiate between heat and temperature. [2]
b) Discuss how altitude and latitude affect the horizontal distribution of temperature. [4]
c) Explain the radiational and air drainage inversion of temperature. [4]

P.T.O.

- Q5)** a) What do you mean by adiabatic lapse rate? [2]
b) Explain the dry and wet adiabatic lapse rates. [4]
c) Explain the conditional instability. [4]
- Q6)** a) What is an air mass? [2]
b) Discuss the types and characteristics of fronts. [4]
c) Explain any one method of weather forecasting. [4]
- Q7)** a) Discuss the factors affecting air pressure. [5]
b) Explain the planetary winds. [5]
- Q8)** a) Describe the hydrologic cycle. [5]
b) Explain the processes of evaporation and condensation. [5]



Total No. of Questions :8]

SEAT No. :

[Total No. of Pages : 2

P1638

[5228] - 103

M.A/M.Sc.

GEOGRAPHY

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

Time : 3 Hours]

[Max. Marks :50

Instructions to the candidates:

- 1) *Attempt any three questions from Q.No.1 to Q.6.*
- 2) *Question No. 7 and 8 are compulsory.*
- 3) *Draw figures / maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) Define economic geography. [2]
b) Explain the nature of study of economic geography. [4]
c) Describe the various types of hypothesis. [4]
- Q2)** a) What is Hypothesis? [2]
b) Discuss the importance of labour and capital in different economic activities. [4]
c) Discuss the problems of international trade. [4]
- Q3)** a) What do you mean by agglomeration? [2]
b) Explain the aspects of regional disparity. [4]
c) Give an account of Ricardo's classical theory. [4]
- Q4)** a) State the principle of Myrdal's model. [2]
b) Explain emerging trends in economic geography. [4]
c) Explain Myrdal's model in brief with suitable examples. [4]

P.T.O.

- Q5)** a) Define privatization. [2]
b) Explain the concept of spatial variation in demand. [4]
c) Describe the salient features of tribal economy. [4]
- Q6)** a) State the basic principles of Green Revolution. [2]
b) Explain the significance of human resources in economic development. [4]
c) Evaluate Von-Thunen's model. [4]
- Q7)** a) Discuss the factors influencing international trade. [5]
b) Give an account of economic development in post-independence India. [5]
- Q8)** a) Explain the impact of globalization on regional development. [5]
b) Explain Weber's model with suitable examples. [5]



Total No. of Questions : 8]

SEAT No. :

P1639

[5228]-104

[Total No. of Pages : 2

M.A./M.Sc.

GEOGRAPHY

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

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Attempt any three questions from question No.1 to 6.*
- 2) Question 7 and 8 are compulsory.*
- 3) Draw figures maps/ wherever necessary.*
- 4) Figures to the right indicate full marks.*

Q1) a) Define settlement Geography. **[2]**

b) Explain the changing nature of study of population Geography. **[4]**

c) Describe the social factors influencing distribution of settlements. **[4]**

Q2) a) Describe the evolution of settlement Geography. **[2]**

b) Mention the patterns of settlement. **[4]**

c) Describe Man - Environment relationship with reference to the change in shelter pattern. **[4]**

Q3) a) What is nucleation of settlements? **[2]**

b) Describe the social factors influencing the dispersion of settlements. **[4]**

c) Explain the concept of rank - size rule. **[4]**

P.T.O.

- Q4)** a) What is centrality? [2]
b) Explain the concept of 'Hierarchy'. [4]
c) Describe Christaller's central place theory. [4]
- Q5)** a) Explain the concept of urbanization. [2]
b) Describe the social factors influencing distribution of population. [4]
c) Describe the impact of industrialization on urbanization. [4]
- Q6)** a) What is 'Nodality'? [2]
b) Describe Ricardo's theory of population. [4]
c) Explain level of education of population as a resource. [4]
- Q7)** a) Explain Thomas Malthus theory and its application. [5]
b) Describe the physical factors influencing population distribution. [5]
- Q8)** a) Describe the Demographic Transition model. [5]
b) Explain the concept 'Population as a resource' [5]



Total No. of Questions : 6]

SEAT No. :

P1640

[5228]-201

[Total No. of Pages : 2

M.A./M.Sc.

GEOGRAPHY

**Gg - 201 : Quantitative Techniques in Geography
(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) *Figures to the right side indicate full marks.*
- 4) *Use of statistical tables and calculator is allowed.*

Q1) a) What do you mean by spatial and temporal data? **[2]**

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

classes	0-5	5-10	10-15	15-20	20-25	25-30	30-35
f	12	14	16	19	17	15	13

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

Q2) a) Write any two characteristics of normal probability curve. **[2]**

b) The average annual rainfall of a district is 567mm and standard deviation is 127mm. Assuming that the rainfall is normally distributed, what is the probability of rainfall to be: **[4]**

- i) Between 400 and 500mm.
- ii) Less than 150mm.

c) During the last 1000 years a station had experienced 15 earthquakes. Using an appropriate probability distribution find the probability that in the next 100 years the station will be struck by **[4]**

- i) At least 10 earthquakes.
- ii) At most 5 earthquakes.

Q3) a) Explain the concept of explained variance in bivariate analysis. **[2]**

b) Obtain a simple regression equation for the given data. **[4]**

X	42	40	39	38	35	32	25	20
Y	30	38	55	70	72	73	76	77

c) Calculate the Pearson product moment correlation coefficient (r) for the data given in Q3b. **[4]**

P.T.O.

Q4) a) Define the term level of significance (rejection level). [2]

b) Formulate the hypothesis and apply 't' test for the given data. [4]

Sample A	11	10	8	5	3	2	1
Sample B	2	3	7	10	11	14	16

c) From the result obtained in Q. 4b. test the hypothesis at 5% and 1% level of significance and interpret the same. [4]

Q5) a) Following table gives the yield of the crops (kg) for four different regions. Test the hypothesis at 0.01 level of significance that samples do not differ among themselves. Apply 'F' test. [5]

Region →	Plain	Mountain	Delta	Irrigated land
Yield of Index	2	8	3	4
	4	2	5	5
	3	3	9	5
	2	3	6	6
	4	4	6	2

b) What are population and sample statistics. [4]

Q6) a) Calculate 5 years moving average for the discharge (Q) in m³/s of a river. [5]

Plot the data and interpret the results.

Year	1997	1998	1999	2000	2001	2002	2003
Q	6.36	5.74	6.87	6.82	6.65	6.52	5.6

Year	2004	2005	2006	2007	2008	2009	2010	2011
Q	6.39	6.4	6.36	6.9	5.82	5.91	7.52	9.14

b) Write a note on trends and periodicity in time series. [4]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :1

P1641

[5228]-202

M.A./M.Sc.

GEOGRAPHY

**Gg-210 : Coastal Geomorphology
(2013 Pattern) (Semester - II)**

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.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) What is spatial scale in coastal geomorphology? [2]
b) Write a short note on “tides and coastal landforms”. [4]
c) What are shore currents? Explain how different types of currents are produced. [4]
- Q2)** a) What are flood and ebb currents? [2]
b) What are storm waves and standing waves? [4]
c) Write a note on fossil beach ridge. [4]
- Q3)** a) What is wave diffraction? [2]
b) Write a note on sea cliffs and caves. [4]
c) Explain the estuarine hydrodynamics. [4]
- Q4)** a) Define coastal sediments. [2]
b) Write a note on corals and coral reefs. [4]
c) Write a note on morphodynamics of deltas. [4]
- Q5)** a) Explain the mechanism of sea level changes. [4]
b) What are clastic and biogenetic sediments? Explain their sources in coastal environment. [5]
- Q6)** a) Describe the equilibrium theory of tides. [4]
b) Discuss the causes of salt water intrusion and subsidence of coastal aquifers. [5]

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :1

P1642

[5228]-203

M.A./M.Sc

GEOGRAPHY

Gg - 211 : Synoptic Climatology

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

Time : 2½ 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 is allowed.*

- Q1)** a) What do you mean by meteorological code? [2]
b) Explain the structure of tropical cyclone. [4]
c) Write a note on western disturbances. [4]
- Q2)** a) What is the analytical approach to the study of synoptic climatology?[2]
b) Describe the process of formation of hurricanes. [4]
c) Explain the observing system of weather data by India meteorological services. [4]
- Q3)** a) What do you mean by 'Occluded front'? [2]
b) Explain the formation of easterly waves. [4]
c) Discuss the short range forecasting. [4]
- Q4)** a) What do you mean by 'Rossby waves'? [2]
b) Explain the types of precipitation. [4]
c) Discuss the airmasses of Asia. [4]
- Q5)** a) Give the impact of severe weather on life. [4]
b) Explain the benefits of weather forecasting in disaster prevention. [5]
- Q6)** a) Explain the synoptic method of weather forecasting. [4]
b) Give the benefits of weather forecasting in modeling of distribution of pollutants. [5]

Total No. of Questions : 6]

SEAT No. :

P1643

[5228]-204

[Total No. of Pages :1

M.A./M.Sc

GEOGRAPHY

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

Time : 2½ 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 / maps wherever necessary.*
- 4) *Use of map stencils is allowed.*
- 5) *Figures to the right indicate full marks.*

- Q1)** a) What is the commodity approach to the study of agricultural geography?[2]
b) Give the importance of the study of agricultural geography. [4]
c) Explain the significance of agriculture in the less developed regions. [4]
- Q2)** a) What is shifting cultivation? [2]
b) Discuss the influence of technological factors on agriculture. [4]
c) Explain the influence of climate on agriculture. [4]
- Q3)** a) What is famine? [2]
b) Explain the influence of marketing and transport on agriculture. [4]
c) Give the characteristics of intensive subsistence farming. [4]
- Q4)** a) Enlist the types of agriculture. [2]
b) Discuss the agricultural problems in arid regions. [4]
c) Explain Kendall's method of calculating agricultural efficiency. [4]
- Q5)** a) Describe the crop - combination method of Thomas. [4]
b) Explain the role of irrigation in semi - arid regions. [5]
- Q6)** a) Discuss the land classification in India. [4]
b) Discuss the land use survey. [5]

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :1

P1644

[5228]-205

M.A./M.Sc

GEOGRAPHY

Gg - 213 : Population Geography

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

Time : 2.½Hours]

[Max. Marks : 38

Instructions to the candidates:

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

- Q1)** a) Enlist the disciplines related to the study of population geography. [2]
b) Discuss the regional approach to the study of - population geography.[4]
c) Describe the factors affecting population growth. [4]
- Q2)** a) What is population density? [2]
b) Discuss the physical factors affecting the distribution of world population.[4]
c) Describe the economic factors affecting the distribution of world population. [4]
- Q3)** a) What is foetal mortality? [2]
b) Discuss lee's theory of migration. [4]
c) Explain the laws of migration. [4]
- Q4)** a) Enlist the various compositions of population. [2]
b) Explain the religion and language composition of population. [4]
c) Discuss the population policies with special reference to India. [4]
- Q5)** a) Discuss the factors related to mortality levels in developing countries.[4]
b) Describe the recent mortality levels in the world. [5]
- Q6)** a) Discuss the importance of population projection in agricultural development. [4]
b) Critically examine malthus's theory of population. [5]

Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

P1645

[5228] - 206

M.A./M.Sc.

GEOGRAPHY

**Gg-220: Fluvial Geomorphology
(2013 Pattern) (Semester - II)**

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/maps wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils and calculator is allowed.*

- Q1)** a) What is the difference between surface and subsurface wash? [2]
b) Define fluvial geomorphology and elaborate its scope. [4]
c) Discuss the drainage basin as a geomorphic unit in fluvial geomorphology. [4]
- Q2)** a) What do you mean by tractive force? [2]
b) Explain downstream hydraulic geometry of a channel. [4]
c) Explain channel morphology with respect to channel type. [4]
- Q3)** a) What do you mean by abrasion and attrition? [2]
b) Explain the different types of features associated with alluvial fans. [4]
c) Describe the various landforms associated with fluvial deposition. [4]

P.T.O.

- Q4)** a) State the types of fluvial erosion. [2]
b) Define river metamorphosis. Elaborate quaternary fluvial system. [4]
c) Explain long - term adjustment of a river channel. [4]
- Q5)** a) Explain the Horton's law of drainage composition. [4]
b) Distinguish between laminar and turbulent flow of a river. [5]
- Q6)** a) Discuss the concept of shear stress and stream power. [4]
b) Explain the cross section morphology of a river. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

P1646

[5228] - 207

M.A./M.Sc.

GEOGRAPHY

Gg-221: Monsoon Climatology

(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) *Q. 5 & Q. 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) Explain the thermal concept of origin of Monsoons. [4]
- c) Describe the aerological concept of Monsoons. [4]
- Q2)** a) What do you mean by Summer Monsoon? [2]
- b) Discuss the 'Classical Theory of Monsoons'. [4]
- c) Explain the winter monsoon in India. [4]
- Q3)** a) What do you mean by 'compressibility of the atmosphere'? [2]
- b) Explain the differential heating of land and sea as the driving mechanism of the monsoons. [4]
- c) Discuss the features of the Summer Monsoon. [4]

P.T.O.

- Q4)** a) What is onset of monsoon? [2]
b) Explain the monsoon depression as the main rain bearing systems. [4]
c) Explain the Tibetan Anticyclones as a semi - permanent system. [4]
- Q5)** a) Discuss the long period trends in Indian rainfall. [4]
b) Explain the ENSO. [5]
- Q6)** a) Discuss the 'walker circulation and the monsoons'. [4]
b) Explain the 'multiple power regression model' of the Monsoons. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

P1647

[5228] - 208

M.A./M.Sc.

GEOGRAPHY

Gg-222: Industrial Geography

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

Time : 2½ Hours]

[Max. Marks :38

Instructions to the candidates:

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

- Q1)** a) Define Industrial region. [2]
- b) Describe the nature of software industries. [4]
- c) Explain the characteristics of Industrial region. [4]
- Q2)** a) State four western European industrial regions. [2]
- b) Critically explain Weber's model. [4]
- c) Explain the scope of Industrial geography. [4]
- Q3)** a) What do you mean by centralization of industries? [2]
- b) Explain the impact of manufacturing units on regional economies. [4]
- c) Describe the role of political factors on industrial location. [4]

P.T.O.

- Q4)** a) What is industrial linkage? [2]
b) Describe the distribution of Iron & steel industries in India. [4]
c) Explain the nature of industrial geography. [4]
- Q5)** a) Explain the impact of socio - cultural factors on cotton textile industries in India. [4]
b) Critically explain Greenhuts model. [5]
- Q6)** a) Give an account of software industries in India. [4]
b) Explain the problems of Japanese industrial regions. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

P1648

[5228] - 209

M.A./M.Sc.

GEOGRAPHY

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

Time : 2½ Hours]

[Max. Marks :38

Instructions to the candidates:

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

- Q1)** a) What is hierarchy of settlements? [2]
- b) Describe the evolution of settlements. [4]
- c) Describe the geographical aspects of settlements reflected in place names. [4]
- Q2)** a) What is intensity of land use? [2]
- b) Discuss the functions of trading centres. [4]
- c) Discuss the factors affecting labour cost. [4]
- Q3)** a) What is nucleation of settlements? [2]
- b) Explain the method of measuring degree of dispersion. [4]
- c) Discuss rural development planning with reference to transport. [4]

P.T.O.

- Q4)** a) What do you mean by modern high rise house type? [2]
b) Explain the social and cultural factors affecting rural house types. [4]
c) Discuss the rural commuting patterns. [4]
- Q5)** a) Describe the Von Thunen theory of land use. [4]
b) Explain the demographic characteristics of rural settlements. [5]
- Q6)** a) Describe house types in Maharashtra. [4]
b) Discuss the centrality and hierarchy of rural service centers. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

P1649

[5228] - 210

M.A./M.Sc.

GEOGRAPHY

**Gg-204: Geography of Tourism
(2013 Pattern) (Credit System)**

Time : 2½ 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 is allowed.*

- Q1)** a) What is tourist? [2]
- b) Explain the history of tourism in India. [4]
- c) Explain the importance of pilgrimage places in India. [4]
- Q2)** a) What is adventure tourism? [2]
- b) Describe the cultural tourism. [4]
- c) Explain the role of travel agencies in the promotion of tourism. [4]
- Q3)** a) Define tourist attractions. [2]
- b) Explain the positive impacts of tourism business. [4]
- c) Explain the role of Foreign capital in tourism development. [4]

P.T.O.

- Q4)** a) Name any Four religious places in India. [2]
b) Explain the structure of coastal tourism. [4]
c) Describe globalisation & tourism in India. [4]
- Q5)** a) Describe the current trends of tourism in India. [4]
b) Explain differences between national and international tourism. [5]
- Q6)** a) Explain various environmental laws related to tourism. [4]
b) Explain the various influencing factors of tourism in brief. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1650

[5228]-211

M.A./M.Sc.

GEOGRAPHY

**Gg-205 : Geography of Disaster Management
(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) *Questions No. 5 and 6 are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) Define hazard? [2]
b) Explain the causes of tsunamy. [4]
c) Explain the types of cyclones. [4]
- Q2)** a) What do you mean by disaster? [2]
b) Explain stampedes and how stampedes can be avoided. [4]
c) “The entire Himalayan region is vulnerable to earthquakes”. Explain. [4]
- Q3)** a) What do you mean by mitigation? [2]
b) Explain the phases of disaster cycle. [4]
c) Discuss the diffrencial impact with reference to location. [4]
- Q4)** a) What is food poisoning? [2]
b) Write a note on global trends of climate change. [4]
c) Explain in brief the economic impacts of disasters. [4]

P.T.O.

- Q5)** a) Explain the causes and effects of volcanic eruption. [4]
b) What is the role of civilians in natural disasters. [5]
- Q6)** a) Explain the use of ICST in different disasters. [4]
b) Discuss the role of homoguards in calamities. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

P1651

[5228] - 212

M.A. / M.Sc.

GEOGRAPHY

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

Time : 2½ Hours]

[Max. Marks :38

Instructions to the candidates:

- 1) *Attempt any two questions from question number 1 to 4.*
- 2) *Question 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 secondary sources of energy? [2]
b) Explain the types of energy material based resources. [4]
c) Describe present geo-politics of energy in the world. [4]
- Q2)** a) Define non-renewable energy resources. [2]
b) Give an account of energy consumption in metropolitan cities. [4]
c) Discuss the temporal pattern of energy consumption in agricultural sector in India. [4]
- Q3)** a) What is an energy crisis? [2]
b) Discuss the modern methods of energy conservation in India. [4]
c) Explain the impact of oil consumption on environment. [4]
- Q4)** a) What do you mean by conservation of energy. [2]
b) Explain the primary energy resources. [4]
c) Describe the global scenario of energy requirement. [4]

P.T.O.

- Q5)** a) Explain the geo-political crisis about consumption of oil in the world. [4]
b) Discuss the various energy related agreements of India with other countries. [5]

- Q6)** a) Give an account of energy resource management for sustainable development. [4]
b) Discuss the impact of consumption of coal on environment. [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages : 2

P1652

[5228] - 213

M.A./M.Sc.

GEOGRAPHY

Gg-208: Geoinformatics - I

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

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) *Figures to the right indicate full marks.*

- Q1)** a) What is the potential of GIS? [2]
b) Explain the spatial information theory. [4]
c) Describe the tasks of GIS. [4]
- Q2)** a) Which are the elements of GIS. [2]
b) Write in detail about the applications of GIS. [4]
c) Discuss the implementation models. [4]
- Q3)** a) What are the functional relationships in GIS? [2]
b) Examine the advantages and disadvantages of vector data models. [4]
c) Describe the types of DBMS. [4]
- Q4)** a) Define attribute query. [2]
b) Explain the operations from Set Theory. [4]
c) Write a note on raster data compaction techniques. [4]

P.T.O.

- Q5)** a) Explain the local and focal grid operations. [4]
b) Write an account on the History of GIS. [5]
- Q6)** a) Explain topology building with suitable diagrams. [4]
b) Write a note on detection and correction of errors during the process of digitizing. [5]

EEE

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :2

P1653

[5228] - 214

M.A./M.Sc.

GEOGRAPHY

Gg - 209 : Geoinformatics - II

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

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) Figures to the right indicate full marks.*

- Q1)** a) What is a GPS? [2]
- b) Explain the significance of GPS coordinates as one of the major data source in geoinformatics. [4]
- c) Define remote sensing and write a brief note on the international status of remote sensing. [4]
- Q2)** a) Define the term atmospheric window. [2]
- b) Explain the relationship of spectral bands with atmospheric window. [4]
- c) Write a note on spectral signature. [4]
- Q3)** a) What is side overlap and forward overlap? [2]
- b) Explain spherical aberrations and chromatic aberrations. [4]
- c) Write a note on space segment and user segment of GPS. [4]

P.T.O.

- Q4)** a) Give spatial resolution of Landsat TM and ETM. [2]
b) Explain the fundamental concepts of GPS. [4]
c) Describe the spatial and temporal characteristics of IRS WiFs data. [4]
- Q5)** a) What is meant by platform in remote sensing? Explain any two types of remote sensing platforms. [4]
b) Explain the types of photographic products. [5]
- Q6)** a) Explain the elements of interpretation of an aerial photograph. [4]
b) Explain with suitable examples BSQ and BIL data formats. [5]



Total No. of Questions : 6]

SEAT No. :

P1654

[5228]-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 : 2½ 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 is allowed.*

- Q1)** a) Name the neighboring countries of India. [2]
b) Describe the west flowing rivers of Maharashtra. [4]
c) Describe the geological structure of the Himalayas. [4]
- Q2)** a) What is meant by river system? [2]
b) Describe the physiography of the coastal lowlands of Maharashtra. [4]
c) Explain the formation of islands of India. [4]
- Q3)** a) Give the meaning of soil. [2]
b) Explain conservational activities of soil in India. [4]
c) Describe type - based distribution of forests in Maharashtra. [4]
- Q4)** a) What is a power resource? [2]
b) Describe the production of hydroelectricity in India. [4]
c) Describe the production and distribution of rice in Maharashtra. [4]
- Q5)** a) Correlate the location of chemical and fertilizer industries and economic development in India. [4]
b) Explain the various problems related to industrial development in Maharashtra. [5]
- Q6)** a) Describe the major forest types in India. [4]
b) Explain the distribution of population in Maharashtra. [5]

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1655

[5228]-302

M.A./M.Sc.

GEOGRAPHY

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

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) *Figures to the right indicate full marks.*
- 4) *Use of map stencils is allowed.*

Q1) a) Define tropical environment. [2]

b) Explain the peculiarities of tropical climate. [4]

c) Describe the classification of tropics. [4]

Q2) a) What is meant by duricrust? [2]

b) Give the distribution of indurated laterite in the world. [4]

c) Describe the slope and valley forms in the tropical landscape. [4]

Q3) a) What are tropical soils? [2]

b) Explain the types of mass movements in the tropics. [4]

c) Explain the process of landform development on lateritic terrain. [4]

Q4) a) What is clay mineral? [2]

b) Describe the process of soil formation in the tropics. [4]

c) Explain the characteristics of the tropical coast. [4]

P.T.O.

- Q5)** a) Discuss the climatic and environmental factors in the tropics. [4]
b) Explain the rate of tectonic and climatic changes in the tropics. [5]
- Q6)** a) Give an account of domed and boulder inselbergs in the tropics. [4]
b) Explain the hillslope and pediments in the tropics. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1656

[5228]-303

M.A./M.Sc.

GEOGRAPHY

Gg-311 : Applied Climatology

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

Time : 2½ Hours]

[Max. Marks : 38

Instructions to the candidates:

- 1) *Attempt any two questions from Q. 1 to Q. 4.*
- 2) *Questions No. 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 do you mean by climate Impact Assessment? [2]
b) Discuss the impact of climate on livestock. [4]
c) Explain the various forms of precipitation. [4]
- Q2)** a) Name the instruments used to measure and record temperature. [2]
b) Discuss the impact of micro-meteorological changes and behaviour of pests and diseases on agriculture. [4]
c) Explain the impact of evaporation on soil plant relationship. [4]
- Q3)** a) Define Remote Sensing. [2]
b) Explain the nature of urban climates. [4]
c) Discuss the traction ability. [4]
- Q4)** a) What is urban heat island? [2]
b) Discuss the impact of climate on clothing. [4]
c) Describe the various climatic variables affecting construction operations. [4]

P.T.O.

- Q5)** a) Explain the effect of climate on air transport. [4]
b) Discuss the urban air pollution problems. [5]
- Q6)** a) Explain the role of remote sensing in canopy transpiration and crop stress detection. [4]
b) Discuss the external causes of climate change. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1657

[5228]-304

M.A./M.Sc.

GEOGRAPHY

**Gg-312 : Trade and Transport Geography
(2013 Pattern) (Semester-III) (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 No. 5 and 6 are compulsory.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of map stencils is allowed.*

- Q1)** a) What do you mean by traffic flow? [2]
b) Explain the functional approach in Trade and Transport Geography. [4]
c) What are the economical factors associated with the growth of road transport? [4]
- Q2)** a) Define the landways. [2]
b) Explain the factors associated with the growth of waterways. [4]
c) Explain the characteristics of different modes of transportation. [4]
- Q3)** a) What do mean by trade? [2]
b) Write a short note on Gravity model. [4]
c) Explain the significance of transportation in mega cities. [4]
- Q4)** a) What do you mean by hierarchies? [2]
b) Explain Neo-classical theory of trade. [4]
c) "Railway transportation is the backbone of regional economy". Explain. [4]

P.T.O.

- Q5)** a) Explain the various treaties of trade at international levels. [4]
b) Explain the alternative transportation in mega cities. [5]
- Q6)** a) Explain the political factors related to the location of seaports and airports. [4]
b) Discuss the problems of international trade. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1658

[5228]-305

M.A./M.Sc.

GEOGRAPHY

**Gg-313 : Urban Geography
(2013 Pattern) (Semester-III) (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 No. 5 and 6 are compulsory.*
- 3) *Draw figures/Map wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils is allowed.*

- Q1)** a) What is urbanisation? [2]
b) Take a brief review of world urbanisation. [4]
c) How is the CBD demarcated? [4]
- Q2)** a) Enlist the various urban functions. [2]
b) Discuss the functional classification of towns by H.J. Nelson. [4]
c) Discuss the growth of urban population. [4]
- Q3)** a) What is megalopolis? [2]
b) Explain the concept of satellite towns. [4]
c) Discuss the various criteria used to demarcate the city region. [4]
- Q4)** a) What do you mean by a central place? [2]
b) Co-rrrelate the concept of hierarchy of urban settlements with central place concept. [4]
c) How the price of land determines the vertical and horizontal growth of cities? [4]

P.T.O.

- Q5)** a) Discuss the rank-size relationship. [4]
b) Explain the elements of city plan. [5]
- Q6)** a) Discuss the significance of the study of urban geography. [4]
b) Explain the various causes that lead to urban environmental pollution. [5]



Total No. of Questions : 6]

SEAT No. :

P1659

[5228]-306

[Total No. of Pages : 2

M.A/M.Sc.

GEOGRAPHY

Gg. 320 - Multivariate Statistics

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

Time : 2½ 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 statistical tables and calculator is allowed.*

- Q1)** a) What is a J matrix and an identity matrix? [2]
b) Prove the commutative theorem for multiplication. [4]
c) Find $A * B$ [4]

$$A = \begin{pmatrix} 65 & 675 & 876 \\ 87 & 987 & 905 \\ 543 & 654 & 957 \end{pmatrix} \quad B = \begin{pmatrix} 78 & 0 & 71 \\ 97 & 8 & 79 \\ 54 & 4 & 39 \end{pmatrix}$$

- Q2)** a) What do you mean by data reduction in multivariate statistics? [2]
b) Using the data given below find the A_0, A_1 and A_2 determinants. [4]

X	2	5	8	13	16	19	22	25	29
Y	9	13	21	27	25	26	17	13	9

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

- Q3)** a) The following table records the observed values for X1, X2 and Y variables. Find the means and variances for X1, X2 and Y [2]

Y	0.7	0.8	0.9	1.3	1.6
X1	2	7	10	12	14
X2	3.4	3.6	3.9	4.2	4.8

- 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]

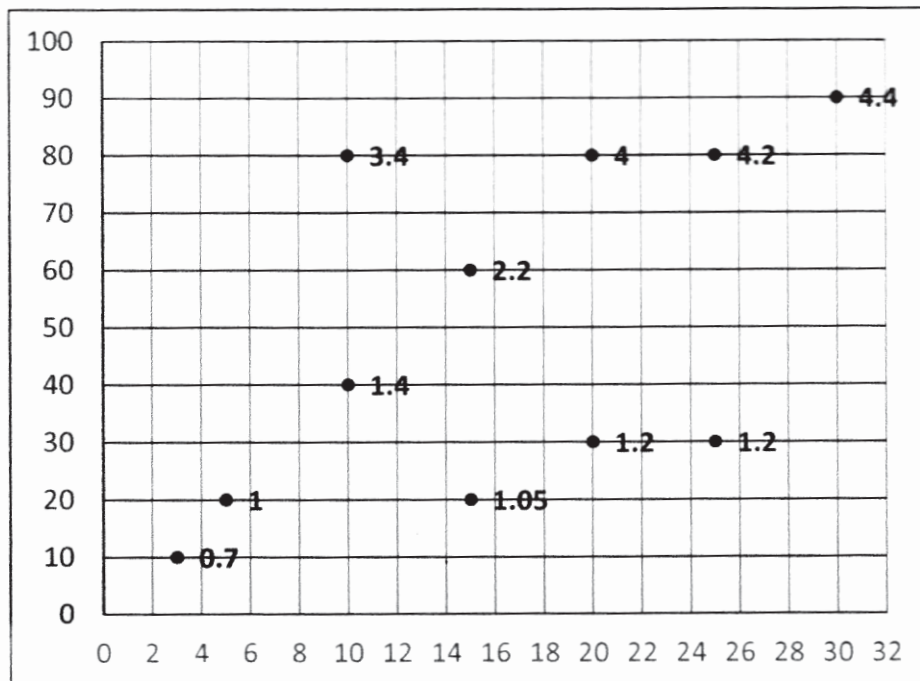
P.T.O.

- Q4) a)** Define the term varimax rotation [2]
b) Using the following matrix obtain the first factor loadings matrix. [4]

	X1	X2	X3	X4	X5
X1	1	0.558	0.842	0.65	0.48
X2		1	0.53	0.585	0.65
X3			1	0.886	0.772
X4				1	0.634
X5					1

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

- Q5) a)** Following graph depicts the depths in meters at different locations. Prepare an appropriate table and obtain a trend surface equation for the same. [5]



- b)** Obtain the explained variance, level of significance at 0.05 level for the result obtained from Q5 a 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]

SEAT No. :

P1660

[Total No. of Pages : 2

[5228] - 307

M.A./M.Sc.

GEOGRAPHY

Gg-321: Political Geography

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

Time : 2½ Hours]

[Max. Marks :38

Instructions to the candidates:

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

- Q1)** a) What is political geography? [2]
b) Write a note on scope of Political Geography. [4]
c) Discuss the history of Political Geography. [4]
- Q2)** a) What do you mean by territoriality? [2]
b) Explain the types of approaches to the study of Political Geography. [4]
c) Write a note on Whittlesey's landscape approach. [4]
- Q3)** a) Define frontiers. [2]
b) Explain the morphological classification of boundaries. [4]
c) Distinguish between frontiers and boundaries. [4]
- Q4)** a) Define resources. [2]
b) Discuss the global geostrategic views of spykman and Cohen. [4]
c) Discuss how resource management built power of a nation. [4]

P.T.O.

- Q5)** a) Explain the theory of 'unified field'. [4]
b) Discuss the need and achievements of SAARC organisation. [5]
- Q6)** a) Discuss the interstate water dispute in India. [4]
b) Give an account of emergence of new states in India. [5]

EEE

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1661

[5228]-308

M.A./M.Sc.

GEOGRAPHY

Gg: 322 : Geography of Soils

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

Time : 2½ 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 is allowed.*

Q1) a) Define the term 'Soil'. **[2]**

b) Explain the relationship between soils and agriculture. **[4]**

c) Discuss the role of topography in soil formation. **[4]**

Q2) a) What do you mean by soil temperature? **[2]**

b) Discuss the morphological features of soil horizons. **[4]**

c) Explain the importance of acidity and alkalinity in soil fertility. **[4]**

Q3) a) What are soil colloids? **[2]**

b) Explain land capability classification. **[4]**

c) Discuss the relationship in chemical weathering and soils. **[4]**

Q4) a) What do you mean by soil colour? **[2]**

b) Explain the development of soil profile with reference to deposition of iron and aluminium. **[4]**

c) Explain how soil texture is an important physical property of soil. **[4]**

P.T.O.

- Q5)** a) Discuss the biochemical properties of soil. [4]
b) Explain how in correct methods of farming are harmful in soil conservation. [5]
- Q6)** a) Describe the problems related to soil degradation. [4]
b) Give an account of secondary clay minerals and their distribution in the profile. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1662

[5228]-309

M.A./M.Sc.

GEOGRAPHY

**Gg - 303 : RESEARCH METHOD IN GEOGRAPHY
(2013 Pattern) (Credit System) (Semester - III)**

Time : 2½Hours]

[Max. Marks : 38

Instructions to the candidates:

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

Q1) a) What is plane survey? [2]

b) Explain the methods of Theodolite survey. [4]

c) Discuss the importance of terrain cross profiles in geomorphic studies. [4]

Q2) a) What is indexing of SOI toposheets? [2]

b) Explain the importance of SOI toposheets in database creation of cultural features. [4]

c) Discuss the methods of relative height from the aerial photograph. [4]

Q3) a) What is flight line? [2]

b) Give an account of database creation from satellite images. [4]

c) Write a note on nature of geographical data. [4]

P.T.O.

- Q4)** a) What is GIS? [2]
b) Explain with suitable examples descriptive statistics. [4]
c) Give the importance of questionnaires and interviews in geographical research. [4]
- Q5)** a) Give the importance of field mapping in geography. [4]
b) Discuss the technique of writing 'research methods applied in research'. [5]
- Q6)** a) Explain the difference between 'survey of literature' and 'references and bibliography'. [4]
b) Explain the importance of UTM projection. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1663

[5228]-310

M.A./M.Sc.

GEOGRAPHY

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

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/Map wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of map stencils is allowed.*

- Q1)** a) What is the subject matter of social geography? [2]
b) Explain the scope of social geography. [4]
c) Discuss the trends and development in social geography. [4]
- Q2)** a) Explain the concept of positivism. [2]
b) Explain the base and concept of idealism. [4]
c) Explain the base and concept of humanism. [4]
- Q3)** a) What is personal space? [2]
b) Describe the theoretical space. [4]
c) Discuss the redistribution of resources for social justice. [4]
- Q4)** a) Define a social region. [2]
b) Describe the transformation of social regions. [4]
c) Describe cultural regions in India. [4]

P.T.O.

Q5) a) Describe the patterns of social well being in India. **[4]**

b) Explain the methods of measuring well being of society. **[5]**

Q6) a) Describe the significance of physical infrastructure in rural settlements. **[4]**

b) Describe the rural-urban contrasts in socio-economic characteristics in rural settlements. **[5]**



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1664

[5228]-311

M.A./M.Sc.

GEOGRAPHY

Gg - 306 : Geoinformatics - III

(2013 Pattern) (Semester - III) (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) *Figures to the right indicate full marks.*

Q1) a) What do you understand by simple grid operation. **[2]**

b) Explain in brief the function of simple grid operation. **[4]**

c) Write a note on DEM. **[4]**

Q2) a) Mention any two analytical tasks in GIS. **[2]**

b) Explain with suitable examples single layer operations carried out in spatial analysis. **[4]**

c) Discuss in detail point pattern analysis. **[4]**

Q3) a) What is image distortion? **[2]**

b) Explain geometric distortion and noise on the image data. **[4]**

c) Explain the resampling technique used in digital image processing. **[4]**

P.T.O.

- Q4)** a) What is spectral ratioing? [2]
- b) Explain in detail the process of spectral ratioing. [4]
- c) Write a note on parallel-piped classifier. [4]
-
- Q5)** a) List various techniques of image enhancement and give the main characteristics of these techniques. [4]
- b) Write a note on density slicing and spatial filtering. [5]
-
- Q6)** a) Discuss the significance of confusion matrix in digital image processing. [4]
- b) Write a note on significance of training stage in supervised classification. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1665

[5228]-401

M.A./M.Sc.

GEOGRAPHY

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

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) *Use of map stencils and calculator is allowed.*
- 5) *Figures to the right indicate full marks.*

Q1) a) What do you meant by ‘Determinism’? **[2]**

b) Discuss the contribution of Roman scholars in the development of geographical thought. **[4]**

c) Give a brief account of contributions of Vasco-Da-Gama in the development of geographical thoughts. **[4]**

Q2) a) What do you mean by ‘Paradigms’? **[2]**

b) Examine the concept of dualism with reference to systematic versus regional geography. **[4]**

c) What do you mean by the concept of dualism in Determinism. **[4]**

Q3) a) What is ‘Applied geography’? **[2]**

b) Explain the various types of laws in the study of geography. **[4]**

c) Describe system approaches in Geography. **[4]**

P.T.O.

- Q4)** a) Define the term 'Remote sensing'. [2]
b) Bring out the salient features of quantitative revolution in geography. [4]
c) Write an explanatory note on applications of computer in geography. [4]
- Q5)** a) Discuss the application of geographical concepts in urban planning. [4]
b) Describe the various types of models used in geographical studies. [5]
- Q6)** a) Discuss the application of geographical concepts and techniques in environmental management. [4]
b) Describe the process studies and experimental studies in geography. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1666

[5228]-402

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 questions no. 1 to 4.*
- 2) *Questions no. 5 and 6 are compulsory.*
- 3) *Figures to the right indicates full marks.*
- 4) *Use of map stencils is allowed.*

Q1) a) What is EMS? [2]

b) State the principles of remote sensing. [4]

c) Explain the concept of black body radiation. [4]

Q2) a) What is sun synchronous orbital pattern? [2]

b) Describe the characteristics of LISS. [4]

c) Explain the techniques of visual interpretation. [4]

Q3) a) What is vector data model? [2]

b) Discuss the data structure and formats used in GIS. [4]

c) Explain attribute query in spatial data analysis. [4]

Q4) a) What are the components of GIS? [2]

b) Differentiate between raster and vector data model. [4]

c) Write a note on buffer analysis. [4]

P.T.O.

- Q5)** a) What is buffer analysis? [4]
b) Discuss the concept of topology creation in GIS. [5]
- Q6)** a) What do you mean by Whiskbroom scanners and Pushbroom Scanners? [4]
b) Write in brief the information of SPOT Satellite. [5]



Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

P1667

[5228]-403

M.A./M.Sc.

GEOGRAPHY

Gg-411 : Geostatistics

(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 wherever necessary.*
- 4) *Figures to the right indicate full marks.*

Q1) a) Define the term Correlogram. **[2]**

b) Define the term spatial data and write its characteristics. **[4]**

c) Explain any two types of spatial data used in geostatistics. **[4]**

Q2) a) Define the term univariate descriptors. **[2]**

b) 'ESDA is the first and essential step in geostatistical analysis'. Explain. **[4]**

c) Explain with suitable examples the terms heterogeneity and dependency. **[4]**

Q3) a) What do you mean by autocorrelation? **[2]**

b) Write a brief note on the concepts of autocovariance and semivariance. **[4]**

c) Write a note on significance of Scatter plots and linear regression in ESDA. **[4]**

P.T.O.

- Q4)** a) Define directional Correlograms. [2]
b) Explain the concept of semivariogram. [4]
c) Explain the components of Variogram. [4]
- Q5)** a) Explain with examples the concept of unrooted trees in cluster analysis. [4]
b) What are Voronoi plots? Give its applications to the field of Earth Sciences. [5]
- Q6)** a) Explain with examples any one method employed in cluster analysis. [4]
b) Write a note on application of Markov chain analysis to the field of earth sciences. [5]



Total No. of Questions : 6]

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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 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) What is need of regional planning? [2]
b) Discuss the role of geography in regional planning. [4]
c) Describe the types of planning. [4]
- Q2)** a) Define the term region. [2]
b) Explain the types of region. [4]
c) Evaluate the measurement of regional development. [4]
- Q3)** a) What do you mean by diagnostic surveys? [2]
b) Describe the methodology of regional planning. [4]
c) Explain the concept of ‘ Concentration versus dispersal’ in regional development. [4]
- Q4)** a) Define concept of planning strategies. [2]
b) “Regional survey and regional planning are associated with each other,” Discuss. [4]
c) Discuss the case studies from developed countries with reference to concentration versus dispersal. [4]
- Q5)** a) Explain the regional policies in five year plans of India. [4]
b) Give an account of regional planning in India. [5]
- Q6)** a) What are the steps for planning for metro politan regions. [4]
b) Discuss the river basin as a planning unit. [5]

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages :1

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M.A./M.Sc.

GEOGRAPHY

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

Time : 2.½ Hours]

[Max. Marks : 38

Instructions to the candidates:

- 1) *Attempt any two questions from 1 to 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 water logging. [2]
b) Describe the hydrological cycle in detail with help of a suitable diagram. [4]
c) Explain the role of afforestation in soil and water conservation. [4]
- Q2)** a) Define flood management. [2]
b) Discuss the issue of municipal water use and water treatment. [4]
c) Describe water supply and utilisation methods in industrial sector. [4]
- Q3)** a) What is conservation of resources. [2]
b) Outline the measures to be taken for conservation of water resources. [4]
c) Describe the moisture surplus and deficit regions with reference to India. [4]
- Q4)** a) What do you mean by scarcity? [2]
b) Explain soil - water - crop relationship and need of water conservation for agricultural sector. [4]
c) Describe the importance of water resources. [4]
- Q5)** a) Write an account of flood management practices. [4]
b) Discuss the irrigation projects with reference to water balance and drought. [5]
- Q6)** a) Discuss different agreements related to river water allocation between India and neighbouring countries. [4]
b) Discuss drawbacks of proposed Ganga- Cauveri Garland project. [5]

Total No. of Questions :6]

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[Total No. of Pages :2

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M.A./M.Sc.

GEOGRAPHY

Gg-422: Biogeography

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

Time : 2½ 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 “Evolution”. [2]
- b) Explain the relevance of biogeography. [4]
- c) Write a brief note on the history of biogeography. [4]
- Q2)** a) Explain the concept “Endemism”. [2]
- b) What are the bases and types of Zoogeographical Provinces? [4]
- c) Explain about disjunction distribution pattern. [4]
- Q3)** a) What is meant by environmental gradient? [2]
- b) Explain the speciation biogeographic process. [4]
- c) Discuss importance of the habitat and microhabitat in the distribution pattern. [4]

- Q4)** a) Explain the concept of 'Isolation'. [2]
b) How island acts as an area of isolation? [4]
c) What are evidences of Paleomagnetism? [4]
- Q5)** a) Describe the Taiga Biome with reference to regional climate and vegetation structures. [4]
b) "Species richness in an ecosystem influenced by physical limitation". Explain. [5]
- Q6)** a) Describe the temperate broadleaf deciduous forest biome with reference to species richness and geographic affinities. [4]
b) What are the stages of ecological succession? [5]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

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M.A./M.Sc.

GEOGRAPHY

Gg-423: Oceanography

(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 4.*
- 2) Question No. 5 and 6 are compulsory.*
- 3) Draw figures/maps whenever necessary.*
- 4) Figures to the right indicate full marks.*

- Q1)** a) What do you mean by constructive margin. [2]
- b) Discuss the scope of oceanography. [4]
- c) What are the modern trends in oceanography. [4]
- Q2)** a) What do you mean by continental rise? [2]
- b) Explain the theory of plate tectonics. [4]
- c) Explain the concept of sea floor spreading. [4]
- Q3)** a) What are the atolls? [2]
- b) What are the components of continental margins? [4]
- c) Explain the role of volcanoes in the formation of oceanic land forms.[4]

P.T.O.

- Q4)** a) Define salinity. [2]
b) Explain the factors affecting viscosity and surface tension of ocean waters. [4]
c) How the salts have originated in ocean waves? [4]
- Q5)** a) Write a note on various types of waves. [4]
b) Explain the dynamic theory of tides in brief. [5]
- Q6)** a) Discuss the various types of oceanic circulations. [4]
b) Explain how the ages of oceanic sediments are determined. [5]



Total No. of Questions :6]

SEAT No. :

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[5228] - 408

M.A./M.Sc.

GEOGRAPHY

Gg-424: Natural and Man Made Hazards

(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 4.*
- 2) Question number 5 and 6 are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Draw figures/maps wherever necessary.*
- 5) Use of map stenciles and calculator is allowed.*

- Q1)** a) Write the definition of natural hazard.
- b) Explain the natural disaster.
- c) Explain the probability of occurrence of cyclone.

[10]

- Q2)** a) Mention the types of drought.
- b) Explain the effects of drought.
- c) Describe the lurid/terribly of drought.

[10]

- Q3)** a) Mention the geomorphic hazard.
- b) Explain man made hazard.
- c) Describe chemical hazard in detail.

[10]

P.T.O.

- Q4)** a) Write the definition of irrigation.
b) Explain the nuclear hazard.
c) Explain the effects of population growth on biodiversity.

[10]

- Q5)** a) Explain the effects of over exploitation of resources.
b) Describe the hazard of dust and hail storms.

[9]

- Q6)** a) Explain the structural and non - structural measures in disaster management.
b) Describe the effects of global warming and explain their remedies.

[9]



Total No. of Questions : 5]

SEAT No. :

[Total No. of Pages : 1

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[5228]-409

M.A./M.Sc.

GEOGRAPHY

**Gg-441 : Principles of Regional Geography & Project Work
(2013 Pattern) (Semester-IV) (Credit System)**

Time : 1½ Hour]

[Max. Marks : 25

Instructions to the candidates:

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

- Q1)** a) Define regional Geography. [2]
b) Explain the importance of regional geography. [4]
c) Discuss the 'cummulative causation theory of myrdal. [4]
- Q2)** a) What is nodal region? [2]
b) What are the remedies of regional disparities? [4]
c) Explain the principles of regional Geography. [4]
- Q3)** a) What is k_3 principle of central place theory? [2]
b) Explain the reasons of disparities in regional development. [4]
c) Discuss the application of central place Theory in India. [4]
- Q4)** a) Explain the concept of regional geography. [2]
b) What are the effects of regional disparities? [3]
- Q5)** a) What is need of regional planning? [2]
b) Discuss the application of Growth pole theory. [3]



Total No. of Questions :6]

SEAT No. :

[Total No. of Pages :2

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M.A. / M.Sc.

GEOGRAPHY

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

Time : 2½ Hours]

[Max. Marks :38

Instructions to the candidates:

- 1) Attempt any two questions from question No. 1 to 4.*
- 2) Question number 5 and 6 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 food security? [2]
b) Explain the importance of availability of food. [4]
c) Evolution the term malnutrition. [4]
- Q2)** a) Explain the term agricultural productivity. [2]
b) Which physical factors affect food security? [4]
c) What are the land rights in India. [4]
- Q3)** a) What do you mean by food sovereignty? [2]
b) Give the distribution of food crops in India. [4]
c) Discuss the availability of food for the masses. [4]

P.T.O.

- Q4)** a) Define food justice. [2]
b) Evaluate the importance of food security in India. [4]
c) Examine the merits of India's Food Security Bill. [4]
- Q5)** a) Explain the impact of socio-economic factors in food security. [4]
b) Describe the benefits and determinants to food Security Bill. [5]
- Q6)** a) Examine the role of magazines and news papers in spreading knowledge about food security in India. [4]
b) Explain the study of spatio-temporal aspects of food security by maps. [5]



Total No. of Questions :6]

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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.1 to Q.4.*
- 2) *Question 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 Geography of Health. [2]

b) Explain the approaches to the study of Geography of Health. [4]

c) Explain the geographical factors affecting human health and diseases.[4]

Q2) a) What is an occupational disease? [2]

b) Describe communicable diseases. [4]

c) Discuss the problems of malnutrition and deficiency disorders. [4]

Q3) a) What is ecology? [2]

b) Explain the causes of diseases. [4]

c) Discuss the health problems of tribal people. [4]

Q4) a) What is the relation between gender and health? [2]

b) Explain the genetic diseases. [4]

c) Write a note on non- communicable diseases. [4]

P.T.O.

- Q5)** a) Explain the impact of pollution on health in the urban areas. [4]
b) Discuss the planning of health care centers in India. [5]
- Q6)** a) Examine the WHO classification of diseases. [4]
b) Explain the correlation between social practices and diseases. [5]

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Total No. of Questions : 8]

SEAT No. :

[Total No. of Pages :2

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M.A./M.Sc.

GEOGRAPHY

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

Time : 2½ 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 is allowed.*

- Q1)** a) Mention the names of SAARC countries. [2]
b) Describe the major river systems in Pakistan. [4]
c) Write a note on climate of Bangladesh. [4]
- Q2)** a) Mention the types of vegetation in Nepal. [2]
b) Write a note on economic activities of Shrilanka. [4]
c) Discuss the cultural aspects of Maldives. [4]
- Q3)** a) Write a short note on drainage systems of Nepal. [2]
b) Give an account of agriculture in India. [4]
c) Write a brief note on cultural aspects of Bangladesh. [4]

P.T.O.

- Q4)** a) Name the physiographic divisions of India. [2]
b) Discuss the agricultural activities of Afghanistan. [4]
c) Discuss the tourism as a major economic activity of Maldives. [4]
- Q5)** a) Discuss the strategic location of Bhutan. [4]
b) Write a note importance of SAARC countries. [5]
- Q6)** a) Discuss the history of SAARC organisation. [4]
b) Write a brief note on demographic aspects of Shrilanka. [5]

