

Total No. of Questions : 7]

SEAT No. :

P483

[Total No. of Pages : 3

[4233] - 307

M.Sc.

GEOGRAPHY

Gg-320 : Multivariate Statistics

(2008 Pattern) (Sem. - III) (Special paper - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) Attempt any four questions.
- 2) Use of calculators and statistical tables is allowed.
- 3) Figures to the right indicate full marks.

- Q1) a) Explain in brief the objectives of Multivariate analysis. [6]
b) Find $A * B$ and B^{-1} [6]

$$A = \begin{pmatrix} 212 & 315 & 620 \\ 325 & 200 & 165 \\ 432 & 125 & 205 \end{pmatrix} \quad B = \begin{pmatrix} 10 & 8 & 7 \\ 6 & 5 & 4 \\ 3 & 2 & 11 \end{pmatrix}$$

- c) Find the unknowns in the following simultaneous equations using the matrix solution. [8]
- $$\begin{aligned} 2a - b + c &= 11 \\ a + 8b - 4c &= 25 \\ 10a + 6b - 8c &= 30. \end{aligned}$$

- Q2) a) Following table gives you hourly temperature recorded on a bright summer day from morning 8.00 am to evening 7.00 pm. Fit an appropriate bivariate equation and interpret the results. [15]

Hours X	1	2	3	4	5	6	7	8	9	10	11	12
Temp (°C)Y	25	27	27.5	29	30	32	33.5	35	34.1	33.2	32.6	31

- b) Giving suitable examples from geomorphology explain the curvilinear bivariate relationships. [5]

P.T.O.

- Q3) a)** Using the following data compute multiple regression equation, obtain the explained variance and test the equation for its level of significance at 0.05, 0.01 and 0.001 level. Interpret the results. **[15]**

Means : $\bar{Y} = 69.2727$; $\bar{X}_1 = 2.4364$; $\bar{X}_2 = 1.5636$ $\bar{X}_3 = 0.9$ $n = 11$

Variances : $\text{var} Y = 1396.926$ $\text{var} X_1 = 5.1587$; $\text{var} X_2 = 2.4423$; $\text{var} X_3 = 0.7236$

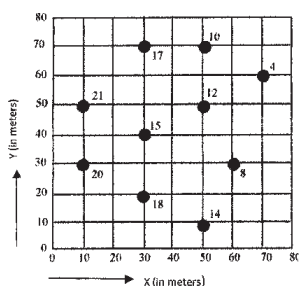
Covariances: $\text{Cov} YX_1 = -76.8918$; $\text{Cov} YX_2 = -52.1809$; $\text{Cov} YX_3 = -25.1182$

$\text{Cov} X_1 X_2 = 3.3677$; $\text{Cov} X_1 X_3 = 1.8236$; $\text{Cov} X_2 X_3 = 1.1600$

Where, Y = Urban Population density : X_1 = Distance from CBD, X_2 = Distance from nearest shopping centre, and X_3 = Distance from the main bus station. All distances are in km.

- b) Describe the need of obtaining the stepwise regression in multivariate situation. **[5]**

- Q4)** Following map depicts the size (in cm) of pebbles at different locations near a river bank. Write the data in tabular form and fit a suitable trend surface equation and interpret the results. **[20]**



- Q5) a)** The following table records the self and inter correlations of some crops. Using the same obtain loadings for first two principal components. Find the amount of explained variance and name the components. **[15]**

Crops	Jowar Rabi	Jowar Kharif	Maize Kharif	Maize Rabi	Ragi Kharif	Small millets Kharif
Jowar Rabi	1	0.57	0.172	-0.58	-0.488	0.481
Jowar Kharif	0.57	1	0.15	-0.94	-0.351	-0.092
Maize Kharif	0.172	0.15	1	-0.068	-0.453	0.026
Maize Rabi	-0.58	-0.94	-0.068	1	0.247	0.136
Ragi Kharif	-0.488	-0.351	-0.453	0.247	1	-0.225
Small millets	0.481	-0.092	0.026	0.136	-0.225	1

b) Explain the significance of communalities in PCA. [5]

Q6) a) Extract first two factors of loadings and calculate Eigen values for the following. Interpret the results. [15]

	X_1	X_2	X_3	X_4	X_5
X_1	1.0000	0.4227	-0.0712	-0.0285	-0.0203
X_2	0.4227	1.0000	0.3376	0.6673	0.6987
X_3	-0.0712	0.3376	1.0000	0.8604	0.6930
X_4	-0.0285	0.6673	0.8604	1.0000	0.9276
X_5	-0.0203	0.6987	0.6930	0.9276	1.0000

X_1 = Unemployment rates (percent of labour force)

X_2 = Literacy rate (%)

X_3 = Population Density

X_4 = Tele density (Telephone per hundred population)

X_5 = Per capita Net State Domestic Product at current Prices
(in '000'Rs.)

b) Discuss in brief the use of factor scores in regionalization. [5]

Q7) Write notes (any two) [20]

a) Types of Matrices.

b) Varimax rotation.

c) Use of TSA in Geomorphology and Climatology.



Total No. of Questions : 7]

SEAT No. :

P462

[Total No. of Pages : 1

[4233] - 101

M.Sc.

GEOGRAPHY

Gg - 101 : Principal of Geomorphology
(2008 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Explain in detail the concept of geomorphic scales in geomorphology.

Q2) Give an account of the theory of Isostasy.

Q3) What is folding? Explain the different types of landforms produced due to folding.

Q4) Explain the mechanics of erosion, transportation and deposition by the work of glaciers.

Q5) Describe the depositional landforms produced by work of waves and tides along the coast.

Q6) What are different facets of slopes? Explain in brief different models of slope evolution.

Q7) Write notes on any two:

- a) Process Geomorphology.
- b) Wegener's continental - drift theory.
- c) Mechanical weathering.



Total No. of Questions : 7]

SEAT No. :

P463

[Total No. of Pages : 1

[4233] - 102

M.Sc.

GEOGRAPHY

Gg - 102 : Principles of Climatology
(2008 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Give an account of the development of Modern Climatology.

Q2) Describe the effects of scattering diffusion, absorption and reflection on the distribution of solar radiation.

Q3) Discuss various factors affecting air pressure.

Q4) What is Jet stream? Explain its effects on the surface weather condition.

Q5) Distinguish between normal lapse rate and adiabatic lapse rate. Explain conditional instability.

Q6) What is an air mass? Explain its classification and modification.

Q7) Write notes on any two:

- a) Chemical composition of the atmosphere.
- b) Inversion of temperature.
- c) Weather forecasting.



Total No. of Questions : 7]

SEAT No. :

P464

[Total No. of Pages : 1

[4233] - 103

M.Sc.

GEOGRAPHY

Gg - 103 : Principles of Economic Geography
(2008 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) What is hypothesis? Explain the types of hypothesis in economic geography.

Q2) Describe the modern economic landscape.

Q3) Discuss the significance of natural resources in economic development.

Q4) Explain the significance of land, labour and capital in production.

Q5) Describe the various measures of economic development.

Q6) Describe the history of economic development in India.

Q7) Write notes on (any two):

- a) Scope of economic geography.
- b) Myrdal's model of economic development.
- c) Problems of international trade.



Total No. of Questions : 7]

SEAT No. :

P465

[Total No. of Pages : 1

[4233] - 104

M.Sc.

GEOGRAPHY

Gg - 104 : Principles of Settlement and Population Geography
(2008 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Give an account of evolution of settlement and population geography.

Q2) Explain the various patterns of settlements.

Q3) Discuss the various factors influencing the dispersion of settlements.

Q4) Critically examine Christaller's Central Place Theory.

Q5) Discuss the economic and social factors influencing population distribution.

Q6) Explain the importance and utility of Demographic Transition Model.

Q7) Write notes on any two:

- a) Physical factors influencing the distribution of settlements.
- b) Industrialization and Urbanization.
- c) Growth and age as aspects of population resource.



Total No. of Questions : 7]

SEAT No. :

P466

[Total No. of Pages : 3

[4233] - 201

M.Sc.

GEOGRAPHY

Gg - 201 : Quantitative Techniques in Geography
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *Use of calculator and statistical table are allowed.*
- 3) *The figures in the right hand side bracket indicate full marks.*

Q1) a) What are the basic types of statistics? **[6]**

- b) Calculate kurtosis for the following data. The table shows size of pebbles in cms of a pot hole in a river channel. **[14]**

Class	1-5	5-10	10-15	15-20	20-25	25-30
f	5	11	20	10	5	4

Q2) a) Explain standard deviation and variance. **[6]**

- b) The probability of success in examination of mathematics is 60%. If 7 students appeared for the examination, find out the probability that;

- i) 4 students would pass
- ii) 2 students would pass
- iii) None of them would pass
- iv) All of them would pass

[14]

P.T.O.

Q3) a) What is Normal Probability Distribution? Write its characteristics. [6]

b) The following table gives decadal death rate of India between 1901 and 1970. Using least - square method obtain best fit equation and plot the scattergram. What was the estimated death rate for the decade 1971 - 1980? [14]

Year	1901- 1910	1911- 1920	1921- 1930	1931- 1940	1941- 1950	1951- 1960	1961- 1970
Death rate	42.6	47.2	36.3	31.2	27.4	22.8	19.0

Q4) a) What is time series analysis? Explain various methods of time series analysis. [6]

b) Calculate the correlation coefficient (r) between age of person in years and low density lipoproteins (LDL) cholesterol in mg/dl. Test the level of significance at 0.05 and interpret the value. [14]

Age	48	36	52	57	35	34	48	68	47	58	60	60	50	65
LDL	190	145	183	154	206	102	129	208	145	128	175	102	166	121

Q5) a) Write a note on Linear Regression Equation. [6]

b) A survey was conducted in a forest and a sample of heights of 100 trees was collected. The mean height of trees is 3.56 m with standard deviation of 0.78 m. Find out standard error estimates of mean and standard deviation at 95% confidence level. [14]

Q6) The table given below represents incidence of three types of malaria in three continents. Apply the Chi-square test to find out whether there is significant difference between the type of malaria and continents. Test the hypothesis at 0.05 level of significance. [20]

	Asia	Africa	South America
Malaria A	31	14	45
Malaria B	2	5	53
Malaria C	53	45	2

Q7) Write notes on **any two**:

[20]

- a) Scales of measurement.
- b) Central limit theorem.
- c) Residuals and explained variance.



Total No. of Questions : 7]

SEAT No. :

P467

[Total No. of Pages : 1

[4233] - 202

M.Sc.

GEOGRAPHY

Gg - 210 : Tropical Geomorphology
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of calculator and statistical table is allowed.*

Q1) Discuss the factors influencing the process of weathering in the tropics.

Q2) Give a detail account of various division of lateritic profile.

Q3) Give an account of processes of erosion and deposition in the tropical environment.

Q4) Give a geographical account of tropical coast.

Q5) Define planation surface and discuss the characteristics of peneplains, pediplain and etchplains.

Q6) Discuss the quaternary changes in the tropical environment.

Q7) Write notes on any two:

- a) Morphogenetic regions.
- b) Duricrust.
- c) Hillslope and pediments.



Total No. of Questions : 7]

SEAT No. :

P468

[Total No. of Pages : 1

[4233] - 203

M.Sc.

GEOGRAPHY

Gg - 211 : Synoptic Climatology
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Give a comparative account of analytical and synoptic approaches in the study of synoptic climatology.

Q2) Explain the life cycle of tropical cyclone with help of diagrams.

Q3) Write an account of profile, formation and decay of hurricanes in detail.

Q4) Define frontogenesis and frontolyses and describe principal zones of frontogenesis.

Q5) Give an account of the classification and formation of clouds in local weather system.

Q6) Explain in detail the formation process of fog.

Q7) Write notes on any two:

- a) Approaches of synoptic climatology.
- b) Synoptic and numerical methods of forecasting.
- c) Importance of forecasting in agriculture.



Total No. of Questions : 7]

SEAT No. :

P469

[Total No. of Pages : 1

[4233] - 204

M.Sc.

GEOGRAPHY

Gg - 212 : Agricultural Geography
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Define agriculture. Explain the nature and scope of agricultural geography.

Q2) Explain the place of agriculture in the world regions.

Q3) Describe the influence of physical and technological factors on agricultural patterns with suitable examples.

Q4) Write an account of intensive subsistence and plantation agriculture.

Q5) Define arid and semi-arid regions and explain various characteristics of agriculture in arid and semi-arid regions.

Q6) Give an account of agricultural regions of India.

Q7) Write notes on Any Two:

- a) Importance of landuse surveys.
- b) Classification of land use in Britain.
- c) Role of irrigation in agriculture.



Total No. of Questions : 7]

SEAT No. :

P470

[Total No. of Pages : 1

[4233] - 205
M.Sc.
GEOGRAPHY
Gg - 213 : Population Geography
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) Attempt any four questions.*
- 2) All questions carry equal marks.*
- 3) Use of map stencils is allowed.*

Q1) Describe the various approaches to the study of population geography.

Q2) Discuss the factors influencing population growth.

Q3) Critically examine the Marx's population theory.

Q4) Describe the factors related with high mortality in the past.

Q5) Give a brief account of population composition.

Q6) Discuss the use of population projection in housing and education planning.

Q7) Write notes on any two:

- a) Fertility variation according to occupational groups.
- b) Lee's theory of migration.
- c) Influence of demographic factors on population distribution.



Total No. of Questions : 7]

SEAT No. :

P471

[Total No. of Pages : 1

[4233] - 206

M.Sc.

GEOGRAPHY

Gg - 214 : Geoinformatics - I
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Describe various elements of GIS and explain hardware and software requirements of GIS.

Q2) Differentiate between geometric and attribute data and explain how data is stored in GIS.

Q3) Discuss the relative advantages and disadvantages of raster and vector data giving suitable examples.

Q4) Give an account of digitization in GIS and explain the significance of editing.

Q5) Discuss various attribute database operations in data analysis in GIS.

Q6) Describe spatial and attribute query analysis in GIS.

Q7) Write notes on **any two**:

- a) Spatial Information Theory.
- b) GIS tasks.
- c) DBMS.



Total No. of Questions : 7]

SEAT No. :

P472

[Total No. of Pages : 1

[4233] - 207

M.Sc.

GEOGRAPHY

Gg - 220 : Fluvial Geomorphology
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Discuss 'The drainage basin as a geomorphic unit'.

Q2) How do you distinguish between uniform flow and non uniform flow? Explain regimes of flow.

Q3) Give an account of 'At-a-station hydraulic geometry'.

Q4) Distinguish between suspended and bed load and discuss modes of sediment transport.

Q5) Differentiate between various channel patterns observed in a river and explain meandering channel.

Q6) Explain different types of features associated with flood plains.

Q7) Write notes on any two:

- a) Glock's model.
- b) Concept of grade.
- c) Quaternary fluvial systems.



Total No. of Questions : 7]

SEAT No. :

P473

[Total No. of Pages : 1

[4233] - 208
M.Sc. (Semester - II)
GEOGRAPHY
Gg - 221 : Monsoon Climatology
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Mention various concepts of origin of monsoon and elaborate any one of them.

Q2) Write a regional account of monsoon of South Asia.

Q3) Describe briefly the Indian monsoon and compare Summer and Winter monsoons.

Q4) Explain various features of summer monsoon with suitable diagrams.

Q5) Write an account of main rainbearing systems regarding Indian sub-continent.

Q6) Bring out the importance of parametric and multiple power regression model in forecasting.

Q7) Write notes on any two:

- a) Definitions of monsoon climatology.
- b) Easterly Jet.
- c) Role of ocean and upper atmosphere in teleconnection.



Total No. of Questions : 7]

SEAT No. :

P474

[Total No. of Pages : 1

[4233] - 209

M.Sc.

GEOGRAPHY

Gg - 222 : Industrial Geography
(Semester - II) (2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Define industrial geography and explain the concepts of manufacturing and regional economics.

Q2) Explain with suitable examples how economic and socio-cultural factors are influencing on the location of industry.

Q3) Give an account of Greenhut's and Israd's model.

Q4) Give a brief account of the distribution and changing patterns of cotton textile industry in the world.

Q5) Define industrial region and explain the problems and prospects of any two industrial regions in Anglo-America.

Q6) Write a detail account of characteristics of industrial regions in India.

Q7) Write notes on Any Two:

- a) Role of software industry in India.
- b) Problems and Prospects of IT industry.
- c) Changing Patterns of Iron and Steel industry in India.



Total No. of Questions : 7]

SEAT No. :

P475

[Total No. of Pages : 1

[4233] - 210

M.Sc.

GEOGRAPHY

Gg - 223 : Geography of Rural Settlements
(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Explain with suitable examples the reflection of historical and cultural aspects in the place names of settlements.

Q2) What is dispersion of settlements? Describe factors influencing dispersion with suitable examples.

Q3) Explain functional analysis of rural service centers and trading centers with suitable examples.

Q4) What is morphogenesis? Explain socio-cultural morphogenesis of rural settlements.

Q5) Describe various patterns of rural settlements in Maharashtra.

Q6) Discuss the land use and transportation are the significant aspects of rural development planning.

Q7) Write notes (any two):

- a) Occupational structure of rural population.
- b) Centrality and Hierarchy.
- c) Building material.



Total No. of Questions : 7]

SEAT No. :

P476

[Total No. of Pages : 1

[4233] - 211
M.Sc. (Semester - II)
GEOGRAPHY
Gg - 224 : Geoinformatics - II
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) Attempt any four questions.*
- 2) All questions carry equal marks.*
- 3) Use of map stencils is allowed.*

Q1) What is remote sensing? Write an account of spectral signatures.

Q2) Discuss the historical development of remote sensing in India.

Q3) Give an account of types of remote sensing. Explain interaction of EMR with respect to atmosphere.

Q4) Discuss geometric characteristics of an aerial photograph and explain the methods of measurement of scale and height on an aerial photograph.

Q5) Describe various types of sensors used in satellite RS.

Q6) What is GPS? Explain their components and GPS signals.

Q7) Write notes on any two:

- a) Types of aerial camera.
- b) Digital products: data formats.
- c) Elements of visual interpretation of aerial photographs sand satellite image.



Total No. of Questions : 7]

SEAT No. :

P477

[Total No. of Pages : 1

[4233] - 301
M.Sc. (Semester - III)
GEOGRAPHY
Gg - 301 : Theoretical and Applied Geography
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Draw figures/map wherever necessary.*
- 4) *Use of map stencils is allowed.*

Q1) Give a brief account of the contributions to geography made by the Arab School of thought.

Q2) Give an account of contributions of Kant and W.M. Davis to geographical studies.

Q3) Critically examine the concept of dualism with special reference to systematic versus regional geography.

Q4) Write a geographical essay on “Changing paradigms in geography”.

Q5) Describe the process studies and experimental studies in geography.

Q6) Explain the application of geographical concepts and techniques in regional and resource management.

Q7) Write notes on any two:

- a) Contribution of Greeks.
- b) Use of models in geography.
- c) Application of Remote Sensing in geography



Total No. of Questions : 7]

SEAT No. :

P478

[Total No. of Pages : 1

[4233] - 302

M.Sc.

GEOGRAPHY

Gg - 310 : Coastal Geomorphology

(Special Paper - I) (2008 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Use of map stencils is allowed.*

Q1) Write an explanatory note on genetic and morphological classification of coast.

Q2) Define the term wave and bring out the characteristics of waves giving their various types.

Q3) Describe fossil beach ridges, beach rocks and abandoned sea cliffs as indicators of former sea level.

Q4) Give an account on Coastal Sediments.

Q5) Discuss with suitable examples morphology and hydrodynamics of estuaries and mudflats.

Q6) Discuss the causes of salt intrusion and subsidence of coastal aquifers.

Q7) Write notes on any two:

- a) Flood and Ebb Currents.
- b) Holocene Transgression.
- c) Beaches and spit.



Total No. of Questions : 7]

SEAT No. :

P479

[Total No. of Pages : 1

[4233] - 303

M.Sc.

GEOGRAPHY

Gg - 311 : Applied Climatology

(2008 Pattern) (Semester - III) (Special Paper - I)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Discuss the development of applied climatology and explain climate impact assessment.

Q2) Describe different forms of precipitation and write a note on different instruments used to measure precipitation.

Q3) Discuss the influence of climate on crops and livestock.

Q4) Explain how remote sensing is useful in monitoring crop condition and crop stress.

Q5) Giving suitable examples explain the effect of climate on industrial and commercial activities.

Q6) 'Land, water and air transport are greatly influenced by climate'. Elaborate.

Q7) Write notes on any two:

- a) Climate and human health.
- b) Reconstruction of past climates.
- c) Urban heat island.



Total No. of Questions : 7]

SEAT No. :

P480

[Total No. of Pages : 1

[4233] - 304

M.Sc. (Semester - III)

GEOGRAPHY

Gg - 312 : Trade and Transport Geography
(Special Paper - I) (2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Explain the significance of transportation in world and regional economies.

Q2) Describe the factors associated with the growth of water transport network.

Q3) Describe the various models of network changes in transport network.

Q4) Give an account of transport and environmental degradation in urban areas.

Q5) Define trade and explain the various types of trade in details.

Q6) Give an account of Neo-classical theory of trade.

Q7) Write notes on any **two**:

- a) Economic factors of seaport.
- b) Hierarchies.
- c) Geographical factors influencing international trade.



Total No. of Questions : 7]

SEAT No. :

P481

[Total No. of Pages : 1

[4233] - 305

M.Sc.

GEOGRAPHY

Gg - 313 : Urban Geography

(Special Paper - I) (2008 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencil is allowed.*

Q1) Describe the nature and scope of urban geography and explain its significance.

Q2) Critically examine the Multiple Nuclei Model of urban morphology.

Q3) How are the towns and Cities Classified? Explain the functional classification of towns by C.D. Harris.

Q4) Describe the characteristics of rural - urban fringe.

Q5) Explain the nature of urban influence.

Q6) Explain the urban transport and environmental problems faced by the towns and cities.

Q7) Write notes on (any two):

- a) Urbanization curve.
- b) Growth of urban population.
- c) New towns.



Total No. of Questions : 7]

SEAT No. :

P482

[Total No. of Pages : 1

[4233] - 306

M.Sc.

GEOGRAPHY

Gg - 314 : Geoinformatics - III

(2008 Pattern) (Semester - III) (Special Paper - I)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencil and calculator is allowed.*

Q1) Explain simple to complex grid operations in spatial analysis.

Q2) Discuss various methods of interpolation and highlight their merits and demerits.

Q3) Describe various sources of distortions in image acquisition and explain in brief the methods of correction of image in DIP.

Q4) What is ISODATA approach in image classification? Explain its significance in unsupervised classification.

Q5) Give an account of Microwave Remote Sensing.

Q6) What is a confusion matrix? Give a comparative account of Producers' accuracy and Users' accuracy in classification.

Q7) Write notes on any **two**:

- a) Multiple layer operations.
- b) Network analysis.
- c) NDVI.



Total No. of Questions : 7]

SEAT No. :

P484

[Total No. of Pages : 1

[4233] - 308

M.Sc.

GEOGRAPHY

Gg - 321 : Political Geography

(Special Paper - II) (2008 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Draw figures/maps wherever necessary.*
- 4) *Use of map stencils is allowed.*

Q1) Define 'Political Geography' and explain its historical development.

Q2) Describe the characteristics of Nation and State with geographical perspective.

Q3) Explain Spykman's Rimland Theory of global geostrategic views.

Q4) Classify the resources and elaborate its impact on national strategy.

Q5) Explain geopolitical significance of Indian Ocean.

Q6) Discuss the interstate water and language disputes in India.

Q7) Write notes on any two:

- a) Geography and politics.
- b) Unified Field Theory.
- c) Frontiers and boundaries.



Total No. of Questions : 7]

SEAT No. :

P485

[Total No. of Pages : 1

[4233] - 309

M.Sc.

GEOGRAPHY

Gg - 322 : Soil Geography

(Special Paper - II) (2008 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencil is allowed.*

Q1) Bring out the significance of studying soils.

Q2) Discuss climate, topography, parent material and time as factors of soil formation.

Q3) Give an account of Physical Properties of soil.

Q4) Write an account of development of soil profile.

Q5) Describe the process of ion exchange in Chemical Weathering of Soil.

Q6) Write an account of soil classification systems.

Q7) Write notes on any two:

- a) Productivity of soils.
- b) Salinization.
- c) Cation and anion exchange.



Total No. of Questions : 7]

SEAT No. :

P486

[Total No. of Pages : 1

[4233] - 401

M.Sc.

GEOGRAPHY

Gg - 401 : Resource Management
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencil is allowed.*

Q1) What are the various models of resource management? Give their comparative advantages in resource management.

Q2) What are the physical resources? How are they sub divided?

Q3) Explain the concept of resource conservation and describe the various methods of soil conservation.

Q4) What do you mean by resource appraisal? Describe the various techniques applied in appraisal of physical resources.

Q5) Give the distribution and developmental policy of forest resources of India.

Q6) Give an account of distribution and developmental policy of water resources of India.

Q7) Write notes on any two:

- a) Management of cultural resources.
- b) Population as a resource.
- c) Sustainable development of resources.



Total No. of Questions : 7]

SEAT No. :

P487

[Total No. of Pages : 1

[4233] - 402

M.Sc. (Semester - IV)

GEOGRAPHY

Gg - 420 : Regional Planning and Development
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencil is allowed.*

Q1) Explain the concept of regional planning and give its scope in detail.

Q2) Give a comparative account of utility of regional, techno-economic and diagnostic surveys for regional planning.

Q3) Describe planning strategies with the help of case studies one each from developed and developing countries.

Q4) Give a historical account of experience of regional planning in India.

Q5) "Planning for metropolitan regions is the need of the hour". Discuss.

Q6) Correlate the regionalisation for planning and multi-level planning in India.

Q7) Write notes on any two:

- a) Types of surveys for regional planning.
- b) Techniques of regional planning.
- c) National Capital Region.



Total No. of Questions : 7]

SEAT No. :

P488

[Total No. of Pages : 1

[4233] - 403

M.Sc.

GEOGRAPHY

Gg - 421 : Geography of Water Resources
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) 'Water is most important and renewable resource' Discuss.

Q2) Explain the terms, evaporation, evapotranspiration, precipitation and runoff and discuss its necessity in the study of hydrological cycle.

Q3) Discuss various water harvesting techniques helps to soil water conservation.

Q4) Give an account of industrial utilization of water.

Q5) Discuss various measures of water managements.

Q6) Discuss the methodology of conservation and panning for the development of water resources.

Q7) Write notes on any **two**:

- a) Cauvery water dispute.
- b) Floods and droughts.
- c) Integrated basin planning.



Total No. of Questions : 7]

SEAT No. :

P489

[Total No. of Pages : 1

[4233] - 404

M.Sc.

GEOGRAPHY

Gg - 422 : Biogeography

(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *All questions carry equal marks.*
- 2) *Attempt any four questions.*
- 3) *Use of map stencils is allowed.*

Q1) Discuss the nature and scope of biogeography.

Q2) Explain the concepts of dispersal and colonization as basic processes in biogeography.

Q3) 'Island is an area of isolation and problem of access'. Discuss.

Q4) How soil and microclimates are physical limitation of life? Discuss.

Q5) Give an account of the patterns in distribution of plants and animals of Gondwana and Laurasia.

Q6) Describe the features of tropical savanna as a major biome of the world.

Q7) Write notes on any two:

- a) Eco - geographic trends.
- b) Habitats and micro habitat.
- c) Hazards of island life.



Total No. of Questions : 7]

SEAT No. :

P490

[Total No. of Pages : 1

[4233] - 405

M.Sc.

GEOGRAPHY

Gg - 423 : Geography and Ecosystem
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Discuss spatial and temporal dimensions of ecosystems.

Q2) Describe abiotic components of an ecosystem.

Q3) Give an account of major terrestrial ecosystems of the world.

Q4) Write an elaborative note on 'Earths resources and population'.

Q5) Give an account of man made ecosystems.

Q6) Discuss 'man induced environment and ecological changes'.

Q7) Write notes on **any two**:

- a) Pyramid of energy.
- b) Ecology and tropical farming system.
- c) The Stockholm conference.



Total No. of Questions : 7]

SEAT No. :

P491

[Total No. of Pages : 1

[4233] - 406

M.Sc.

GEOGRAPHY

**Gg - 424 : Research Methodology
(2008 Pattern) (Semester - IV)**

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of stencils is allowed.*

Q1) Define map projection and describe the types and importance of map projections.

Q2) Describe the physical elements of interpretation of SOI Toposheet.

Q3) Discuss the use of aerial photographs and satellite images in geographical research.

Q4) Bring out the significance of bivariate and Multivariate correlation analysis in geographical research.

Q5) Bring out the significance of questionnaire and interview in the field work.

Q6) Explain the significance of research problem and analysis in geographical research.

Q7) Write notes (any two):

- a) Plane and geodetic survey.
- b) Drainage basin demarcation.
- c) Nature of data geography.



Total No. of Questions : 7]

SEAT No. :

P492

[Total No. of Pages : 1

[4233] - 407

M.Sc. (Semester - IV)

GEOGRAPHY

Gg - 430 : Social and Cultural Geography
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Give an account of early contributions and subject matter of social and cultural geography.

Q2) Write an elaborative account of origin and diffusion of culture.

Q3) Give a detailed account of individuals and theoretical space in social and cultural geography.

Q4) Describe various types and structure of social groups.

Q5) Explain the role of religion, caste, ethnicity, language, and dialect in the formation of Socio-Cultural regions.

Q6) Give an account of social and physical infrastructure in rural - urban settlements.

Q7) Write notes on Any Two:

- a) Groups in society.
- b) Patterns of social well being in the world.
- c) Rural - urban contrasts in education and economic characteristics.



Total No. of Questions : 7]

SEAT No. :

P493

[Total No. of Pages : 1

[4233] - 408
M.Sc. (Semester - IV)
GEOGRAPHY
Gg - 431 : Computer Geography
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) All questions carry equal marks.*
- 2) Attempt any four questions.*
- 3) Use of calculator and statistical table is allowed.*

Q1) Define computer. Explain the application of computers in various discipline.

Q2) Explain the functions of operating system.

Q3) Write an account of significance of Coral Draw in map making.

Q4) Explain the methods of Digitization.

Q5) Application of GIS in map making.

Q6) Discuss the application of EXCEL in preparing charts and graphs.

Q7) Write notes on any two:

- a) Use of Internet.
- b) Editing in Paint.
- c) AutoCAD.



Total No. of Questions : 7]

SEAT No. :

P494

[Total No. of Pages : 1

[4233] - 409
M.Sc. (Semester - IV)
GEOGRAPHY
Gg - 432 : Oceanography
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) Attempt any four questions.*
- 2) All questions carry equal marks.*
- 3) Use of map stencils is allowed.*

Q1) Define oceanography and discuss the post war oceanography.

Q2) Discuss continental drift with reference to origin of ocean basins.

Q3) Explain the physical properties of sea water.

Q4) Describe tide generating forces and explain 'Dynamical theory of tides'.

Q5) Discuss various types of currents and give ocean currents in Atlantic Ocean.

Q6) Give an account of marine sediments on the basis of their origin.

Q7) Write notes on any two:

- a) Origin and composition of sea salt.
- b) Types of sea waves.
- c) Tidal effects in coastal areas.



Total No. of Questions : 7]

SEAT No. :

P495

[Total No. of Pages : 1

[4233] - 410

M.Sc.

GEOGRAPHY

Gg - 433 : Natural and Manmade Hazards
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Discuss the probability of occurrence and effects of cyclonic storms.

Q2) Discuss the causes, effects and areas affected by floods in India.

Q3) Describe the causes and effects of soil erosion and deposition.

Q4) Discuss the impact of Sardar Sarover project on environment.

Q5) Explain the effects of Nuclear hazards.

Q6) "Pollution of rivers has been increasing due to religious activities in India".
Discuss.

Q7) Write notes on any two:

- a) Hydrological cycle.
- b) Biological hazards.
- c) Prevention of disaster.



Total No. of Questions : 7]

SEAT No. :

P496

[Total No. of Pages : 1

[4233] - 411

M.Sc.

GEOGRAPHY

Gg - 441 : Regional Geography of Europe
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Explain major vegetation types and distribution in Europe.

Q2) Discuss the salient features of agriculture in Europe.

Q3) Write an essay on 'development of transportation in Europe'.

Q4) Describe the balance of trade and impact of globalization in Europe.

Q5) Give an account of population Composition in Europe.

Q6) Explain the development and importance of tourism.

Q7) Write notes on any two:

- a) Development of industrial activities in Europe.
- b) Migrations in Europe.
- c) Urbanization.



Total No. of Questions : 7]

SEAT No. :

P497

[Total No. of Pages : 1

[4233] - 412

M.Sc.

GEOGRAPHY

Gg - 442 : Regional Geography of South East Asia
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Explain major vegetation types and distribution in South East Asia.

Q2) Explain energy resources of South East Asia with examples.

Q3) Explain development of industrial activities in South East Asia.

Q4) Describe the growth and distribution of population in South East Asia.

Q5) Give an account of population composition in South East Asia.

Q6) Explain the Urbanization in South East Asia.

Q7) Write notes on any two:

- a) Water and Land resources.
- b) Megalopolis.
- c) Tourist centers.



Total No. of Questions : 7]

SEAT No. :

P498

[Total No. of Pages : 1

[4233] - 413

M.Sc.

GEOGRAPHY

Gg - 443 : Regional Geography of North America
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) 'How the climate of North America is influenced by the two mountain systems parallel to the Coast' Discuss.

Q2) Give an account of mineral resources of North America.

Q3) Give an account of the problems and prospects of industrialization in North America.

Q4) Give an account of population growth and distribution in North America.

Q5) Describe growth and distribution of settlements in North America with examples.

Q6) Explain the U.S.A's involvement in international issue in post cold war period.

Q7) Write notes on any two:

- a) Geostrategic importance of North America.
- b) Irrigation in North America.
- c) Scope of tourism in North America.



Total No. of Questions : 7]

SEAT No. :

P499

[Total No. of Pages : 1

[4233] - 414

M.Sc.

GEOGRAPHY

Gg - 444 : Geography of Japan
(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) *Attempt any four questions.*
- 2) *All questions carry equal marks.*
- 3) *Use of map stencils is allowed.*

Q1) Explain the major climatic types and their characteristics in Japan.

Q2) “Hydel Power is a Major Controlling factor in the development of industries in Japan”. Justify.

Q3) Describe the factors affecting agriculture of Japan.

Q4) Give an account of industrial regions of Japan.

Q5) Explain the Population Composition of Japan.

Q6) Discuss in brief the growth and distribution of settlements in Japan.

Q7) Write notes on any two:

- a) Plate tectonics and location of Japan.
- b) Rivers flowing to sea of Japan.
- c) Export and import Partners of Japan.



Total No. of Questions : 7]

SEAT No. :

P500

[Total No. of Pages : 1

[4233] - 415

M.Sc.

GEOGRAPHY

**Gg - 445 : Geography of India
(2008 Pattern) (Semester - IV)**

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) Attempt any four questions.*
- 2) All questions carry equal marks.*
- 3) Use of map stencils is allowed.*

Q1) Divide India into main physiographic regions and describe indetail the northern mountains.

Q2) Explain the monsoon rainfall in India.

Q3) Discuss the impact of soil degradation and measures for the soil conservation.

Q4) Give an account of the power resources in India.

Q5) Describe the population composition in India.

Q6) Explain the regional development of Chhota Nagpur region.

Q7) Write notes on any two:

- a) Geological structure of India.
- b) Major forest types.
- c) Problems related to industrial development.

