Department of Geography

Course Outcomes of BA (Geography)

Semester-1

Paper 101 Geography of India

Internal Assessment Marks: 15

External Assessment Marks: 60

Maximum Marks : 75

Time : 3 Hours

Note: There shall be nine questions in all. The candidates have to attempt five questions including Question 1 which is compulsory comprising six short questions to be answered in 15-20 words each. In addition the candidates have to attempt four more questions selecting at least one from each section. All questions carry equal marks.

SECTION- A

1. India: Location, relief structure and drainage systems.

2. Climate, soils, natural vegetation, and natural disasters in India.

SECTION – B

3. Population: distribution, density, growth and composition.

4. Migration, human settlement types and levels of urbanization.

SECTION-C

5. Land resources, irrigation, regional variations in cropping pattern,

Green revolution and problems of Indian agriculture.

6. Energy and mineral resources: coal, petroleum, hydroelectricity and nuclear energy, iron ore, manganese and mica.

SECTION-D

7. Industries- iron and steel, cotton textile, sugar and petrochemical industries; and industrial regions of India.

8. Modes of transport and communication, international trade changing pattern of export and import.

Suggested Readings

1. Deshpande, C D: India – A Regional Interpretation, Northern Book Depot, New Delhi, 1992.

2. Singh, Gopal : Geography of India, Atma Ram and Sons, 2006.

3. Shafi, M : Geography of South Asia, McMillan and Company, Calcutta, 2000.

4. Singh, R L (ed) : India : A Regional Geography, National Geographical Society, India, Varanasi, 1971.

Course outcome:

CO1. Knowledge about basic geographical Personality of India.

CO2. Understand the variability of Physiography, climate& drainage system in India.

CO3. Discussing processes of soil formation and types of soil.

CO4. Acquire knowledge of forests in India.

CO5. Understand the natural vegetation of India.

CO6. Students understand the social distribution of population of their country.

CO7. They understand the economic resource of India.

CO8. Gain knowledge about modes of transport and communication.

Paper 102 Maps and Scales (Practical)

Maximum Marks: 25

Time : 3 Hours

Distribution of Marks

Exercises = 15

Record File = 05

Viva-voce = 05

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Introduction to Cartography.

2. Maps and their types.

3. Map Scales. Exercises

(i) Methods of Expressing a scale 2

(ii) Conversion of Statement of Scale into R.F. and vice-versa.

(iii) Plain Scale (Km and mile)

(iv) Comparative Scale 1

(v) Diagonal Scale 1

4 Measurement of Distances and Areas on Maps

5 Enlargement and Reduction of Maps

Suggested Readings:

1. F.J. Monkhouse and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London

2. L.R. Singh and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.

3. R.I. Singh and P.K. Dutt (1968), Elements of Practical Geography, Students Friends, Allahabad.

Course outcome

CO 1. Gain knowledge about cartography.

CO 2. Understand the concept of maps and their types.

CO 3. Develop an idea about scale and draw different types of scale like linear, diagonal and vernier.

Semester-2

Paper 103 Physical Geography – I

Internal Assessment Marks: 15

External Assessment Marks: 60

Maximum Marks : 75

Time : 3 Hours

Note: There shall be nine questions in all. The candidates have to attempt five questions including Question 1 which is compulsory comprising six short questions to be answered in 15-20 words each. In addition the candidates have to attempt four more questions selecting at least one from each section. All questions carry equal marks.

SECTION- A

1. Definition, Nature, scope and fields of Physical Geography.

2. Interior of the earth, Geological time scale and rocks.

SECTION- B

3. Earth movements; organic, eperogenic, earth quakes and volcanoes.

4. Theory of Isostasy ; Wegner's theory of continental drift and Plate tectonic theory.

SECTION- C

5. Weathering; causes and its types.

6. Mass-movements; causes, its types and impacts.

SECTION- D

7. Concept of cycle of erosion; cycle of erosion by W.M.Davis and

8. Process of Wind, River, Underground water, Glaciers and Sea waves.

References

1. Sharma H.S. Perspective in Geomorphology, Concept, New Delhi 1980.

2. Singh Savinder, Geomorphology, Prayag Publication, Allahabad 1998.

3. Singh Savinder, Physical Geography Prayag Publication, Allahabad, 1998.

4. Sparks B.W. Geomorphology, Jojngman, London, 1960.

5. Thornbury W.D. 1969 Principles of Geomorphology, New York, John Wiley & Sons.

Course outcome:

CO 1. Understand the interior structure of the earth.

CO 2. Study the formation of rocks.

CO 3. Understand concept of normal cycle of erosion and its interruption.

CO 4. Understand process of erosion the deposition and resulting landform.

CO 5. Understand Theory regarding of Origin of Continents.

CO 6. Understand the work of internal and external forces and their associated

landforms.

Co 7. Develop an idea about earth movements and the related topography

Paper 104 Representation of Physical Features (Practical)

Maximum Marks: 25

Time : 3 Hours

Distribution of Marks

Exercises = 15

Record File = 05

Viva-voce = 05

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Introduction to Topographical Sheets 3

India and adjacent countries

. Degree Sheet

. Half Degree Sheet

. Quarter Degree Sheet

. Conventional Signs

2. Methods of representing relief 1

3. Representation of Topographical features by contours. 4

Slopes (Concave, convex, undulating and terraced)

Valleys (V Shaped, U shaped, Gorge, Re-entrant)

Ridges (Conical hill, Volcanic hill, Plateau, Escarpment)

Complex features (waterfall, sea cliff, overhanging cliff, Fiord coast)

4. Drawing of Profiles 5

(a) Cross Profiles: Serial, superimposed, projected

and composite profiles.

(b) Longitudinal profiles

Suggested Readings:

1. F.J. Monkhouse and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd.,

London.

2. L.R. Singh and Raghuvander Singh (1973), Map Work and Practical Geography, Central

Book Depot, Allahabad.

3. R.I. Singh and P.K. Dutt (1968), Elements of Practical Geography, Students Friends,

Allahabad

4. Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Vikas Publication

House, New Delhi.

Course outcome

CO 1. Gain knowledge about topographical maps and apply this knowledge in ground surface.

CO 2. Representation of Topographical features by contours.

CO 3. Drawings of Profiles cross profiles and composite profiles etc.

Semester-3

Paper 201 Physical Geography-II

Internal Assessment Marks: 15

External Assessment Marks: 60

Maximum Marks : 75

Time : 3 Hours

Note: There shall be nine questions in all. The candidates have to attempt five questions including Question 1 which is compulsory comprising six short questions to be answered in 15-20 words each. In addition the candidates have to attempt four more questions selecting at least one from each section. All questions carry equal marks.

SECTION-A

1. Weather and Climate; Origin, composition and structure of atmosphere.

2. Insolation, Global heat budget, Horizontal and vertical distribution of temperature, inversion of temperature.

SECTION-B

3. Atmospheric pressure- measurement and distribution, pressure belts, planetary winds, Monsoon, Jet Streams EL NINO- La Nina Phenomenon and Local winds.

4. Humidity- measurement and variables, evaporation, condensation, precipitation forms and types and distribution, hydrological cycle.

SECTION-C

5. Air masses- concept and classification; Fronts- type and characteristics, Weather disturbances- tropical and extra-tropical cyclones.

6. Climate classification by Koppen; climatic change and global warming.

SECTION-D

7. Configuration of oceanic floors and surface relief of Pacific, Atlantic and Indian

Oceans; temperature and salinity of oceans.

8. Tides, waves and oceanic currents; circulation in Pacific, Atlantic and Indian Oceans;

Oceanic resources.

Suggested Readings:

1. Barry, RG and Chorley R.J., Atmosphere, Weather and Climate, Routledge, 1998.

2. Critchfield, H., General Climatology, Prentice-Hall of India, 2002.

3. King, C. Oceanography for Geographers, Edward Arnold, London, 1975.

4. Trewartha, GT: An Introduction to Climate, Mc-Graw Hill, New York, 1981.

5. Trewartha, G.T., The Earth's Problems Climates, University of Wisconsin Press, USA.

Course outcome

CO 1. Understand the importance of Atmosphere

CO 2. Understand the composition of atmosphere

CO 3. Know Measurement of Atmospheric Pressure and formation of Pressure

Belts

CO 4. Acquire knowledge about types of rainfall

Paper – 202 Representation of Climatic Data (Practical)

Maximum Marks: 25

Time : 3 Hours

Distribution of Marks

Exercises = 15

Record File = 05

Viva-voce = 05

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Measurement of temperature, rainfall, pressure and humidity.

2. Representation of temperature and rainfall.

(i) Line and Bar Graph – 1 Exercise.

(ii) Distribution of temperature (180 therms) – 1 Exercise.

(iii) Distribution of rainfall (180 hytes) – 1 Exercise.

(iv) Hythergraph - 1 Exercise.

(v) Rainfall deviation diagram - 1 Exercise.

3. Climograph (wet and dry places) - 2 Exercise.

4. Distribution of pressure (180 bars) - 2 Exercise.

5. Weather map Interpretation (January & July) - 2 Exercise.

6. Change and tape survey – 2 Exercise.

Suggested Readings:

1. Mishra R.P. and Ramesh A. 1999. Fundamentals of Cartography, Concept Publishing

Company, New Delhi.

2. Monkhouse, FJ, and Wilkinson H.R., 1972. Maps and Diagrams, Methuen Press, London

3. Robinson, A.H. et.al. Elements of Cartography, John Wiley & Sons, 1995.

4. Singh, R.L., 1979. Elements of Practical Geography, Kalyani Publisher, New Delhi.

Course outcome

CO 1. Gain knowledge about Indian daily weather report.

CO 2. Learn to use of various meteorological instruments.

CO 3. Learn to draw monthly temperature and rainfall graphs.

CO 4. Brings direct interaction of different types of surveying instruments like chain, tape, ranging -rods & arrows etc.

Semester-4

Paper 203 Human Geography

Internal Assessment Marks: 15

External Assessment Marks: 60

Maximum Marks : 75

Time : 3 Hours

Note: There shall be nine questions in all. The candidates have to attempt five questions including Question 1 which is compulsory comprising six short questions to be answered in 15-20 words each. In addition the candidates have to attempt four more questions selecting at least one from each section. All questions carry equal marks.

Section -I

1. Nature and scope of Human Geography, Branches of Human Geography, Approaches to the study of Human Geography.

2. Division of Mankind: Spatial distribution of race and tribes of India; concept of men- environment relation : A historical approach.

Section - II

3. Human adaptation to the environment (i) Cold region – Eskimo (ii) Hot region- Bushman (iii) Plateau – Gonds (iv) Mountains – Gujjars

4. Meaning, nature and components of resources; Classification of resources – renewal and non- renewable ; biotic and aboitic, recyclable and non recyclable.

Distribution, utilization and conservation of biotic (flora and fauna) and aboitic (water, minerals and energy) resources.

Section - III

5. Distribution and density of world population, population growth, fertility and mortality patterns.

6. Concept of over, under and optimum population; Population theories: Malthus, Ricardo and Marx.

Section-IV

7. Rural settlements: Meaning, classification and types. Urban settlements: Origin, classification and functions of towns.

8. Population pressure, resource use and environment degradation; sustainable

development, concept of deforestation, soil erosion, air and water pollution.

Suggested Readings:-

1. Agarwal, A etal : The Citizen's Fifth Citizen's Report, Centre for Science &

Environment, New Delhi, 1999.

2. Alexander, John. W. : Economic Geography, Prentice Hall of India Ltd., New Delhi,

1988.

3. Bergwan, Edward E: Human Geography: Culture Connections and Landscape, Prentice- Hall, New Jersey, 1985.

4. Carr, M. Patterns: Process and Change in Human Geography, McMillan Education,

London, 1987.

Course outcome:

CO 1.The student will be aware of the scope and contents of human geography

CO 2. Gain knowledge about the relationship of man and environment

CO 3. Studies of races of man kinds.

CO 4. Understand the modes of life of aximo, pigmy, gonad ,Bhil And nagas.

CO 5.Different types of settlement and characteristics and their definitions.

Paper 204 Maps Projections (Practical)

Maximum Marks: 25

Time : 3 Hours

Distribution of Marks

Exercises = 15

Record File = 05

Viva-voce = 05

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Introduction to Map Projection: Meaning, Classification and importance; Characteristics

of latitudes and longitudes lines.

2. Cylindrical projections: Characteristics, applications and drawing; (3)

(i) Simple cylindrical projection

(ii) Cylindrical equal area projection.

(iii) True shape or orthomorphic or Mercator's Projection. (5)

3. Conical Projections: Characteristics, applications and drawing.

(i) Simple conical projections with one standard parallel

(ii) Simple conical projection with two standard parallel

(iii) Bonne's Projection

(iv) Polyconic projection.

(v) International Map Projection.

4. Zenithal Projections: Characteristics, applications and drawing. (5)

(i) Polar Zenithal Equidistant Projection.

(ii) Polar Zenithal Equal Area Projection

(iii) Polar Zenithal Gnomonic Projection

(iv) Polar Zenithal Stereographic Projection.

(v) Polar Zenithal Orthographic Projection

5. Characteristics, applications and drawings of (i) Sinosoidal and (2)

(ii) Mollweide Projections.

6. Plane Table Survey. (2)

Suggested Readings:-

1. Goyal K.K.1981.. Practical Geography, Manthan Publication, Rohtak.

2. Gregory S. 1963. Statistical Methods and the Geography, Longman, London.

3. Khan, A.A. 1996. Text Book of Practical Geography, Concept, New Delhi,.

4. Lawarence, GRP1968. Cartographic Methods, Methuen, London,.

5. Monkhouse, F.J. and Wilkinson, H.R1994. Maps and Diagrams, Methuen, London,

Course outcome:

CO 1. Acquire knowledge different types of map projection.

CO 2. Bring direct interaction of different types of surveying instruments like plain table survey.

Semester-5

Paper 301 Economic Geography

Internal Assessment Marks: 15

External Assessment Marks: 60

Maximum Marks : 75

Time : 3 Hours

Note: There shall be nine questions in all. The candidates have to attempt five questions including Question 1 which is compulsory comprising six short questions to be answered in 15-20 words each. In addition the candidates have to attempt four more questions selecting at least one from each section. All questions carry equal marks.

Section A

1. Nature, scope and relationship of economic geography with economics and other branches of social sciences.

2. Classification of economic activities and their impact on environment.

Section B

3. World natural resources: Types, bases and classification.

4. Conservation and utilization of natural resources.

Section C

5. Spatial distribution of food (rice and wheat), commercial (cotton and sugarcane) and plantation crops (tea, rubber and coffee).

6. Classification of mineral resources (ferrous and non-ferrous), distribution and

production of coal, iron ore, petroleum and natural gas.

Section D

7. Classification of industries, world distribution and production of iron and steel and textile industry, major industrial complexes of the world.

8. Transport, communication and trade: geographical factors in their development, major modes of water, land and air transport, recent trends in international trade

Suggested Readings:

1. Hartshorne TN and Alexander JW. 1988. Economic Geography, Prentice Hall, New Delhi.

2. Jones CF and Darkenwald GG. 1975. Economic Geography. McMillan Company, New York

3. Thomas, RS. 1962. The Geography of Economic Activities. McGraw Hill, New York.

4. Wheeler J et al. 1995. Economic Geography. John Wiley, New York.

Course outcome:

CO1. Students understand about the nature and scope of economic geography **and approaches.**

CO 1 . Study the different types ofHuman Economic Activities

CO 2. Definition of power resource coal, petroleum and water.

CO 3. Definition and classification of natural resource and conservation of natural resource.

CO 4. Study of different types of crops:wheat,rice,cotton,sugarcane and their distribution

CO5. Gain knowledge about trade.

Paper 302 Distribution Maps and Diagrams (Practical)

Maximum Marks: 25

Time : 3 Hours

Distribution of Marks

Exercises = 15

Record File = 05

Viva-voce = 05

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Principal of map design and layout

2. Symbolization: point, line and area symbol

3. Lettering and toponomy

4. Mechanics of map construction

5. Distribution maps

(i) Qualitative distribution maps

x Choroschematic maps- 1 Exercise

x Chorochromatic maps- 2 Exercise

(ii) Quantitative distribution Maps

x Isopleth maps-3 Exercises

x Choropleth maps-3 Exercises

x Dot maps-3 Exercises

x Diagrammatic maps- 3 Exercises.

6. Prismatic Compass Survey – 2 Exercises.

Suggested readings:

1. Mishra RP and Ramesh A. 1999. Fundamentals of Cartography, Concept Publishing Company, New Delhi.

2. Monkhouse FJ and Wilkinson HR. 1972. Maps and Diagrams, Methuen Press, London

3. Singh Gopal. 2004. Map Work and Practical Geography, Vikas Publication House, New Delhi.

4. Singh RL. 1979. Elements of Practical Geography, Kalyani Publishers, New Delhi

Course outcome

CO 1. Learning about prismatic compass survey.

CO 2. Principle of maps design and layout.

Semester-6

Paper-303-Introduction to Remote Sensing, GIS & Quantitative Methods

Internal Assessment Marks: 15

External Assessment Marks: 60

Maximum Marks : 75

Time : 3 Hours

Note: There shall be nine questions in all. The candidates have to attempt five questions including Question 1 which is compulsory comprising six short questions to be answered in 15-20 words each. In addition the candidates have to attempt four more questions selecting at least one from each section. All questions carry equal marks.

Section-A

1. Introduction to Aerial Photographs: their advantages and types.

2. Elements of aerial Photo interpretation.

Section-B

3. Introduction to Remote Sensing; Electromagnetic spectrum, stages in remote sensing, type of satellites.

4. Types of Imageries and their application in various fields such as agriculture, environment and resource mapping.

Section-C

5. Introduction to Geographical Information System: Definition, purpose, advantages and software and hardware requirements.

6. Application of GIS in various fields of geography.

Section-D

7. Measure of Central Tendency: Mean, Median and Mode.

8. Measure of Dispersion: Range, Quartile deviation and Mean deviation, Standard deviation, Coefficient of variation.

Suggested Readings:

1. Aslam Mahmood 1993. Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi,.

2. John R. Jensen 2009. Remote Sensing of the Environment;, An Earth Resource Perspective, Pearson Education, (India Edition) New Delhi,

3. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi,

4. Lillesand and R.W.Kiefer,2005. Remote Sensing and Image Interpretation, John Wiley and Sons.

Course outcome:

CO 1. Understand the History of Remote Sensing

CO 2. Know Aerial Photographs and Satellite Imageries

CO 3. Acquire Knowledge about Indian Remote sensing.

CO 4. Investigate components and function of GIS

CO 5. Study GIS Data models.

CO 6. Make use GIS & GPS software.

CO 7 They can know about concepts, components, development, platforms and types of remote sensing and GIS.

Paper 304 – Introduction to Remote Sensing and Field Survey Report

Maximum Marks: 25

Time: 3 Hours

I - Remote Sensing Practical -15 Marks

Marks Breakup

Exercise = 09

Record book =03

Viva-voce = 03

Note: There will be four questions in all and candidate has to attempt three exercises.

1. Demarcation of Principal Point, Conjugate Principal point and Flight line on Aerial

Photographs – 1 Exercise

2. Determination of Scale of Aerial Photographs – 1 Exercise.

3. Interpretation of Single Vertical Photographs – 1 Exercise.

4. Use of Stereoscope and Identification of Features – 1 Exercise.

5. Identification of Features on IRSID, LISS III imagery (Mark copy of FCC) -1 Exercise.

II Socio-economic Survey and Report Writing -15marks.

Marks Breakup

Field Survey Report = 10marks

Viva-voce = 5 marks

Suggested Readings:-

1. John R. Jensen, Remote Sensing of the Environment; An Earth Resource Perspective,

Pearson Education, (India Edition) New Delhi, 2009.

2. Lillesand and R.W.Kiefer, Remote Sensing and Image Interpretation, John Wiley and

Sons, 1994.

Course outcome

CO 1. Getting to know superficially about remote sensing and aerial interpretation with the help of pocket stereoscope.

CO 2. Necessity of field report in practical geography; collection of data and how to prepare a report from the data collected.

Program outcomes

On Completion of the B.A. (Geography), Students are able to:

Geography mainly concerns changes in spatial attributes in a temporal perspective. The Graduate programme in geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasises on human-environment relationship. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing. They will also be able to pursue M.A. /M.Sc. Course in Geography.

PO1. Student will gain the knowledge of physical geography.

PO2. They will be able to acquire the knowledge of Human Geography and will correlate it with their practical life.

PO3. Students will be able to locate on a map major physical features cultural regions and Individual states and urban centers.

PO4. Student will understand global and regional patterns of cultural political and economic institution.

PO5. Student will understand use and conservation of natural resource and landscape.

PO6. Student become equipped with the ability to response to both natural and manmade disaster and acquire management skills.

M.A. Geography course outcome

M.A. Geography Semester-I Session 2016-17 Onwards

16GEO21C1 GEOMORPHOLOGY

Credit: 04 (3+1+0)

End Semester Exam : 80 marks

Internal Assessment : 20 marks

Total : 100 marks Time : 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question

from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-1

Geomorphology - Definition, Nature and scope, History and development of geomorphic ideas : Fundamental concepts - Uniformitarian's, geological structure, process and stage. The Earth's interior - structure and constitution, Recent Views. Plate tectonics- meaning and concept; plates, plate margins and boundaries; plate motion; Tectonic activities along the boundaries and Distribution of plates.

Unit-II

Endogenetic processes - Faulting, folding and their geomorphic expressions. earthquake concept, causes, classification, intensity and magnitude, Geographical distribution. Vulcanism - concept, mechanism and causes; Volcanoes- classification, volcanic materials; Topography associated with vulcanicity and geographical distribution.

Unit-III

Exogenetic processes : Weathering and mass wasting - meaning and concept, controlling factors, classification and significance. Dynamics of fluvial, aeolian, glacial and karst processes and resulting landforms.

Unit-IV

Applied Geomorphology - meaning; Applications of Geomorphology in Regional planning, engineering projects, mineral exploration and hydrology. Regional Geomorphology of Punjab plain, Aravalli Region and Thar desert of India.

Recommended Readings:

1. Bloom, A.L. (1992) Geomorphology, Second Edition, Prentice Hall of India, New Delhi.

2. Dayal, P. (1990) A Text Book of Geomorphology, Shukla Book Depot, Patna.

3. Husain Majid (2002), Fundamentals of Physical Geography, Second Edition, Rawat

Publications, Jaipur and New Delhi.

4. Singh Savindra (1993), Physical Geography, Prayag Pustak Bhawan, Allahaba1998), Geomorphology, Prayag Pustak Bhawan, Allahabad.

5. Strahler, A.N. and Strahler, A.H.(1996), Introducing Physical Geography, John Willey

and Sons, New York.

COURSE OUTCOME

On completion of the course, students are able to:

CO1.Understand the nature,scope of geomorphology and fundamental concept in syllabus.

CO2.Gain knowledge about earth's interior.

CO3. Develop an idea about concept of plate tectonics,plate margins and distribution of plates.

CO4. Acquire knowledge about types of folds and faults and earthquakes, volcanoes and

associated landforms.

CO5. Explain different types of geomorphic processes like weathering and mass wasting

CO6.Understand formation,process and development of fluvial,glacial,Aeolian and karst.

CO7.Explain the regional geomorphology of Punjab plan,Aravali region and Thar desert.

16GEO21C2 CLIMATOLOGY

Credit: 04 (3+1+0)

End Semester Exam : 80 marks

Internal Assessment : 20 marks

Total : 100 marks Time : 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Nature and Scope of Climatology; Climatic elements – atmospheric temperature, pressure, moisture, general atmospheric circulations jet stream.

Unit-II

Weather system and disturbances – air-mass, fronts, cyclones, tornades; Ocean atmospheric interaction- EI Nino, Monsoon winds.

Unit-III

Global climate system - Approaches to climatic classification; Classification of Koppen, and Thornthwaite; Major Climates of the world-tropical and polar.

Unit -IV

Climatic changes - evidences, possible causes, global warming acid rain and problems of acid rain.

Recommended Readings:

1. Aggarwal, S.K. (1972), Fundaments of Ecology, Ashish Publishers, New Delhi.

2. Barry, R.G. and Chorely, R.J., Atmosphere, Weather and Climate, ELBS, Methuen & Co. Ltd. London.

3. Bhutani, Smita, (2000) Our Atmosphere, Kalyanai Publishers, New Delhi.

4. Critchfield, H.J. (1987) Climatology, Prentice Hall of India, New Delhi.

5. Griffith, J.F. and Driscell, D.M. (1982) Survey of Climatology, Charles Merril.

6. Lal, D.S. (1993) Climatology, Chaitanya Publishing House, Allahabad.

7. Riehl, H. (1968), Introduction to Atmosphere, McGraw Hill, New York.

Course Outcome

On completion of the course, students are able to:

CO1.Understand the introduction to Climatology considering weather & climate,nature,scope, and other sub division of the course.

CO2. Understand the Atmosphere and their process , composition, structure of Atmosphere.

CO3. Understand the concept of temperature and factors, horizontal, vertical and inversion

of temperature

CO4.Identify the Atmospheric pressure and winds ,humidity.

CO5. Develop an idea about cyclones,Airmasses and fronts,

CO6.Understand the climatic classification based of nature and variability in climatic variations by Koppen.s and Thornwaites climatologist.

CO7 .Assessing the role of man in global climate change.

16GEO21C3 RESOURCE GEOGRAPHY

Credit : 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks Time: 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks

Unit-I

Nature, Scope and Significance of Geography of Resource; Definition and Concept of Resources, Classification of Resources.

Unit-II

Models of Natural Resource Processes: Zimmermann's Primitive and Advance Models of Natural Resource Process, Kirk's Decision Model, Brookfield System Model.

Unit-III

Use and Misuse of Resources: Soil Resource; Water Resource; Forest Resource and Mineral Resources; Future Prospects of Natural Resources.

Unit-IV

Conservation and Management of Natural Resources : Meaning and Concept of Conservation of Natural Resources; Resource Conservation and Management Methods of Natural Resources- Soil Resource, Water Resource, and Forest Resource; Problems of Natural Resource Management in India.

Recommended Readings:

1. Eliot Hurst, M.E. (1972) A Geography of Economic Behaviour: An Introduction, Duxbury Press, California.

2. Guha, J.L. and P.R.Chattroj (1994) Economic geography- A Study of Resources, The World Press Pvt. Ltd. Calcutta

3. Haroon Mohamad. (2007) Geography of Resources, Vasundhara Parkashan, Gorakhpur. (Hindi Edition)

4. Martin, R.H. and F.L. Warren. (1959) Natural Resources. McGraw Hill Book Co. London.

5. Maurya, S.D. (2015) Economic Geography. Parwalika Publications, Allahabad (Hindi Edition).

6. Negi, B.S.(2000) Geography of Resources, Kedar Nath and Ram Nath,Meerut

7. Owen, Oliver, S.(1971) Natural Resource Conservation : A Ecological Approach. Mc

Course Outcome

On completion of the course, students are able to:

CO1.The students will be aware of the scope and Significance of Resource geography.

CO2. Develop an idea about resource.

CO3. Understand the concept and different types of resources.

CO4.Understand the models of natural resources processes.

CO5. Gain knowledge about use and misuse of natural resources..

CO6. Aware the student about need of conservation and management of natural

resources.

16GEO21C4 STATISTICAL METHODS IN GEOGRAPHY

Credit : 04 (3+1+0)

End Semester Exam : 80 marks

Internal Assessment : 20 marks

Total: 100 marks Time : 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks

Unit-1

Statistics, Geography and Statistics; Significance of Statistics in geographical studies; Primary and Secondary Data; Levels of data measurement: Nominal, Ordinal, Interval, and Ratio.

Unit-II

Measures of Central Tendency: Arithmetic Mean, Median, Mode and their geographical significance; Centrographic techniques: Mean Centre, Median Centre and Standard Distance.

Unit-III

Measures of dispersion and concentration: Mean deviation, Standard Deviation; Coefficient of Variation, Lorenz Curve and Gini's Coefficient; Location Quotient.

Unit-IV

Correlation and regression: Scatter diagram, correlation by Spearman's Rank Difference and Karl Pearson's Product Moment, Significance testing of Correlation; Regression analysis regression equations construction of regression line, computation of residuals and mapping.

Recommended Readings :

1. David M. Smith (1975), Patterns in Human Geography, Penguin, Harmonsworth.

2. Ebdon, D (1983), Statistics in Geography : A Pratical Approach, Blackewell, London.

3. Gregory, S. (1978) Statistical Methods and the Geographer (4th Edition), Longman,

London.

4. Gupta, S.P., Statistical Methods, Sultan Chand and Sons, Latest Edition.

5. Mathews, J.A. (1987), Quantitative and Statistical Approaches to Geography,

Practical Manual, Pergmon, Oxford.

Course Outcome

On completion of the course, students are able to:

CO1. Learn the significance of statistics in geography.

CO2. Understand the importance of use of data in geography

CO3.Understand the representation of Statistical data.

CO4.Compute of Measures of Central tendency.

CO5.Compute of measures of dispersion and concentration.

CO6. Calculation and plotting moving Average.

CO7. Compute the Correlation of Pearson's and Spearman's methods.

CO8. Statistical data Analysis of simple regression.

16GEO21CL1 PRACTICAL: TOPOGRAPHICAL MAPS AND INTERPRETATION

Credit: 03 (0+0+3)

Time: 4 Hours

Max. Marks: 50

Distribution of marks:

Lab work test: 30

Record on lab work: 10

Viva Voce: 10

Note:

The question paper shall contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Unit - I

Introduction to Maps: Definition and Types of Maps, Map scale, Conventional map symbols, Importance and uses of maps

Unit - II

Interpretation of Topographical maps: Topographical maps and their types, Basic information on Topographical sheets, Conventional Signs, Identification of Physical and Cultural details on Survey of India Toposheets.

Recommended Readings :

1. Robinson A. H. 2009. Elements of Cartography. New York: John Wiley and Sons.

2. Sharma J. P. 2010. Prayogic Bhugol. Meerut: Rastogi Publishers.

3. Singh R. L. and Singh R. P. B. 1999. Elements of Practical Geography. Noida: Kalyani Publishers.

4. Sarkar, A. 2015. Practical Geography: A Systematic Approach. New Delhi: Orient Black Swan Private Ltd.

5. Singh, R. L. and Rana P. B. Singh. 1991. Prayogtmak Bhugol ke Mool Tatva. New Delhi: Kalyani Publishers.

6. Sharma, J. P. 2010. Prayogtmak Bhugol ki Rooprekha. Meerut: Rastogi Publications,

7. Singh, R. L. and P. K. Dutta, 2012. Prayogatmak Bhugol, Allahabad: Central Book Depot.

Course Outcome

CO1.To develop the skill of map interpretation through identification of physical and cultural features using conventional signs.

CO2.Students should be able to understand the importance and uses of maps and the relationship and juxtaposition of fearures therein.

16GEO21CL2 PRACTICAL: COMPUTER AIDED STATISTICAL DIAGRAMS AND GRAPHS

Credit : 03(0+0+3)

Time : 4 Hours

Max. Marks : 50

Distribution of marks:

Lab work test : 30

Record on lab work : 10

Viva Voce : 10

Note:

The question paper shall contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Unit - I

Introduction to Computer: Components of Computer—Hardware and Software; Use of Computers in Geography.

Unit – II

Introduction to Microsoft Excel: Input of data, Bar Diagram, Pie Diagram, Scatter Diagram, Line Graph. Placement of heading and sub-heading, legend, Font size, Style, Bold, Italics, Changes from colour to different shade pattern. Different weight, colour and pattern to X and Y coordinates. Page layout. Ascending and Descending order.

COURSE OUTCOME

CO1.Gain knowledge about computer and its components.

CO2.Understand the use of computer in geography.

Co3.Students can ability to analyse, classify and prepare data for drawing statistical diagrams through computer.

M.A. Geography Semester-II Session 2016-17 Onwards

16GEO22C1 - GEOGRAPHY OF WORLD ECONOMY

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Economic Geography: The Stuff of Economic Geography, A brief history, Why Economic Geography? Modes of Theorizing in Economic Geography: Political Economy, Poststructuralist Economic Geography

Unit-II

Capitalism, Fundamental Concepts: Use-value, Exchange Value, Capital, Capital and Labour, Capital Accumulation, Capital Accumulation by Dispossession. Capitalism in Twentieth Century: Organized Capitalism Disorganized Capitalism. Neo-Liberalism.

Unit-III

World Economy and the Capitalist mode of production, The Basic Elements of World Economy: A Single Market, a Multiple State System, the Three-tier structure; A Space-Time Matrix of the World Economy, Dynamics of World Economy, Spatial

Structure of the World Economy.

Unit-IV

Economic Development: Globalization or Internationalization, Patterns of

International Trade, WTO and Developing Countries.

Recommended Readings:

1. Aoyama, Yuko et.al. (2011), Key Concepts in Economic Geography, London: Sage.

2. Benko, Georges and Ulf Strohmayer (2004), Human Geography, London:

Arnold.

3. Daniels, Peter et.al. (2003). Human Geography, New Delhi: Pearson.

4. Dicken, P. (2003), Global Shift: Reshaping the Global Economic Map in

the 21st Century, New Delhi: Sage Publications.

5. Gwynne, Robert et.al. (2003), Alternative Capitalism, London: Arnold.

6. Harvey, David (1982), The Limits to Capital, Oxford: Basil Blackwell. 7. Harvey, David (1990), The Condition of Postmodernity, Oxford: Blackwell.

Course outcome:

On completion of the course, students are able to:

CO 1. Gain knowledge about economic geography and the stuff ,importance of economic geography

CO 2. Understanding the concept of political economy.

CO 3. Gain knowledge about use value, exchange value, capital.

CO 4. Develop an idea about the basic elements of world economy.

CO 5. Build an about Globalization, WTO and developing country.

16GEO22C2 - REGIONAL DEVELOPMENT AND PLANNING

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit I

Conceptual and theoretical framework: Concept of development, regional development; concept of region and regional planning; geography and regional planning; selection of indicators and measures of regional disparities.

Unit II

Regional Growth Theories: Friedman's core-periphery theory; polarisation and trickle-down effect theory of Hirschman; circular and cumulative causation model of Myrdal; growth pole theory of Perroux.

Unit III

Planning process: types of planning; regional planning and its rationale, principles and objectives. Regions for Planning: characteristics, hierarchy, need, and demarcation; Planning regions of India.

Unit IV

Experiences of regional development and planning in India - multi level planning (state, district, block and panchayat level planning); Regional Policies in the Indian Five Year Plans; planning policies for regional development; regional backwardness: criteria, strategy and programmes for backward area development.

Recommended Readings:

1. Bhatt, L.S. 1972. Regional Planning in India. Statistical Publishing Society,

Calcutta.

2. Chand, M and V.K. Puri. 1985. Regional Planning in India. Allied Pub. Pvt.

Ltd. New Delhi.

3. Coates, B.R. and R.J. Johnston. 1977. Geography and Inequality. Oxford

University Press, Oxford.19

4. Government of India. 2013. Report of the Committee for Evolving a

Composite Development Index of States Ministry of Finance.

http://finmin.nic.in/reports/Report_CompDevState.pdf

5. Friedmann, J. and William Alonso. 1967. Regional Development and

Planning: a Reader. MIT Press, Cambridge Massachesetts

Course outcome

On completion of the course, students are able to:

CO 1. Gain knowledge about definition of region, evolution and types of regional planning.

CO 2. Develop an idea about choice of a region for planning.

CO 3. Build an idea about theories and models for regional planning.

CO 4. Know about measuring development indicators.

16GEO22C3 - ENVIRONMENTAL GEOGRAPHY

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question

from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Environmental Geography: Nature and scope of environmental geography, fundamental concepts of environmental geography; Approaches and methods in Environmental Geography; Relationship with other branches of knowledge,

Environment and Ecology: Meaning, structure and type of Environment, Ecology - meaning, scope and concepts. Sub-vision of ecology.

Unit-II

Ecosystem: Meaning and concepts of ecosystem, Classification and components of eco-system, trophic structure, ecological pyramid, energy flow and biogeochemical cycle; Ecological regions of India.

Unit-III

Environmental pollution- meaning, types, sources, causes and impacts; Air, Water and Land pollutions; Environmental Degradation – Nature, process, types and causes of environmental degradation; Green house effect, Global warming, Ozone depletion and Desertification.

Unit-IV

Environmental management- concept, methods and approaches. Management of soil, forest and mineral resources; Disaster Management; Conservation of natural resources; Emerging environmental problems and issues in India, Environmental policies, programmes, awareness and movements in India.

Recommended Readings:

1. Anderson J.M. (1981): Ecology for Environmental Science: Biosphere, Ecosystems and Man, Arnold, London.

2. Awasthi, N.M. and Tiwari, R.P.L. (1995):ParyavaranBhugool (Environmental

Geography), Madhya Pradesh Hindi Granth Academy, Bhopal.21

3. Goudie, Andrew (1984): The Nature of the Environment, Oxford Katerpring

Co. Ltd.

4. Nobel and Wright (1996): Environmental Science, Prentice Hall, New York.

Course outcome:

On completion of the course, students are able to:

CO 1. Understand the fundamental concept related to environment, meaning, structure, types, component, geography and environment, man's interaction with environment

CO 2. To study about the nature, scope, basic concept, interdisciplinary science, and study methods.

CO 3. Understand the types, functions and component of ecosystem and biodiversity, its types, conservation methods, and preservation of ecosystem.

CO 4. To understand the environmental global problems such as deforestation, desertification, depletion of ozone, global warming.

CO 5. Understand the role of environmental legislation laws and acts for environment protection and conservation.

CO 6. Study the environmental planning and management for future and also understand the climatic changes and its effect on environment and human being.

16GEO22D3 - GEOGRAPHY OF INDIA

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain

two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-1

Physiographic division of India; Drainage systems" Mechanism of Indian monsoons and climatic regions of India: types of soils and natural vegetation.

Unit-II

Growth of population, Distribution and density of population; Demographic attributes; sex-ratio, literacy rate and work force; population problems and policies.

Unit-III

Characteristics of Indian agriculture and its development since independence; Agricultural region of India; Major industrial regions of India; domestic and international trade patterns; Transportation network.

Unit-IV

Evolution of administrative map of India since independence; Disputes of river water sharing amongst states with reference to SYL; Inter -linking of rivers; Terrorism problems of internal security; Population explosion and food security.

Recommender Readings:

1. Spare, O.H.K. and A.T.A. learmonth: Geography of India and Pakistan, Methuen London (first Indian Edition, 1984, Munshiram Manoharlal, New Delhi) 1967.

2. Gautam A: Advanced Geography of India, Sharda Pustak bhawan, allahabad, 2009.27

3. Sharma,T.C. and Coutinho, O: Economical and commercial Geography of India,Vikas publishing house Pvt. Ltd. New Delhi, 1988. 4. Chandna, R.C.: Geography of Population, Kalyani Publishers, 1998.

5. Tirtha, Ranji: Emerging India, Conpub. Ann Arbour, U.S.A. Michigan, 2006.

Course outcome:

On completion of the course, students are able to:

CO 1. They can know about their own countries land formation, climate and natural vegetation.

CO 2. They understand the population problems in India. Access the population policies and reaction the countries.

CO 3.Develop an idea about regionalization of India.

CO 4. Gain knowledge about agriculture region of India.

CO 5. Develop an idea about domestic and trade with other country.

(Foundation elective)

Department of Psychology

PAPER- (16PSYF1)

Psychology for Everyday Living

Credits : 2 (2Credit Theory:2 hrs/week
Total Marks: 50
External Marks: 40
Internal Marks: 10
Time Allowed: 3 Hours
Note:
a) Nine questions would be set in all. Candidates would be required to attempt five questions.
b) There would be two questions (8 marks each) from each of the four Units. Candidates would attempt one question from each Unit.
c) Question No. IX would be compulsory. It shall be based on the entire syllabus and would contain eight short answer questions of one marks each

Unit I

Science of Psychology: Definition, Goals, Basic and Applied areas of Psychology.
Self: Nature of self, Self-Regulation and Personal Growth.

Unit II

Intelligence: Definition; Theories: Theory of multiple intelligences, Triarchic theory, Emotional Intelligence.
Administration: Any one test of Intelligence/Emotional Intelligence.

Unit III

Personality: Definition;Theories: Trait and Type: Eysenck; Psychoanalytical: Freud; Humanistic: Maslow.
Administration: Any one objective test of Personality.

Unit IV

Stress and Coping: Nature of Stress; Sources; Stress reactions; Factors that influence reactions to stress.

Coping with stress: Modifying environment; Altering lifestyle.

Recommended Books:

Khatoon, N. (2012). General Psychology. Pearson: Delhi.
Baron, R.A. and Misra, G. (2016). Psychology. Pearson: Delhi.
Ciccarelli, S.K. and Meyer, G.E. (2006). Psychology. Pearson: Noida

Course outcome:

On completion of the course, students are able to:

CO1. Gain knowledge about the science of psychology Goals, basic and applied areas of Psychology.

CO2. Understand the concept of personality& different theories in syllabus.

CO3. Develop an idea about stress and their nature, sources and their effects.

CO4. Gathering knowledge assessment of Intelligence.

Semester –II

Open Elective
16ENVO1: Environmental Issues

MM. Th 80+IA 20

Time : 3 Hours.

Note: 1. Seven questions will be set in all.
2. Question No. 1 will be objective covering the entire syllabus & compulsory. The remaining six questions will be set with two questions from each unit. The candidate will be required to attempt five in total, Question I and four by selecting at least one from each unit.

Unit-1

Global Environmental Issues: Green House effect – causes and associated hazards, Ozone layer depletion – causes and associated hazards, Deforestation, Human Population Growth. Environmental problems associated with urbanization, industrialization, modernization of agriculture

Unit-2

Regional Environmental Issues: Forest and Wildlife management, desertification, reclamation of degraded land; Human intervention on wetlands, siltation and eutrophication, reclamation of wetlands, Mining and Environment, Open cast mining, Oil exploration and transportation, Deforestation and their impact on environment.

Unit-3

Pollution: Air Pollution : Causes of air pollution, Some important pollutants of air (CO, SOX, NOX and HC and Particulates) – their sources and effects on living and non-living organisms. Water Pollution: Sources of pollution of surface and ground water, Types of water pollutants. Solid Waste – Sources, characterization, disposal and management. Soil Pollution sources of soil pollution, Pollution and residual toxicity from the application of insecticides, pesticides and fertilizers; Soil erosion.

List of Recommended Books

1. Fundamentals of Environmental Science: G. S. Dhaliwal, G. S. Sangha and P. K. Raina, Kalyani Publication
2. Environmental Chemistry : A. K. De
3. Environmental Chemistry : B.K. Sharma, and H. Kaur

Course outcome:

On completion of the course, students are able to:

CO1.To understand the environmental global problems such as deforestation, desertification, depletion of ozone, global warming.

CO2. Get knowledge about environmental hazards and management.

CO3.Understand the concept of pollution & their causes, effect and remedies.

CO4. Analyze the global trend and patterns of population growth in developing countries.

CO5.To be able to identify the urban environmental problem and how to solve those problem.

CO6. Understand the concept of Solid Waste& their sources and management.

16GEO22CL2 - PRACTICAL: MORPHOMETRIC ANALYSIS

Credit: 03 (0+0+3)

End Semester Exam: 50

Lab Record: 30

Lab Test: 10

Viva-Voce: 10

Time: 4hrs

Note:

The question paper shall contain six questions in all, including three questions from each unit.

Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Unit - I

Morphometric Analysis of Drainage Basin- Types and its Geographical

Significance, Linear Aspects: Stream Ordering Based on Horton and Strahler, Areal Aspects: Stream Frequency and Drainage Density. (04 Exercises)

Unit- II

Relief Aspects: Hypsometric Curve and Integral Hypsometric Curve, Clinographic Curve, Slope Analysis- Average Slope (Wentworth's method), Relative Relief (Smith's method), Profile Analysis -Longitudinal profile. (06 Exercises)

Recommended Readings:

1. Monkhouse, F.J. and H.R. Wilkinson (1980), Maps and Diagrams, B.I. Publications, Bombay.

2. Singh, R.L. (1979), Elements of Practical Geography, Kalyani Publishers, New Delhi.

3. Singh, S. (1997), Geomorphology, Prayag Pustak Bhawan, Allahabad.

Course Outcomes:

CO1: Learn the morphometric techniques.

CO2: Know the types & significance of morphometry.

CO3: Understand the usefulness of morphometric techniques in the case of a drainage basin.

16GEO22CL1 - PRACTICAL: DIGITAL CARTOGRAPHY

Credit: 03 (0+0+3)

End Semester Exam: 50

Lab Record: 30

Lab Test: 10

Viva-Voce: 10

Time: 4hrs

Note:

The question paper shall contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Unit I

Introduction to Softwares

Basic introduction to GIS softwares; (QGIS, ArcGIS, etc.), Raster (grid format) and vector (point, line and polygon) data models.

Unit II

Mapping and Map Essentials

Dot, Choropleth and Isopleths mapping; Proportional circles, and bar diagrams in a map. Map elements- title, legend, lat. long, scale, direction, source, name of projection and layout creation.

Recommended Readings:

1. Robinsin, A., Morrison,J.L.,Muehrcke.P.C. and Guptil,S.C.(2002) Elements of Cartography, John Willey.

2. Taylor, D.R.F. (1985) Education and Training in Contemporary Cartography, John Willey.

3. Jil D., Charles W., Mohsen,M. (2016)Cartographic Grounds: Projecting the Landscape Imaginary, Prinston Press, New York

4. Cynthia,A.B. (2005) Designing Better Maps-A Guide for GIS Users, ESRI Press, New York.

5. Walford, N. (1995): Geographical Data Analysis, John Wiley & Sons, New York.

6. Nag, P. et al (1992): Thematic Cartography and Remote Sensing, Concept Publishing Co., New Delhi.

Course Outcomes:

CO1: Have knowledge about computer aided cartography.

CO2: Prepare good quality maps.

CO3: Take up career in the field of digital cartography.

M.A. Geography Semester-III Session 2016-17 Onwards

17GEO23C1: REMOTE SENSING AND GIS

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit - I

Photogrammetry: History and development, Definition and meaning; Aerial photographs-types, characteristics and Geometry, methods of determining scale; Ground coverage and overlapping; stereoscopes and stereoscopic vision; Photomosaics-types and uses; Elements of image interpretation.

Unit - II

Remote Sensing technique- Meaning, basic principles/concepts, Remote sensing system and relevance in

Geography; Electromagnetic radiations (EMR); Electromagnetic spectrum; interaction of EMR with atmosphere and Earth's surface features; Spectral reflectance; Remote sensing data; Basic principles of thermal and microwave remote sensing.

Unit - III

Remote sensing platforms- types and characteristics; Satellite orbits- Near polar and Geostationary orbits; Sensors- types, specifications and resolutions; Various artificial satellites series; Remote sensing applications in land use/land cover, urban, water resources and environment studies; Remote sensing set up and programmes in India.

Unit - IV

Geographic Information System (GIS) – Meaning and Basic concepts; Components of GIS; Functions in GIS - data input, storage, maintenance, manipulation, analysis and output; GIS data - spatial and non spatial data; Data formats - raster and vector; Data sources; Integration of Remote Sensing and GIS; Applications of GIS in Geographical studies.

Recommended Readings:

1. Chanrda, A.M. and S.K. Ghosh (2006) Remote Sensing and Geographical Information System, Narosa Publishing Houose, New Delhi.

2. Chang, Kang-tsung (2002) Introduction to Geographic Information Systems, Tata McGraw Hills Publishing Company Ltd, New Delhi.

3. Chaunial, D.D. (2016) Principles of Remote Sensing and Geographical Information System (In Hindi), Sharda Pustak Bhawan, Allahabad.

4. Joseph, George (2003) Fundamental of Remote Sensing, University's Press (India) Pvt. Ltd., Hyderabad.

5. Lillesand, T.M. and Ralph W. Keifer (2002) Remote Sensing and Image Interpretation, John Wiley & Sons, Inc., New York.

Course outcome:

On completion of the course, students are able to:

CO 1. They can know about concepts, development, platforms and types of remote sensing and GIS.

CO 2. They understand about Aerial photography and Satellite Remote Sensing.

CO 3. Know about GIS data structures.

CO 4. Develop an idea about interpretation and application of remote sensing and GIS.

CO 5. Extract the knowledge and information about geospatial analysis and database query and GIS data analysis the various concept and problems in analysed in GIS environment.

CO 6. GIS applied in the various kinds of fields, agriculture, populations, watershed planning and land use planning.

17GEO23C2 - GEOGRAPHY OF TRANSPORT

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit - I

Nature and Scope of Transport Geography, Geographic Relevance of Transportation, Transport and Development: Conceptual Frameworks; Theoretical Framework, Models of Global Relevance; (i) The Vance Model, (ii) The Rimmer Model, and (iii) The Taaffe, Morril and Gould Model.

Unit - II

The Modes of Transport: Introduction to Modes of Transport, Modal Characteristics of Roads, Railways, Ropeways and Cableways and Airways.

Unit – III

Structural Analysis of Transport Networks: Networks, Networks Graphs and Types; Measures of Individual Elements of Transportation Networks: Mileage Matrix, Nodality Matrix, Weighted Mileage Matrix, Weighted Nodality Matrix, Gross accessibility; Connectivity of Networks: Cyclomatic Number, Diameter; Alpha, Beta, Gamma, Eta, Pie, Theta and Iota indices.

Unit- IV

Development of Road Transport in Haryana: Growth and Development of Roads in Haryana, Types of Roads, Levels of Road Transport in Haryana, Levels of Road Connectivity in Haryana, Problems of Road Transport in Haryana.

Recommended Readings:

1. Bamford, C.G. and Robinson, H. (1978), Geography of Transport, Macdonald and Evans, London.

2. Bhaduri S. (1992), Transport and Regional Development, Concept Publishing Company, New Delhi.

3. Eliot Hurst, M.E. (1972), A Geography of Economic Behaviour: An Introduction, Duxbury Press, California.

4. Hammond, R. and Mc Cullagh, P.S. (1989), Quantitative Techniques in Geography; An Introduction, Clarendon Press, Oxford.

Course Outcomes:

On completion of the course, students are able to:

CO1: Understand geographic relevance of transportation.

CO2: Familiarize about various models and theories related to transport network.

CO3: Know about structural analysis of transport network.

CO 4.To study the transport and its basics, physical, economical, social and cultural and

modes of transportation, land ways, water ways, and airways and all its functions.

CO 5. Examining the transportation network, measurement of accessibility, models of network changes.

17GEO23D1- BIOGEOGRAPHY

Credit: 04 (3+1 +0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total : 100 marks

Time: 3 hrs

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Biogeography - The Development, field, functions of Biogeography; Biosphere - definition, nature, scope and composition.

Unit-II

Biogeochemical cycles- the hydrological cycle, the carbon cycle, and the oxygen

cycle, the nitrogen cycle, the phosphorous cycle and the sediment cycle.

Unit-III

Ecosystem - Meaning, types, components and functioning of ecosystem; Evolution of

living organism and factors influencing their distribution on the earth.

Unit-IV

Biomes- Meaning and types; Bio-geographical realms: Zoogeography and

Zoogeographical realms.

Recommended Readings:

1. Aggarwal, S.K. 1992. Fundamental of Ecology. New Delhi: Ashish Pub.

House.

2. Brown, J.H. and Lomolino, M.V. 1998. Biogeography. 2nd edn.

Massachusetts: Sinauer Associates, Inc.39

3. Cox, C.B., Moore, P.D., Biogeography. 2010. An Ecological and

Evolutionary Approach. 5th ed.,Cambridge: Blackwell.

4. Johnathan B. Losos, Robert E. Ricklefs eds. 2010. The Theory of Island

Biogeography Revisited.New Jersey: Princeton University Press.

5. Illics, J. 1974. Introduction to Zoogeography, McMillan, London.

6. MacDonald, Glen. 2002. Biogeography: Introduction to Space, Time and

Life. New York: John Wiley.

Course Outcomes:

On completion of the course, students are able to:

CO1: Know about various aspects of living organisms, their relationship with climate

and physical environment.

CO 2. Students can learn the scope and significance of biogeography. Also know, factors affecting the growth and distribution of natural vegetation.

CO 3. They also gather knowledge about biome, ecotone and community, types and component parts of ecosystem, bio-energy cycle, food chain and trophic level. This can help them to predict the future change of biogeographical components.

CO 4. They can illustrate the importance about bio-diversity and wetlands.

16ENVO2: Disaster Management (Open elective)

MM. Th 80+IA 20

Time : 3 Hours.

Note: 1. Seven questions will be set in all.

2. Question No. 1 will be objective covering the entire syllabus & compulsory. The

remaining six questions will be set with two questions from each unit. The candidate will be

required to attempt five in total, Question I and four by selecting at least one from each unit.

UNIT- I

Disaster- Causes and phases of disaster, Rapid onset and slow onset disasters. Nature and responses to geo-hazards, trends in climatology, meteorology and hydrology. Seismic activities. Changes in Coastal zone, coastal erosion, beach protection. Coastal erosion due to natural and manmade structures.

UNIT- II

Floods and Cyclones: causes of flooding, Hazards associated with flooding. Flood forecasting. Flood management, Integrated Flood Management and Information System (IFMIS), Flood control. Water related hazards- Structure and nature of tropical cyclone, Tsunamis – causes and physical characteristics, mitigation of risks.

UNIT- III

Earthquakes: Causes and characteristics of ground-motion, earthquake scales, magnitude and intensity, earthquake hazards and risks, Volcanic land forms, eruptions, early warning from satellites, risk mitigation and training, Landslides.

Mitigation efforts: UN draft resolution on Strengthening of Coordination of Humanitarian Emergency Assistance, International Decade for Natural Disaster Reduction (IDNDR), Policy for disaster reduction, problems of financing and insurance.

Reference Books:

1. Bolt, B.A. Earthquakes , W. H. Freeman and Company, New York. 1988

2. Carter, N,W. Disaster Management: A Disaster Manager's Hand Book, Asian Development Bank, Manila. 1992

3. Gautam Ashutosh. Earthquake: A Natural Disaster, Ashok Publishing House, New Delhi. 1994

4. Sahni, P.and Malagola M. (Eds.).Disaster Risk Reduction in South Asia, Prentice-Hall of India, New Delhi. 2003.

Course outcome:

On completion of the course, students are able to:

CO1.Understand the definition, causes and phases of disasters.

CO2.Develop an idea about factors , consequences and management of earthquake, landslide, flood.

CO3.Acquire knowledge about human induced disaster.

17GEO23CL1 - PRACTICAL: FIELD WORK

Credit: 03 (0+0+3)

Distribution of Marks

Lab Work Test: 20

Record on Lab/Field Work: 15

Viva Voce: 15

Total Marks: 50

Time: 4 hrs.

Note:

The question paper shall contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Unit-I

Field Work in Geographical studies- Role, Value and Ethics; Field techniques- Merits and Demerits; Source of Data- Primary and Secondary; Collection of data: methods of primary data collection- Observation method, interview method, through questionnaire, through schedule and other methods; Questionnaire and Schedule; Processing and analysis of data.

Unit-II

Field Work and Report writing: Identification of research problem; data collection

through field visit; Preparing research design- aims and objectives, methodology,

analysis, interpretation and writing of report.

Recommended Readings:

1. Ahuja, Ram (2003), Social Survey and Research (Hindi version), Rawat

Publications, Jaipur.

2. Basotia, G. R. and Sharma, K. K. (2002), Research Methodology, Mangal

Deep Publications, Jaipur.

3. Creswell J. (1994), Research Design: Qualitative and Quantitative

Approaches, Sage Publications.

4. Dikshit, R. D. (2003), The Art and Science of Geography: Integrated

Readings, Prentice- Hall of India, New Delhi.

5. Evans M. (1988), "Participant Observation: The Researcher as Research Tool"

in Qualitative Methods in Human Geography, eds. J. Eyles and D. Smith,

Polity.

6. Gideon Sjoberg and Roger Nett (1992), A Methodology for Social Research, RawatPublications,Jaipur.

Course Outcomes:

On completion of the course, students are able to:

CO1: Understand the basic socio-economic characteristics of the chosen area

CO2: Understand the field methods/techniques to do research work.

CO3: Build the capability of writing a report.

17GEO23CL2 - PRACTICAL-GIS

Credit: 03 (0+0+3)

Time: 4 Hours

Max. Marks: 50

Distribution of marks:

Lab work test: 30

Record on lab work: 10

Viva Voce: 10

Note:

The question paper shall contain six questions in all, including three questions from each unit.

Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Exercises will be taken on following topics:

1. Introduction to digital environment i.e. file creation and management

2. Introduction to GIS software

3. Shape file creation of point, line and polygon

4. Digitization

5. Map layout : title, legend, direction, scale, coordinate information

6. Map preparation of point, linear and areal features(atleast two exercises on each)

7. Map editing

8. Area calculation

9. Buffer analysis

10. Overlay analysis

Recommended Readings:

1. Chang, Kang-tsung., 2010, Introduction to Geographic Information Systems, Tata McGraw- Hill Education Private Limited, New Delhi.

2. Fazal, Shahab, 2008, GIS Basics, New Age International Publishers, New Delhi.

3. Heywood, lan et. Al., 2002, Geographical Information Systems (Second edition), Pearson Education, Delhi.

Course Outcomes:

CO1: Know the basics of Geographic Information System.

CO2: Use geographic information in a systematic manner by the creation and updation of maps.

CO3: Understand the representation of earth surface features with the help of maps by GIS techniques.

M.A. Geography Semester-IV Session 2016-17 Onwards

17GEO24C1: GEOGRAPHICAL THOUGHT

Credit: 04 (3+1 +0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total : 100 marks

Time: 3 hr

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Development of Geographical Knowledge: classification of knowledge; place of geography in the classification of knowledge. Relationship of geography with other natural and social sciences; subject matter of geography. Pre-scientific geographical ideas and emergence of scientific geography; influence of Kant

Unit-II

Classical Period of Modern Geography: Humboldt and Ritter; legacy of Humboldt and Ritter. Dualisms and dichotomies: physical and human, systematic and regional, and general and particular. Unification of Geography- Richthofen and Hettner. Social Origins of Environmental Determinism. Possibilism, Regional concept, Vidal de la Blache.

Unit-III

Modern Geography since 1950s: Quantitative revolution and positivism; locational analysis. Reactions to scientific positivism and development of 'human centred theories; Behavioural, humanistic and radical approaches.

Unit-IV

Beginnings of Contemporary Geography: Structuralism and structuration; post-structural and post-colonial critique; Feminist and gender geography; the post-modern perspectives in geography; geography, neoliberalism and globalisation.

Recommended Readings:

1. Dickinson, R.E. 1969. Makers of Modern Geography. London: Routledge and Kegan Paul.

2. Dickinson, R.E. 1976. The Regional Concept. London: Routledge and Kegan Paul.

Gosal, Gurdev Singh. 2015. History of Geographic Thought. Chandigarh: Panjab University.

3. Gregory, D. 1978. Ideology, Science and Human Geography. London: Hutchinson.

Gregory Ken J. 2000. The Changing Nature of Physical Geography. New York: Oxford University Press.

4. Hartshorne, R. 1939. The Nature of Geography. Lancaster, P.A.: Association of American Geography (Indian reprint: Rawat Publications)

Course outcome:

On completion of the course, students are able to:

CO1. Gain knowledge about development of geographical thought.

CO2. Develop an idea about evolution of geographical thinking and disciplinary trends in Germany, France, Britain, and United States of America.

CO3. Build an idea about between environmental determinism and possibillism, systematic and regional.

CO4. Know about the trends of geographical thoughts.

CO5. Students understand the pre history of geographical Ideas in different duration form Greeks, roman's, Arab and impact of explorations & discoveries.

CO6. Understand the modern geographical thoughts and contribution of eminent geographers.

CO7. Compare between the fundamental concepts in geography these are General Geography v/s Regional Geography, Physical Geography v/s Human Geography, and Determinism Geography v/s Possibilist.

17GEO24C2: RESEARCH METHODOLOGY

Credit : 04 (3+1+0)

End Semester Exam : 80 marks)

Internal Assessment : 20 marks

Total : 100 marks

Time : 3 hrs

Note:The question paper will have five units. Each of the first four units of question paper will containtwo questions from each unit of the syllabus. Candidate(s) are required to attempt one questionfrom each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Meaning and Purpose of Research? Types of Research; Social Science Research; Identification of Research Question and Literature Surveying; Methods and Methodology in Human Geography

Unit-II

Scientific Method in Human Geography; Analytical Steps of the Scientific Method; The Routes of Scientific Explanation: Deductive and Inductive forms of reference; Explanation in Geography: Some Problems

Unit-III

From Quantitative to Qualitative Geography; Qualitative Data Production: Interviews (Process of Interviewing, Structure interviews and informal surveys; Depth Interviewing and Working with Groups); Observation (Participant Observation and Ethnography).

Unit-IV

Process of Research Report Writing; Reference styles (Harvard, Chicago), Ethics in Research.

Recommended Readings:

1 Dey, Ian (1993), Qualitative Data Analysis, London: Routledge.

2. Eyles, John and David M. Smith (1988), Qualitative Methods in Human Geography, Oxford: Polity Press.

3. Harvey, David (1969), Explanation in Geography, London: Edward Arnold.

4. Hubbard, Phil et.al.(2002), Thinking Geographically, London: Continuum.

5. Hoggart, Keith et.al. (2002), Researching Human Geography, London: Arnold.

Course outcome:

On completion of the course, students are able to:

CO1. Examining the introduction of research, motivation in research, types of research, significance of research, research process and criteria of good research.

CO2. To understand the research problems, selecting research problems, literature review and to study the hypothesis, its types, sources, formation of hypothesis and utility of hypothesis in scientific research.

CO3 . Study about type's data and methods of data collection and study the processing and

analysis of data using different statistical methods.

CO4.Gain knowledge about interview and their types.

CO5. Understand the interpretation and report writing, techniques, precaution of SSinterpretation, layout of research report, types of reports and oral presentation mechanics of writing a research report.

17GEO24DA1: WATER RESOURCE AND MANAGEMENT

Credit : 04 (3+1+0)

End Semester Exam : 80 marks

Internal Assessment : 20 marks

Total : 100 marks

Time : 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit –I

Water as a focus of geographical interest; Hydrological cycle; factor affecting water resources- physical factors, climatic factors, geological factors.

Unit – II

Groundwater and its occurrence - consolidated formation, semi-consolidated formation and unconsolidated formation.

Unit –III

Utilization of water resources; problems of groundwater utilization- groundwater quality, groundwater salinity, waterlogging and groundwater depletion.

Unit – IV

Surface and groundwater pollution; water scarcity; water resource management- definition,

functions and strategies.

Recommended Readings:

1. Andrew A. Dzurik, (2002) Water Resources Planning, Rowman& Littlefield Publishers, Inc., Savage, Maryland.

2. Chorley, R.J. (1979) Water, Earth and Man, Methuen, London.

3. Daniel P. Loucks and E.V. Beek, (2005) Water Resources Systems Planning and Management: An introduction to Methods, Models and Applications, UNESCO.Publishing.

4. Jeet, Inder, (2005) Groundwater Resources of India- Occurrence, Utilization ands

Course outcome:

On completion of the course, students are able to:

CO1.Understand the Hydrological cycle.

CO2.Describing and analyzing the factor affecting of water resources

CO3. To know the Importance of water Resources.

CO4. Understanding the concept of groundwater,utilization and salinity

CO5. Create Awareness about ground water depletion.

17GEO24DB3 - AGRICULTURAL GEOGRAPHY

Credit: 04 (3+1+0)

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs.

Note:The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Unit-I

Definition, nature, scope, and significance of agricultural geography; approaches to the study of agriculture in geography-commodity, deterministic, systematic, and regional.

Unit-II

Factors influencing agricultural patterns-Physical factors; terrain, climate, soils and water resources; institutional factors; demographic, land holding, farm family structure, caste, religion, peasant way of life, infrastructural services; technological factors, irrigation, mechanical inputs.

Unit-III

Agricultural system of the world: Whittlessey's classification- shifting cultivation, plantation farming, Mediterranean agriculture, commercial grain farming; agricultural region-concept and techniques; Normative technique, empirical technique, single element technique and statistical technique.

Unit-IV

Nature, significance and classification of agricultural models; economic and descriptive models; food security; sustainable agriculture; WTO and Agriculture.

Recommended Readings:

1. Alexander, J.W. 1968. Economic Geography. New Jersey: Prentice Hall.

2. Grigg, D.B. 1978. The Agricultural Systems of the World: An Evolutionary Approach. Cambridge: Cambridge University Press.

3. Hussain M. 1997. Systematic Agricultural Geography. Jaipur: Rawat Publications.

Course Outcomes:

On completion of the course, students are able to:

CO1: Learn major concepts, factors affecting agricultural land use, agricultural

system of the world.

CO2: Know the agricultural systems of the world and about agricultural models.

CO3.Gain knowledge about the agricultural techniques.

17GEO24CL1 - PRACTICAL: AERIAL PHOTOGRAPHS AND ITS INTERPRETATION

Credit: 03(0+0+3)

Distribution of Marks

Lab Work Test: 30

Record on Lab Work: 10

Viva-Voce: 10

Total Marks: 50

Time: 4 hrs.

Note:

The question paper shall contain six questions in all, including three questions from each unit.

Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Exercises will be taken on following topics:

1. Aerial Photographs-Types and Characteristics;

2. Elements of Air Photo Interpretation;

3. Stereo Vision Test, Orientation of stereo model under Mirror Stereoscope;

Determination of scale on an aerial photograph;

4. Measurement of height of an object on single vertical aerial photograph;

5. Parallax bar measurement and height determination;

6. Preparation of Index map;

7. Preparation of stereogram, stereotriplet and mosaic from aerial photographs;

8. Interpretation of Aerial photographs - Identification, mapping and interpretation of

Natural and Cultural features (at least three exercises);

9. Land use/Land cover studies on aerial photographs;

10. Urban studies on aerial photographs-Change detection, Residential area study

to attempt any three questions. All questions carry equal marks.

Recommended Readings:

1. Chauniyal, D.D. (2016), Principles of Remote Sensing and Geographical

Information System (Hindi version), Sharda Pustak Bhawan, Allahabad.

2. Lillesand, T.M. and Kiefer, R.W. (2002), Remote Sensing and Image

Interpretation, John Wiley and Sons, New York.

3. Rampal, K.K. (1999), Handbook of Aerial Photography and Interpretation, Concept Publishing Co., New Delhi.

4. Sabins, F.F. (1986), Remote Sensing-Principles and Interpretation, Second

Edition, WH Freeman and Co., New York.

5. Sharma, J.P. (1996), Prayogic Bhoogol, Rastogi Publicatoins, Meerut.

6. Wolf, Paul.R.(1983), Elements of Photogrammetry ,2nd ed.,McGraw-Hill,New

York,1983.

Course Outcomes:

CO1: Learn air photo interpretation techniques.

CO2: Understand the usefulness of air photo interpretation techniques in

geography.

CO3: Enhance the knowledge about the applications of aerial photographs in

various fields of geography.

17GEO24CL2 - PRACTICAL- SATELLITE IMAGES AND ITS INTERPRETATION

Credit: 03(0+0+3)

Distribution of Marks

Lab Work Test: 30

Record on Lab Work: 10

Viva-Voce: 10

Total Marks: 50

Time: 4 hrs.

Note:

The question paper shall contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Exercises will be taken on following topics:

1. Kinds of satellite images

2. Study of a satellite image - annotation (IRS - IB, IRS- IC etc.)

3. Visual interpretation of a satellite image.

4. Separating physical and cultural features on an image.

5. Identification of objects on panchromatic, true colour and FCC images and their comparison.

6. Identification and mapping of landuse/land cover on satellite images.

7. Study of thermal image and interpretation of various features.

8. Study of Radar image and interpretation of various features

9. Acquisition of open source satellite data from USGS / GLOVIS.

10. Acquisition of open source satellite data from BHUVAN (ISRO).

Recommended Readings:

1. Avery, T.E., and G.L. Berlin,1992, Fundamentals of Remote Sensing and Airphoto

2. Interpretation, 5th ed.,Macmillan, New York.

3. Lillesand, T.M. and Kiefer, R.W. ,2002, Remote Sensing and Image

Interpretation, John

4. Wiley and Sons, New York.

5. Sabins, F. F,Jr., 1997, Remote Sensing: Principles and Interpretation,3rd ed.,

W.H. Freeman, New York.

6. Star,J. L.,J.E.Estes,andK.C.McGwire,1997,Integration of GIS and Remote

Sensing, Cambridge University Press.

Course Outcomes:

CO1: Understand the different kinds of satellite image interpretation.

CO2: Create information about earth surface features from variety of satellite

images.

CO3: Know the mapping of information from satellite images.

M.A. Programme outcomes

PO1.Acquireing Knowledge of Physical Geography:
Student will gain the knowledge of physical geography. Student will have a general understanding about the geomorphological and geotechnical process and formation. They will be able to correlate the knowledge of physical geography with the human geography.

PO2.Conduct Socio economic Survey Project:
They will be eligible for conducting socio economic survey project which is needed for measuring the status of development of a particular group or section of the society.

PO3. Application of GIS and modern Geographical Map Making Techniques:
They will learn how to prepare map based on GIS by using the modern geographical map making techniques.

PO4. Ability of Problem Analysis:
Student will be able to analyse the problems of physical as well as cultural environments of both rural and urban areas. Moreover they will try to find out the possible measures to solve those problems.

PO5. Development of Communication Skill and Interaction Power:
After the completion of the project they will be efficient in their communication skill as well as power of social interaction. Some of the students are being able to understand and write effective reports and design credentials, make effective demonstrations, and give and receive clear instructions.

PO6. Understand Environmental Ethics and Sustainability:
Understand the impact of the acquired knowledge in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

PO7.Life-long learning:
Identify the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of societal and environmental change.

PO8.Govt Department:
A geographer can avail job opportunities in government departments (like planning and developmental commissions, forestry, environmental,and disaster management departments etc), travel agencies, manufacturing firms, text book and map publishers, media agencies, etc.

PO9.Urban and regional planner:
Concerned with planning, housing and Development projects with respect to their location and utilization of available land-space.

PO10.GIS specialist:
City governments, county agencies and other government agencies and private groups are often in need of experienced GIS professionals.