ANDHRA UNIVERSITY: VISAKHAPATNAM

B.A / B.Sc. Geography (Pass Course)

Paper No.	Title	Internal Assessment	External Assessment	Maximum Marks	Total Marks	Time
Semester-I						
101	Geography of India	25	75	100	100	3 Hours
102	Maps and Scales (Practical)	10+10 (Record+ Viva-Voce)	80	100	100	3 Hours
Semester-II						
201	Physical Geography-I	25	75	100	100	3 Hours
202	Representation of Physical Features (Practical)	10+10 (Record + Viva-Voce)	80	100	100	3 Hours
Semester-III						
301	Physical Geography-II	25	75	100	100	3 Hours
302	Representation of Climatic Data (Practical)	10+10 (Record + Viva-Voce)	80	100	100	3 Hours
Semester-IV						
401	Human Geography	25	75	100	100	3 Hours
402	Map Projections (Practical)	10+10 (Record + Viva-Voce)	80	100	100	3 Hours
Semester-V						
501	Economic Geography	25	75	100	100	3 Hours
502	Introduction to Remote Sensing	25	75	100	100	3 Hours
503	Maps and Diagrams (Practical)	10+10 (Record + Viva-Voce)	80	100	100	3 Hours
504	Field Survey on Socio-Economic Aspects (Practical)	25 (Viva-Voce)	75 (Field Report)	100	100	3 Hours
Semester-VI						
601	Introduction to Geographical Information system (GIS)	25	75	100	100	3 Hours
602	Quantitative Methods	25	75	100	100	3 Hours
603	Remote Sensing (Practical)	10+10 (Record + Viva-Voce)	80	100	100	3 Hours
604	Local Field Visit (Practical)	25 (Viva-Voce)	75 (Field Report)	100	100	3 Hours

Note:- 1. Semesters from I to IV Teaching Hours per Week: **Theory-4 Hours: 4 Credits.**
Practicals-3 Hours: 2 Credits.

2. Semesters V to VI Teaching Hours per week and per paper: **Theory- 3 Hours: 3 Credits. Practical- 3 Hours: 2 Credits.**

THEORY PAPERS

Paper 101 Geography of India

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: Question 1 is compulsory and comprises of ten short questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.

Unit-I

1. India: Location, relief structure and drainage systems.
2. Climate, soils, natural vegetation.

Unit-II

1. Population: distribution, density, growth and composition.
2. Migration, human settlement types and urbanization.

Unit-III

1. Land resources, irrigation, regional variations in cropping pattern, Green revolution and problems of Indian agriculture.
2. Energy and mineral resources: coal, petroleum, hydroelectricity and nuclear energy, iron ore, manganese and mica.

Unit-IV

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

Unit-V

1. 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.
5. Spate, D H K and ATA Learmonth : Indian and Pakistan – Land, People and Economy, Methnen and Company, London, 1967.

Paper 201 Physical Geography – I

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: Question 1 is compulsory and comprises of Ten short questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.

Unit-I

1. Definition, Nature, scope of Physical Geography.
2. Geological time scale and rocks.

Unit-II

1. Earth movements; organic, epeirogenic, earth quakes and volcanoes.
2. Wegner's theory of continental drift and Plate tectonic theory.

Unit-III

1. Weathering; causes and its types.
2. Mass-movements; causes, its types and impacts.

Unit-IV

1. Concept of cycle of erosion; cycle of erosion by W.M.Davis

Unit-V

1. Process of Wind, River, Underground water, Glaciers and Seawaves.

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.

Paper 301 Physical Geography-II

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: *Question 1 is compulsory and comprises of Ten short answer type questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.*

Unit-I
1. Weather and Climate; Origin, composition and structure of atmosphere.
2. Insolation, Global heat budget, Horizontal and vertical distribution of temperature, inversion of temperature.

Unit-II
1. Atmospheric pressure- measurement and distribution, pressure belts, planetary winds, Monsoon and Local winds.

Unit-III

1. Humidity- measurement and variables, evaporation, condensation, precipitation forms and types and distribution.

Unit-IV
1. Climate classification by Koppen; Climatic change and global warming.

Unit-V
1. Configuration of oceanic floors, Temperature and Salinity of ocean, Land and water distribution.
2. Tides, waves, ocean currents and 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.

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Paper 401 Human Geography

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: *Question 1 is compulsory and comprises of Ten short answer type questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.*

Unit-I

1. Nature scope and Historical development of Human Geography.
2. Division of Mankind: Spatial distribution of race and tribes of India; concept of man-environment relation.

Unit-II

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

Unit-III

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

Unit-IV

1. Distribution and density of world population, population growth, fertility and mortality patterns.
2. Concept of over, under and optimum population; Population theories: Malthus.

Unit-V

1. Rural settlements: Meaning, classification and types. Urban settlements: Origin, classification.
2. 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.
5. Chandna, R.C. : A Geography of Population : Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi, 1986.

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6. DeBlij, H. J. : Human Geography, Culture, Society and Space, John Wiley, New York, 1996.

7. Fellman, J.L. : Human Geography-Landscapes of Human Activities, Brown and Benchman Pub., USA, 1997.

8. Global Environment Outlook: Earthscan, London, 2000.

9. McBride, P.J. Human Geography; Systems Patterns and Change, Nelson, UK and Canada, 1996.

10. Michael, Can: New Patterns : Process and Change in Human Geography, Nelson, 1996.

Paper 501 Economic Geography

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: *Question 1 is compulsory and comprises of Ten short answer type questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.*

UNIT-I

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.

UNIT-II

1. World natural resources: Types, bases and classification.
2. Conservation and utilization of natural resources.

UNIT-III

1. Spatial distribution of food (rice and wheat), commercial (cotton and sugarcane) and plantation crops (tea, rubber and coffee).
2. Ferrous and non-ferrous resources, distribution and production of coal, iron ore, petroleum and natural gas.

UNIT-IV

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

UNIT-V

1. 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.

Paper-502 Introduction to Remote Sensing

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: *Question 1 is compulsory and comprises of Ten short answer type questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.*

UNIT-I

1. Introduction to Remote Sensing, Definition, Basis of Remote sensing, Electromagnetic spectrum, stages in remote sensing.

UNIT-II

2. Platforms of Remote Sensing, type of satellites, Types of Sensors.

UNIT-III

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

UNIT-IV

1. Introduction to Aerial Photographs: their advantages and types.
2. Elements of aerial Photo interpretation.

UNIT-V

1. Applications of Remote sensing techniques in Geographical aspects.

Suggested Readings:

1. John R. Jensen 2009. Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (India Edition) New Delhi,
2. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi,
3. Lillesand and R.W.Kiefer,2005. Remote Sensing and Image Interpretation, John Wiley and Sons.
4. Pritvish Nag, and M.Kudrat 1998. Digital Remote Sensing, Concept Publishing Company, New Delhi,
5. M.Anji Reddy 2008. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
6. Telugu Academy 2011. B.A/B.Sc, Sudura Grahaka Sastram-Bowgolika samachara vyavasta

Paper-601 Introduction to Geographical Information System (GIS)

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: *Question 1 is compulsory and comprises of Ten short answer type questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.*

UNIT-I

1. Introduction to Geographical Information System: Definition, purpose, advantages.

2. History of GIS.

UNIT-II

1. Software and hardware requirements.

2. Classification of Software and Hardware.

UNIT-III

1. Data capture/Input, Data Storage, Retrieval, analysis and output.

2. GIS data types: Spatial and attribute data-Raster and Vector data structure.

UNIT-IV

1. GPS, Definition, GPS satellites and its Applications

UNIT-V

1. Remote sensing and GIS integration.

2. Application of GIS in various fields of geography.

Suggested Readings:

1. M.Anji Reddy 2008. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
2. Telugu Academy 2011. B.A/B.Sc, Sudura Grahaka Sastram-Bowgolika samachara vyavasta.
3. Burrough P.A. 1986. Principles of Geographic Information Systems for Land Resources Assessment. Oxford University Press, New York.
4. Fraser Taylor D.R. 1991. Geographic Information System. Pergamon Press, Oxford.
5. Star J. and Estes 1994. Geographical Information Systems: An Ingtroduction. Prentice Hall, Englewood, Cliff, New Jersey.

Paper-602 Quantitative methods

Maximum Marks : 100
External Assessment: 75
Internal Assessment: 25
Time : 3 Hours

Note: *Question 1 is compulsory and comprises of Ten short answer type questions to be answered in 15-20 words. There will be eight long questions, two from each section. The candidate has to answer one question from each section. All five questions carry equal marks.*

UNIT-I

1. Introduction to quantitative methods.

UNIT-II

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

UNIT-III

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

UNIT-IV

1.Correlation – Rank Co-relation.

UNIT-V

1. Application of quantitative methods in Geographical Aspects.

Suggested Readings:

1. Aslam Mahmood 1993. Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi.
2. R.B. Mandal 2014.Statistics for Geographers and Social Scientists, Concepts Publishing Company and Pvt, Ltd, New Delhi.
3. Zamir Alvi 2014. Statistical Geography, Methods& Applications, Rawat Publications, Jaipur.
4. Sing R.L 1992. Elements of Practical Geography, Kalyani Publishers.

PRACTICALS

Paper 102 Maps and Scales

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Maximum Marks: 100
Time : 3 Hours

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Distribution of Marks
Exercises = 80
Record File = 10
Viva-voce = 10

Note: There will be four questions in all and candidate has to attempt three exercises selecting at least from each unit.

1. Introduction to Cartography.
2. Maps and their types.
3. Scales.   Exercises
(i) Methods of Expressing a scale   2
(ii) Conversion of Statement of Scale into R.F. and vice-versa.   1
(iii) Plain Scale (Km and mile)   1
(iv) Comparative Scale   2
(v) Diagonal Scale   2
(vi) Measurements of distances and areas of Maps   2

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.L. Singh and P.K. Dutt (1968), Elements of Practical Geography, Students Friends, Allahabad.
4. Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Viksa Publication House.

Paper 202 Representation of Physical Features

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Exercises   = 80
Record File   = 10
Viva-voce   = 10

Note: There will be four questions in all and candidate has to attempt three exercises selecting at least from each unit.

1. Introduction to Topographical Sheets
   India and adjacent countries
2. Conventional Signs
3. Methods of representing relief-Spot heights, Bench Marks, Lear coloring and Hill Shading.
4. Representation of Topographical features by contours.
   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)
5. Interpretation of Physical Features in SOI maps.

<u>Suggested Readings</u>:

5. F.J. Monkhouse and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London
6. L.R. Singh and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
7. R.I. Singh and P.K. Dutt (1968), Elements of Practical Geography, Students Friends, Allahabad.
8. Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Viksa Publication House.

Paper – 302 Representation of Climatic Data

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Exercises   = 80
Record File   = 10
Viva-voce   = 10

Note: There will be four questions in all and candidate has to attempt three exercises selecting at least from each unit.

1. Collection of Climatic data.
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.
2. Climograph (wet and dry places) - 2 Exercise.
3. Weather map Interpretation (January & July) - 2 Exercise.

Suggested Readings:

1. Singh, R.L., 1979. Elements of Practical Geography, Kalyani Publisher, New Delhi.
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,
6. Pal. S.K. 1998: Statistics for Geoscientist- Techniques and Applications, Concept Publication, New Delhi,.
7. Sarkar, A.K 1997: Practical Geography-A Systematic Approach, Orient Longman, Calcutta,.

Paper –402 Map Projections

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Exercises   = 80
Record File   = 10
Viva-voce   = 10

Note: There will be four questions in all and candidate has to attempt three exercises selecting at least from each unit.

1. Introduction to Map Projection: Characteristics of latitudes and longitudes lines.

1.   Cylindrical projections: Characteristics, applications and drawing;
    (i) Simple cylindrical projection
    (ii) Cylindrical equal area projection.

3. Conical Projections: Characteristics, applications and drawing.
    (i)   Simple conical projections with one standard parallel
    (ii)   Simple conical projection with two standard parallel
4. Zenithal Projections: Characteristics, applications and drawing.
    (i) Polar Zenithal Equidistant Projection.
5. Characteristics, applications and drawings of Sinosoidal Projection

Suggested Readings:

1. Mishra R.P. and Ramesh A. 1999. Fundamentals of Cartography, Concept Publishing Company, New Delhi.
2. Robinson, A.H. et.al. Elements of Cartography, John Wiley & Sons, 1995.
3. Singh, R.L., 1979. Elements of Practical Geography, Kalyani Publisher, New Delhi.
4. Khan, A.A. 1996. Text Book of Practical Geography, Concept, New Delhi,.
5. Monkhouse, F.J. and Wilkinson, H.R1994. Maps and Diagrams, Methuen, London,
6. Steers, J.B. Map Projections; University of London Press, London.

Paper 503 Maps and Diagrams

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Exercises = 80
Record File = 10
Viva-voce = 10

Note: There will be four questions in all and candidate has to attempt three exercises selecting at least from unit I and II, while unit III is compulsory.

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

   · Choroschematic maps

   · Chorochromatic maps- 2 Exercise

(ii) Quantitative distribution Maps

   · Isopleth maps-3 Exercises

   · Choropleth maps-3 Exercises

   · Dot maps-3 Exercises

   · 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
5. John R. Jensen, Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (India Edition) New Delhi, 2009.
6. Lillesand and R.W.Kiefer, Remote Sensing and Image Interpretation, John Wiley and Sons, 1994.

Paper 504 Field and Survey Report Socio-economic aspects

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Field Report=75
Viva-voce = 25

I. Survey
1. Conducting Field Survey in local area
2. Framing objectives
3. Collection of Data-Primary/Secondary
4. Selection of Samples and Sampling Techniques.
5. Analysis

II. Report Writing
Introduction, Statement of the Problem, Review of the literature, Methodology, Objectives, Hypothesis, Study area, Interpretation, Summary and Conclusion and Bibliography

Suggested readings:

1. Ananta Narayan Raman and Jaya Shree Nimmagadda. A Hand book of Research Process.
2. Bajpal S.R. methods of Social Survey and Research.
3. Gautam, N.C. Development of Research Tools.

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Paper-603 Remote Sensing

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Exercises   = 80
Record File   = 10
Viva-voce   = 10

Note: There will be four questions in all and candidate has to attempt three exercises selecting at least from unit I and II, while unit III is compulsory.

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. Techniques of Visual interpretation.
6. Visual interpretation of satellite images-LULC and line features.

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
5. John R. Jensen, Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (India Edition) New Delhi, 2009.
6. Lillesand and R.W.Kiefer, Remote Sensing and Image Interpretation, John Wiley and Sons, 1994.

Paper 604 Local Field Visit

Maximum Marks: 100
Time : 3 Hours

Distribution of Marks
Field Report=75
Viva-voce = 25

I. Survey
1. Conducting Field Trips
2. Physical and cultural landscapes
3. Human life and occupation
4. Cropping pattern.
5. Irrigation and water harvesting methods.

II. Report Writing

Suggested readings:

1. Ananta Narayan Raman and Jaya Shree Nimmagadda. A Hand book of Research Process.
2. Bajpal S.R. methods of Social Survey and Research.
3. Gautam, N.C. Development of Research Tools.