B.Sc. Geography

A.VEERIYA VANDAYAR MEMORIAL SRI PUSHPAM COLLEGE (AUTONOMOUS), POONDI, THANJAVUR DIST.

Question Pattern for UG and PG Programmes for students to be admitted during 2014 – 2015 and afterwards

Total Marks: 75

QUESTIONS PATTERN

SECTION – A
(Question 1 to 10)

10 x 2 = 20 Marks

1. Short Answer Questions

2. Two Questions from each units (All are answerable)

SECTION – B
(Question 11 to 15)

5 x 5 = 25 Marks

1. 5 Paragraph type questions with "either / or" type choice.

2. One question from each unit of the Syllabus.

3. Answer all the questions.

SECTION – C
(Question 16 to 20)

3 x 10 = 30 Marks

1. 5 Essay type questions – any three are answerable.

2. One questions from each unit of the Syllabus.

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Semester	Subject Code	Title Of The Paper	Hours Of Teaching / Week	No. of Credits
I	**14U1GYT1**	√ℜ∫ς⌐ √∫ℜ⌡BΔ (χ∫↔Σ∫ ƒ, E→‖>, Σςƒ∫Δ, √∫ℜ⌡B κ↔∫ς→)	**6**	**3**

⟨→: 1   ¬⊗Φ∞⊥

…Σ↔Δ: 18

1. √↔ς∴o≡∫ ∂∫ ∫⟨ς∫ □ ⌡∫κ∫®℘ς □ ∫ς®E♥ ¬℘∫τ>Δ

   (]∫κο>ςBΔ ξ⌐κμΔ)

2. Σς∴ℜ∫_ ∫σΘ∫ □ >τ∝⇑…>[

   (℘∫κ⇑ □∫>λ[E⊕♥A)

3. ℘ς↔]Bς∫ □ •>⊆]↔♥ ℘ςƒ_∫⊥

   (•>⊆]↔♥ ¬℘∫ ∴, •>⊆]↔♥ ℘λ∫ •>⊆]↔⇑ >ς∫Δ,

   •>⊆]↔ …>σλ[μ])

4. ℘ς↔]>ς⊗[□ T↔⇑>ςΦ

5. ℘®∫ℜ…∫ς®∫ ƒ ∫_Bς□ •⊆>↔Δ □Σς∫

   (♦≡…∫ χ⌡∫ ∴ ♦[Σς…ƒ, ♦≡∫⊥ Σς∫ (>τ∝Σς∫, γ⊆]↔ς Σς∫,

   ∫[♠ƒ Σς∫, ∴∫⌈Bς⟨ Σς∫))

6. ∫κ↔ξ⇑μ □ ∫σ↔ς⇔[‖> (∫ςυ→Δ ∫σΘ∠Δ ∴⟩♥ ℘]_∫⌈)

⟨→: 2   χ∫↔Σ∫ ƒ

…Σ↔Δ: 18

1. …∫®∫σ □ √↔ς∫ ℘ςκΔ (1 ξ>_ 15 κ∫↔)

2. …∫®∫σ □ ℘B□≡∫⊥ ¬>ςƒ∫Δ

⟨→: 3   E→‖>

…Σ↔Δ: 18

1. …∫®∫σ □ ζ↔_ ¬∫ς∫ℜζΔ κς♠Δ℘ς∫ (1 ξ>_ 10 κ∫↔)

2. …∫®∫σ □ ∴…♠ς↔⇒E>Δ ξ⌐κμΔ

$\{\rightarrow: 4$ $\sum_\varsigma f | \Delta$

     $\dots \sum \leftrightarrow \Delta: 18$

     $\zeta. \neg \kappa. \wp \varsigma \lceil \bullet \heartsuit \div \leftrightarrow \therefore \lfloor B[\square \neg | \langle > \therefore A \Uparrow > \lceil$

$\{\rightarrow: 5$ $\sqrt{\lceil \Re \rfloor B \kappa \leftrightarrow \lceil \varsigma \rightarrow$

     $\dots \sum \leftrightarrow \Delta: 18$

     $E \rightarrow || >, A] \spadesuit \Delta, \sum_\varsigma f | \Delta, |\sigma| >, \chi| \leftrightarrow \sum | f$

B.Sc. Geography

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I	**14U1GYE1**	**PART – II ENGLISH PROSE, POETRY AND COMMUNICATION SKILLS**	**6**	**3**

Objective

➢ To initiate the Students to understand English through Prose, Poetry and Basic Communicative Grammar

Unit – I

    1) The Running Rivulets of Man,   2) Parliament is Marking Time,

    3) The Lady in Silver Coat,   4) Mr. Applebaum at Play.

Unit – II

    1) The Feigning Brawl of an Imposter,   2) Thy Life Is My Lesson,

    3) Solve The Gamble,   4) The Stoic Penalty.

Unit – III

    1) Nobility In Reasoning,   2) Malu the Frivolous Freak,

    3) Bharath! Gird Up Your Loins!   4) Honesty is the Cream Of Chastity

Unit – IV

    John Milton – On His Blindness.

    Oliver Goldsmith – The Village Schoolmaster.

    William Wordsworth – The Daffodils.

    P.B.Shelley – Ozymandias.

    Keats – La Belle Dame Sans Merci.

    Hopkins – Thou Art Indeed, Just Lord.

Unit – V

    Parts of Speech, Nouns, Pronouns, Conjunctions, Adjectives, Articles, Verbs, Adverbs, Interjection – sentence.

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Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I	**14U1GYC1**	**GEOMORPHOLOGY – I**	**6**	**3**

Unit I   Origin of the Earth - Nebular theory, Tidal hypothesis, Binary star theory and Big bang theory - Structure of the Earth – Inner core, outer core, Mantle, Interior of the earth – Barysphere, pyrosphere, lithosphere.

Unit II   Classification of rocks – igneous rocks, sedimentary and metamorphic rocks -   Earth movements – plate Tectonics, Major plate, plate movements, Exogenetic and Endogenetic movements – Folds and Faults – Types of Folds, Types of faults, Joints.

Unit III   Volcanoes – Types of Volcanic systems - Volcanic structure, Valeonic eruptions, the Geographic distribution of Voleanoes. Earthquakes – Types of earthquakes, causes of earthquakes, distributions of earth quakes. Wegner's continental drift – Isostasy.

Unit IV   Major landforms - mountains, plateaus and plains - types and distribution of mountains, plateaus and plains – Desert – Types of deserts – Sandy Desert – Stony desert, The Hot deserts, the coastal desert, The mid-latitude desert, The ice and snow deserts.

Unit V   Weathering – types of weathering – Mechanical weathering, Frost weathering temperature weathering, Chemical Weathering, Solution, Mass movement (or) Mass wasting, Soil formation characteristics, types of soils distribution of soils and soil profile.

Reference Books:
1. Balbir Singh Negi, Physical Geography, S.J. Publications Meerut, 1993
2. Das Gupta, A., and Kapoor, A.N, Principles of Physical Geography, S.C. Chand & Company Ltd, 2001
3. Strahler A.H and Strahler A.N – Modern Physical Geography, New York, John Wiley and Sons. INC, 1975
4. Robinson .H., Physical Geography, Mac Donald and Evans Ltd, 1971
5. Thorn Bury. D., - Principles of Geomorphology, Wiley Eastern Ltd, New Delhi, 1984
6. Lobeck. A.K., An Introduction to the study of Landscapes, Mc Graw –Hill Book company, 1939
7. Sharma. V.K., Earth Surface Process and forms, Tata Mc Graw – Hill Publishing Company Ltd, New Delhi, 1986.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I	**14U1GYC2**	**CLIMATOLOGY**	**6**	**3**

Unit I Atmosphere – origin, composition of the atmosphere and structure – Layered structure of atmosphere, Modern views regarding the structure of atmosphere. Insolation: Distribution of insolation – Atomospheric depletion of solar radiation - heat budget.

Unit II Temperature of the Atmosphere – Heat and temperature, processes of heat energy transfer – Heating and cooling of the atmosphere – controls of temperature factors affecting distribution – seasonal horizontal and vertical – normal lapse rate – temperature inversion.

Unit III Air pressure – variations in air pressure and weather – Pressure gradient, -Pressure variations – diurnal and seasonal, Basic atmospheric pressure patterns – vertical structure of cydones and anticyclones, general characteristics of cyclons and anticyclones – vertical variations is air-pressure wind – controlling factors, general circulation planetary wind belts, seasonal winds – Monsoon winds – original and characteristics – Local wind, Land breeze and sea breeze El Nino – La Nina.

Unit IV Humidity – source of atmospheric moisture – the hydrological cycle, Humidity and temperature, Humidity measurements, Evaporation, Factors affecting rate of evaporation, condensation – Forms of condensations – clouds – types precipitation forms – air masses – tropical and temperature cyclones – thunderstoms – jet streams, toranado.

Unit V Classification of climate – Basic classification, Koppen's Thornthwaite's classification – Trewarthais classifications, weather and forecasting methods – benefits of forecasting.

Reference Books

1. Lal. D.S., Climatology, Chatianya Publishing House, Allahabad, 1990
2. Howard J. Chritchfield, General Climatology, Prentice – Hall of India Pvt Ltd, 1987.
3. Glen. T.Trewartha and Lyes H.Horn An Introduction to Climate, International student Edition, Mc Graw Hill International Book Company, 1980.
4. Patterson – Climatology.
5. Barry & Chorley – Atmosphere, weather and climate – Methuen 1968.

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Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I	**14U1GYA1**	**ALLIED STATISTICS**	**5**	**4**

Unit I   Meaning and Scope of Statistics – Collection of data – Primary and Secondary – Methods of Primary data collection – Sources of Secondary Data – Classification and Tabulation.

Unit II   Formation of Frequency distribution – Presentation of data by Diagrams and Graphs – Bar diagram, Pie diagram, Pictogram and Cartogram – Histogram, Frequency polygon, Frequency curve and Ogives.

Unit III   Measures of Central tendency – Mean, Median, Mode, Geometric Mean and Harmonic Mean – their computation – merits and demerits.

Unit IV   Measures of Dispersion– Range, Quartile Deviation, Mean Deviation, Standard Deviation and Co-efficient of Variation. Skewness – Meaning – Measures of skewness – Karl Pearson's and Bowley's co-efficient of Skewness.

Unit V   Curve fitting – Principles of Least squares – Fitting of Straight line – Fitting of Parobola – Fitting of power curves.

Book Recommended

1. *Statistical Methods – S.P.Gupta.*

2. *Business Mathematics and Statistics – P.Navaneetham*

3. *Statistics– R.S.N.Pillai and V.Bagavathi.*

4. *Statistics–Theory, Methods & Application- D.C. Sancheti and V.K.Kapoor.*

5. *Applied General Statistics– Frederick– E.Croxton and Dudley J.Cowden.*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I & II	**14U2GYAP1**	**Allied Practical Statistics (NS)**	**3 + 3**	

1. Frequency distribution.

2. Mean, Median, mode for the following distribution.

3. Quartile deviation

4. Moving average method for 5 years.

5. Method of least square.

6. Co-efficient of correlation between x and y

7. Goodness of fit Test – ψ^2 distribution.

8. F –Test equality of two population variances

9. Lagrange's Interpolation.

10. One may classification.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I & II	**14U2GYS1**	**Skill Based Elective ENVIRONMENTAL GEOGRAPHY**	**1 + 1**	

Unit I   Spectrum of environmental geology, global changes in the Earth system and climate Anthropogenic impacts on the atmosphere, local impacts changing the landscape, role of geology in understanding atmospheric change.

Unit II   Nitrogen oxide and ozone layer, cycling of carbon, records of pale temperature in ice cores of glaciers, palaeo– temperature changes during the glacial ages, glacial ages, last ice age, causes of glaciating, limestone deposits in geological sequence.   Cenozoic climate extremes, evolution of life especially the impact on human evolution.

Books Recommended:-

1. Valdiya, K.S., 1987: Environmental Geology – Indian Context – Tata McGraw Hill.
2. Keller, E.A., 1978: Environmental Geology – Bell and Howell, USA.
3. Bryant, E., 1985: Natural Hazards – Cambridge University Press.
4. Patwardhan, A.M., 1999: The Dynamic Earth System – Prentice Hall.
5. Subramaniam, V., 2001: Textbook in Environmental Science – Narosa International.
6. Bell, F.G., 1999: Geologial Hazards – Routledge, London.
7. Smith, K., 1992: Environmental Hazards – Routledge, London.

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Semester	Subject Code	Title Of The Paper	Hours Of Teaching / Week	No. of Credits
II	**14U2GYT2**	√‖ ƒℜ∣ς⌠ √⌈ℜ⌡BΔ – ℘B[ξ∣ ⊕⇑ >τ∝ −√⌈ℜ∣□ κ↔⌈ς→	**6**	**3**

⟨→: 1

…∑↔Δ: 18
1.]∫Θς♠⊗Δ ℘⊆>⌈□ …>κς↔Δ□ …∣ς⟨→]∫♥ ℘]∣Δ
2.]∫∑ςϒℜ∣↔⊗⌈□…>κς↔Δ□6⌈γΔ]∫ξ∣⊕□]∫⇑>ς∫ ƒ∣Δ□
                ]∫ℜ∣∫∣ς∅⌈℘]∣Δ
3. •⊆>↔⌈□…>κς↔Δ□]∫κς™⌈ ℘]∣Δ (√‖⊕∣…⟨ς ‖⊗⊆> √[℘Δ …)
4. ∴ς⟨ℜ∣κς⊗∣⌈□]∫κς⊗∣Δ□ ∂∫®℘⇑μ

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⟨→: 2

…∑↔Δ: 18
1. ¬℘⟩Bς∝κς⌈□]∫¬∴ςα□ 4. ∴ς⟨ℜ∣≡∣®∣
2. ∑Δ∴ς∝κς⌈□]∫κςΦ¬∴ςα□
                (χB⌈κ⊕ ϒB∫∑⌈Δ … ξ>_ 10 ℘ςƒ_∣⊥)
3. γ∫ ƒς⊥□]∫♥ ℘ς∣κ
                (∴ς⌈∣α⇑]≡∣⊥ …. ξ>_ 10 ℘ςƒ_∣⊥)
4.]∫∴≡∣∣Bς∝κς⌈□¬℘⟩B]∫¬∴ςα (ξ>_ 10 ℘ςƒ_∣⊥)

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⟨→: 3

…∑↔Δ: 18
1.]∫ϑ⌈⌈□]∫∴⊆]↔Δ□ (ξ>_ >⊆]↔Δ□∣_σ: 10 ℘ςƒ_∣⊥)
2. ζ∴↔ζ∫℘↔⌈□∗♠ς®EBΔ∣∴÷⊥∣⟨⇑ >τ∝ (ξ⌋κμΔ)
3.]⟨ƒ↔ς⊗♥ ℘ℜ ∣σ↔ςB⌈□ζυ⊕ς∫ℜ ζ⊕κ⇒E□∑ς®∣κ⟨Δ
4. T↔∴ςξMκ⌈□]∫ℜ∣ςκ∧⌈∣⌈Δ℘∣Δ□AB κς♥A
5. ζ□≡ζ∣∴⟩>ς[⊗ς∫A□ξ∣∣ψ[⊗>∣Δ (1 ξ>_4 ℘ςƒ_∣⊥)

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⟨→: 4 ℘B[ξ∣⊕⇑>τ∝
       …∑↔Δ: 18
       κςℜ∫B∂∴♥A□A□⟨⇓Eκ∣∣∣⊥□κοτζΔ, κο τ∣ς √ƒ≡∣⊥□ ♦⌋⇑μ♥÷∣ω
ℵℜ∣Δ⌈∣↔, ⟨∣↔, ω∣↔ …κ→℘ς∣∣⊥□¬⊗ςυ∣∣⟨♥ ÷⟩⇑μ♥ ¬℘ς∫⊥∣ςβΔ ξ∣⊕□Ω→⇑
>υ ζ∫Ξ∣∣⊥□⊗⟩Bς♠ >τ∝ κ∣κΔ ∂⁄>_.
       ¬⊗ς_οB_□¬⊗ς_κ∣∣□√⌈ℜ∣□κ∣∣□√⌈ℜ∣Bκ∣∣□¬℘B⌈⇓¬⊗ς_□√∣ζ⁄□
∣ς↔□Δ□∂→¬℘ς∫®¬℘B⌈(¬℘ς∫⊥, √ƒΔ, ∣ς⌈Δ, E∣♠, ζ□Δ, ¬>ςα_)□σ∣♠⇓¬⊗ς
_□√∣ƒ⇓¬⊗ς_□χ)⇓¬⊗ς_□ξυ→□♦⇓⊗Δ□σζ]∣⊥□√∣ƒΩ∣⌈□>[σ∣♠□÷⊕σ∣♠□
¬>⟩Ω∣⌈σ∣♠□ζ⁄♥Aσ∣♠□κ⌋κ∣∴].

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⦃→: 5   √⌈ℜ│☐ κ↔⌈ς→

…∑↔Δ: 18

√⌈ℜ│☐ κ↔⌈ς→ ☐ >τ∝⇑ μ│ ⊕ ¬κ≠Ξ│.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
II	**14U2GYE2**	**PART – II ENGLISH EXTENSIVE READERS AND COMMUNICATIVE SKILLS**	**6**	**3**

Objective

➢ To impart language and communicative skills through short stories, one act plays and communicative grammar

Unit – I

K.A.Abbas – The Sparrows

O'Henry – The Cop and the Anthem.

Guy de Maupassant – The Necklace.

R.K.Narayan – Engine Trouble.

Unit – II

Anton Chekov – The Proposal

O'Henry – While the Auto Watts

Unit - III

Saki – The Death Trap

Mahesh Dattani –The Girl who touched the stars

Claudia I.Haas – The Cellphone Epidemic

Unit – IV

Tense, Question Tag, Dialogue Writing, Paragraph Writing, Adjectives, Adverb

Unit – V

Voices, Degress of Comparison, Direct and Indirect

Book Prescribed:

Unit IV & V – Communicative grammar by the Department of English

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
II	**14U2GYC3**	**GEOMORPHOLOGY – II**	**5**	**5**

Unit I   Denudation – Agents - Work of river – Erosional work of rivers, processes of fluvial Erosion, Transportation of Rivers, Depositional work of rivers, Landforms produced by Rivers. Erosional Landforms; River valleys, potholes, waterfalls, Rapids, Interlocking spurs, Structural Beneches, River Terraees, Meanders and Oxbowlakes, Incised Meanders, Peneplains. Depositional Lanforms. Alluvial Fans and Cones, Flood plains, Natural Levees, Delter, Ideal conditions for formation, structure, growth, classification.

Unit II   Glaciers: Development of Glaciers – Types of Glaciers, Mountain (or) Valley Glaciers, Piedmont Glaciers, continental Glaciers, Thermal classification of Glaciers, Glacial movements. Erosional Landforms: small features, striations, polished surface, Grooves, Friction creeks, Glaciers Mills. Deposition Landforms: Glacial Drft, Jill, Stratified Drift Outwash, Moraines, Till plain, Drumlins.

Unit III Characteristics of Arid Regions – Major Landforms of Arid Region – Bdson, playa, Desert Pavements, Bajades – Erasional Lanforms: Deflation Hollows (blow outs) Desert povements, ventifacts, pedestal rocks, yardang, Zeugen, Depositional Landforms – Ripples, Sand Ridges, Large scale forms – Sand Shadows and Sand Drifts, Sand sheets Sand Levees, whale – backs, Sand Dunes, Sand Sea (or) Ergs, Dust and Loess Deposits.

Unit IV   Underground water and karst topography – Erosional Landforms: Sinking Creeds, Karst Valley, Natural Tunnels and Bridges. Spebothem and other cave deposits, Calk Landscape.

Unit V   Coastal Environment, Wave Structure – Types of wave – Erosional Lanforms: Sea Cliffs, Beaches – Depositional Landforms – Sand Bars, Lagoons, Mud flats, Spits, connecting Bars, Tombolos, etc. Johnson's Classification of coast.

Reference Books
1. *Balbir Singh Negi, Physical Geography, S.J. Publications Meerut, 1993*
2. *Das Gupta, A., and Kapoor, A.N, Principles of Physical Geography, S.C. Chand & Company Ltd, 2001*
3. *Strahler A.H and Strahler A.N – Modern Physical Geography, New York, John Wiley and Sons. INC, 1975*
4. *Robinson .H., Physical Geography, Mac Donald and Evans Ltd, 1971*
5. *Thorn Bury. D., - Principles of Geomorphology, Wiley Eastern Ltd, New Delhi, 1984*
6. *Lobeck. A.K., An Introduction to the study of Landscapes, Mc Graw –Hill Book company, 1939*

7. *Sharma. V.K., Earth Surface Process and forms, Tata Mc Graw – Hill Publishing Company Ltd, New Delhi, 1986.*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
II	14U2GYCP1	**Core Practical - REPRESENTATION OF RELIEF AND MAP MAKING**	**4**	**4**

Unit I   Maps and scales – Types – Construction and uses.

Unit II   Measurements of distances and areas.

Unit III   Enlargement and reduction – Map combination.

Unit IV   Directions and bearings – Types of North.

Unit V   Representation of relief – Spot heights, bench marks – Contour diagrams of relief features – Interpolation of contours.

Reference Books

1.   *Gopal Singh – Map work and practical geography , Vikas Publishing House .*

2.   *Ishtiaq – Practical geography , published by Jawahar publishing and distributors, 1994*

3.   *Monkhouse. F.J., and H.R Wilkinson – Maps and Diagrams , B.I publications , 1952*

4.   *Zamir Alvi – A text book of Practical Geography , Vikas Publishing house Pvt ltd , 1994*

5.   *Zulfequar Ahmad Khan. M.D., Text boom of Practical Geography, concept publishing company, New Delhi, 1998.*

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Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I & II	**14U2GYAP1**	**Allied Practical Statistics (NS)**	**3 + 3**	**2**

1. Frequency distribution.

2. Mean, Median, mode for the following distribution.

3. Quartile deviation

4. Moving average method for 5 years.

5. Method of least square.

6. Co-efficient of correlation between x and y

7. Goodness of fit Test – ψ^2 distribution.

8. F –Test equality of two population variances

9. Lagrange's Interpolation.

10. One may classification.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
II	**14U2GYA2**	**Allied Statistics – II**	**5**	**4**

Unit I: Correlation – Meaning and Definition – Types of Correlation – Scatter diagram, Karal Pearson's Co-efficient of correlation – Spearman's Rank Correlation – Regression in two variables.

Unit II: Interpolation and Extrapolation – Methods of Interpolation – Lagrange's Method – Parabolic Curve Method – Extrapolation.

Unit III: Statistical Inference – Tests of Hypotheses – Tests of Significance for small samples – The Assumption of Normality – Students t-Distribution – Properties of t-Distribution – Application of the t-Distribution.

Unit IV : ψ^2 Test and Goodness of Fit – Introduction - ψ^2 Defined – Degrees of Freedom – The Chi-square Distribution – Constants of ψ^2 Distribution – The ψ^2 Test when the Degrees of Freedom Exceed 30 – Alternative Method of Obtaining the value of ψ^2 – Conditions for Applying ψ^2 Test, Uses of ψ^2 Test – Additive property of ψ^2.

Unit V: F-Test and Analysis of Variance – The F-Test or the variance Ratio Test Applications of F-test Analysis of variance – Assumptions in Analysis of variance – Technique of analysis of variance – Coding of Data.

Text Books:

1. P.A.Navnitham, ***Business Mathematics and Statistics***, Jai Publishers, Trichy, 2007. UNIT – I: Chapter 12.
2. S.P.Gupta, Statistical Methods, Thirty – fourth Edition, 2005.
   UNIT – II Volume I : Chapter 15
   UNIT – III Volumes II : Chapter 3
   UNIT – IV Volumes II : Chapter 4
   UNIT – V Volumes II : Chapter 5

References:
1. S.C. and Kapoor V.K. "**Fundamentals of Mathematical Statistics**" – Sultan Chand & Sons 2002.

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Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
I & II	14U2GYS1	**Skill Based Elective ENVIRONMENTAL GEOGRAPHY**	1 + 1	2

Unit I   Spectrum of environmental geology, global changes in the Earth system and climate Anthropogenic impacts on the atmosphere, local impacts changing the landscape, role of geology in understanding atmospheric change.

Unit II   Nitrogen oxide and ozone layer, cycling of carbon, records of pale temperature in ice cores of glaciers, palaeo– temperature changes during the glacial ages, glacial ages, last ice age, causes of glaciating, limestone deposits in geological sequence.   Cenozoic climate extremes, evolution of life especially the impact on human evolution.

Books Recommended:-
1. Valdiya, K.S., 1987: Environmental Geology – Indian Context – Tata McGraw Hill.
2. Keller, E.A., 1978: Environmental Geology – Bell and Howell, USA.
3. Bryant, E., 1985: Natural Hazards – Cambridge University Press.
4. Patwardhan, A.M., 1999: The Dynamic Earth System – Prentice Hall.
5. Subramaniam, V., 2001: Textbook in Environmental Science – Narosa International.
6. Bell, F.G., 1999: Geologial Hazards – Routledge, London.
7. Smith, K., 1992: Environmental Hazards – Routledge, London.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching / Week	No. of Credits
III	**14U3GYT3**	│ς♥÷B≡│⊥, │®‖↔│⊥, √⌈ℜ⌡B κ↔⌈ς→	**6**	**3**

〈→: 1　│ς♥÷B≡│⊥ 1

…Σ↔Δ: 18

1. E⌈♥℘]│ς↔Δ □ A│ς⌈ℜ │ς⌡ ƒΔ □ │ς♠_ κ〉

2. ∴⎩…∴‖⌈ □ ∴⌈⌈κ♠Δ Aℜ│ │ς│>

3. ⌈κ│ E⊆>ς∴⎩□ σ∴│⌈B⌈ √Δ℘│Δ

4. │Δ℘↔ς∴ςB□Δ□ •⊆>↔ │ς⌡ ƒΔ □ ⌈ƒς∴⎩♥ ℘ƒ⌈Δ (84 ℘ςƒ_│⊥)

〈→: 2　│ς♥÷B≡│⊥ 2

…Σ↔Δ: 18

1. ¬℘〉B A↔ςΔ □ √‖〈Bς[ζ│ ∴ς⊕ ΣςB♠ς⌈ A↔ςΔ (27 ℘ςƒ_│⊥)

2. Σ〈¬κ⌡ ℘ς□•BΔκ↔ │ς⌡ ƒΔ (ξ>_ 20 ℘ςƒ_│⊥)

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B.Sc. Geography

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III	**14U3GYE3**	**PART – II ENGLISH SHAKESPEARE, EXTENSIVE READERS AND COMMUNICATIVE SKILLS**	**6**	**3**

Objective
> ➤ To introduce the language of the world renowned dramatist and novelist to enhance the vocabulary and communicative skills of the learners.

Unit – I

Funeral Oration – Julius Caesar

Trial for a Pound of Flesh – The Merchant of Venice

Unit – II

He Kills Sleep – Macbeth

A Real Love at First Sight – Twelfth Night

Unit – III

When the Moor Kills, "So Good a wife" – Othello

In Love is a "Midsummer Madness" – Tempest

Unit – IV

The Mayor of Casterbridge (Abridged) – Thomas Hardy

Unit – V

Note making, Hints Developing, Expansion of Ideas and Proverbs, Sequence of Sentences Synonyms, Antonyms.

Book Prescribed:

Unit–I   : II & III: Selected scenes from Shakespeare.

Unit IV   : The Mayor of Casterbridge Abridged by E.F.Dodd

Unit V   : Communicative Grammar.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III	**14U3GYC4**	**OCEANOGRAPHY**	**5**	**5**

Unit I   Distribution of Land and sea – Surface configuration of the ocean floor: continental shelf, continental slope, Continental Rise, Abyssal plain, mid ocean and oceanic frenches – Relief of Indian, Atlantic and Pacific Oceans.

Unit II   Temperature – Process of heating and cooling **–** Temperature variations – insolation, Nature of the surface, Land Breese and Sea – Breeze, seasonal effect, controlling factors – Distribution vertical and Horizontal distribution.

Unit III   Circulation of oceanic waters – Waves – Types of waves, Attrition, Long short drift, corrosion, Abrasion, Backwash, swash, Dominant wave. Tides and currents – Semidiurnal tides, Dirunal tides, mixed Tides, Spring and Neaptider. Wind Drifted surface currents, Equatorial current Cool – Cold currents, Powerful currents, Currents of Atlantic, Indian and Pacific Oceans.

Unit IV   Marine resources – Coral reef – Chemical composition of oceans, Gases in Oceanic and sea water, Types and distribution – Mineral wealth, other Marine resources.

Unit V   Marine deposits – Sources – Classification – Marine Sediments – Distribution of Sediments.

Reference Books

1. Lal. D.S., Oceanography, Chatianya Publishing House, Allahabad, 1990.
2. Grant Gross – Oceanography, Prentice – Hall International Editions, 1987.
3. Sharma.R.C., and M.Vital – Oceanography for Geographers , Chatianya Publishing house , Allahabad , 1987.
4. Paul R. Pinet – Oceanography, West Publishing Company, 1992.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III	**14U3GYC5**	**HUMAN GEOGRAPHY**	**4**	**4**

Unit I   Scope and content – Town, Village definition – Relation of Man with land in Urban areas, scope of Urban, Relationship between Urbanization and Economic Development, Regional development of Urban. Growth and spread of Medieval Towns, Types of origin, cycle of Urban development – Recent trends in human geography.

Unit II   Concept of culture – Small town, Major town, city, Metropolis, Functional classification of towns – Administrative Towns, commercial towns, Market towns, mining towns, Industrial towns, cultural town, Residential towns.

Unit III   World cultural regions – Ecological models of Urban Structure – Concentric Zone theory, Central Business district, Zone in Transition. Residential zone etc. Von Thunen's Model, Food gathers, Aunters – Cultivators, Nomads, Levels of Culture in Twentieth Century.

Unit IV   Human Races – Classification – Distribution –growth of population, density of population elements of Urban system – Rural Urban Ratio, pattern of Urbanization, Metropolitioncities of India – Delhi, Mumbai, Calcultta, Urban region of India – North Indian Plains, Southern India, Island Regions.

Unit V   Population– Distribution of Rural and Urban population – Growth of Rural and Urban population – Problems of over population and under population– Migration–Types, Causes, Consequences of Migration etc.

Reference Books:

1. Majid Husain - Human Geography-Rawat Publications 1994.
2. Gillian C.Morgan – Human and Economics Geography, Oxford University Publications 1999.
3. Aime Vincent Perpillou - Human Geography, Longman Group limited London 1977.
4. C.Daryll Forde - Habitat, Economy and Society, Methuen Publishers 1977.
5. Chanda R.C. - Popualtion Geography, Kalyani Publishers.
6. Ray-M.Northam - Urban Geography, John Wiley and sons Publications – 1979.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III	**14U3GYA3**	**ALLIED - CARTOGRAPHY – I**	**5**	**4**

Unit I   Nature, Scope and Content of cartography – History of cartography - Branches of cartography.

Unit II   Maps: Classification of maps - Uses of maps – Limitations.

Unit III   Map scale – Types: Plain Linear, Statement, Diagonal and comparative - Representative Fraction - Uses.

Unit IV   Shape, size and direction dimension of the earth – plane, spherical and rectangular systems – latitudes and longitudes – International Date Line – time zones – direction.

Unit V   Map Projections: general principles and classification - Cylindrical, Conical and Zenithal projections – Choice of map projections.

Reference Books

1. *Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.*

2. *Erwin and Raisz – Principles of Cartography, Mc Graw Hill book company 1962*

3. *Robinson.H.,Elements of Cartograhphy, John Wiley and Son INC,1960*

4. *Monkhouse – Map and diagrams – methuan 1971*

5. *RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III & IV	**14U4GYAP2**	**ALLIED PRACTICAL – CARTOGRAPHY (NS)**	**2 + 2**	**-**

Unit I   SOI Toposheet layout and numbering – 2 inch to 1 mile, 1 inch to 1 mile, 1 inch 4 miles, 1: 250,000, 1:50,000, 1: 25,000 and OSM series – Conversion.

Unit II   Latitude, longitude, distance and time – Latitude and distance – Longitude and time – International date line.

Unit III   Drawing conventional signs and symbols of SOI toposheets, British Ordnance survey sheets – USGS sheets – Comparison.

Unit IV   Drawing International Beaufort Notations – Weather elements.

Unit V   Map symbolization – qualitative and quantitative symbols of point, line and area.

Reference Books

1. *Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.*

2. *Erwin and Raisz – Principles of Cartography, Mc Graw Hill book company 1962*

3. *Robinson.H.,Elements of Cartograhphy, John Wiley and Son INC,1960*

4. *Monkhouse – Map and diagrams – methuan 1971*

5. *RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III & IV	**14U4GYS2**	**Skill Based Elective – II ECONOMIC GEOGRAPHY**	**1 + 1**	

Unit I   Scope and content of economic geography – basic concepts – nature of resource – Farming in the world – Shifting – subsistence commercial and plantation farming – mixed farming – horticulture – market gardening – production and distribution of rice, wheat, sugarcane, coffee, tea, cotton and jute – majorforest types and distribution, conservation of forests.

Unit III   World minerals mining – Iron ore – bauxite- manganese – copper – power resources coal, petroleum, natural gas, atomic minerals – major region of hydel power generation – conservation of power resources – manufacturing industries of the world – localization factor – Iron and steel – textiles – chemicals – automobiles – ship building.

Reference

1. Economic Geography – J.L. Guha and Pr.Chatterjee.
2. Economic and Commercial Geography – R.N.Dubey and L.R.Sing.
3. Economic Geography, S.K.Sadhukon.
4. Economic Geography – Dr.M.R.Chandhran.
5. Economic and Commercial Geography – K.K.Khanna and V.I.Gupta.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching / Week	No. of Credits
IV	**14U4GYT4**	⊗≡| √⌈ℜ⌋BΔ – ∂⊕ √⌈ℜ⌋BΔ – ¬⊗Δ¬∴ςα – √⌈ℜ⌋B κ↔⌈ς→	**6**	**3**

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Semester	Subject Code	Title of The Paper	Hours of Teaching/ Week	No. of Credits
IV	**14U4GYE4**	**PART – II ENGLISH ENGLISH FOR COMPETITIVE EXAMINATIONS**	**6**	**3**

Objective

➢ To prepare the learners for competitive examinations and to know the fundamentals of practical communication.

Unit – I

      Grammar – Number, Subject, Verb, Agreement, Articles, Sequence of Tenses, Common Errors.

Unit – II

      Word Power - Idioms & Phrases, one word substitutes, Synonyms, Antonyms, Words we often confuse, foreign words & phrases, spelling.

Unit – III

      Reading & Reasoning – Comprehension, Jumbled Sentences.

Unit - IV

      Writing Skills – Paragraph, Precis Writing, Expansion of an idea, Report Writing, Essay, Letters, Reviews (Film & Book)

Unit – V

      Speaking- Public speaking, Group Discussion, Interview, Spoken English.

Prescribed Text:

1. V.Saraswathi, English for Competitive Examinations, Chennai, Emerald Publishers, 2000.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
IV	**14U4GYC6**	**WORLD REGIONAL GEOGRAPHY**	**5**	**5**

Unit I Asia - Physical, features, Socio – economic sat-up - Regional studies of South Asia, South East Asia, East Asia, West and Central Asia – Climate.

Unit II Europe: boundary – Physical features, climate, - Socio - economic features - Regional studies of British Isles, New South Wales, North Ireland, European Union, Eastern Europe and Mediterranean Realm.

Unit III North and South America: Physical feature –Climate - economic and demographic set-up - Regional Studies - North America – Physical Feature, Climate, Population, Latin America – Physical features, Climate, South America – Physical feature, Climate, South America – Physical feature, Climate, New England, Brazil, Chile and Peru.

Unit IV Australia and New Zealand – boundaries Physical feature, Climate, Social economic set-up – Regional studies of Australia – boundaries, Physical features, Climate - New Zealand and Pacific Islands.

Unit V Contemporary issues in world geography: Globalization, W.T.O. and World Summit, UN Environment programmes (UNEP), UN Development Programmes, Population, distribution, density, Environment and Sustainable development.

Reference Books

1. Heintzelman and Highsmith – World Regional Geography, Prentice – Hall, India – 1965.

2. Don R.Hoy – Geography and Development a World Regional Approach, Collier Mac Millan Publisher – 1978.

3. Goh-Cheng leong– Certificate Human and Economic Geography, Oxford University Publications – 1995.

4. Jackson, R.H. and Hudman, L.E.: World Regional Geography: Issues for Today. John Wiley, New York, 1991.

5. Cole, J.: A Geography of the World's Major Regions, Routledge, London, 1996.

6. Ward, P.W. and Miller, A.: World Regional Geography: A Question of Place. John Wiley, New York, 1989.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
IV	**14U4GYCP2**	**Practical – CLIMATIC DIAGRAMS AND WEATHER MAPS**	**4**	**4**

Unit I   Diagrammatic representation of climatic data – line and bar diagrams – Construction and uses.

Unit II   Hythergraph, Climograph and Climatographs – Construction and uses.

Unit III   Wind roses diagram and Ergo graph - Construction and uses.

Unit IV   Rainfall Dispersion diagrams - Construction and uses.

Unit V   Weather symbols - Station model - Weather map interpretation.

Reference Books

1. *M. Ishtiaq- Practical Geography-published by Jawahar publishers and Distributors-1994.*
2. *F.J. Monkhouse and H.R. Wilkinson-Maps and Diagrams-B.I.Publications-1952.*
3. *MD.Zulfequar Ahmad Khan-Text Book of Practical Geography-Concept Publishing Company, New Delhi-1998.*
4. *Gopal singh-Map work and practical geography- Vikas publishing House pvt.Ltd-1996.*
5. *R.L Singh – Elements of Practical Geography, Kalyani publishers, 1979*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
IV	**14U4GYA4**	**ALLIED – CARTOGRAPHY – II**	**5**	**4**

Unit I   Map symbolization – Point, line and area symbols – Qualitative and Quantitative representation.

Unit II   Map compilation and generalization - Map design and layout – Principles and constraints – Formats of map.

Unit III   Lettering – style, form and size – Mechanics of lettering – Positioning of letters.

Unit IV   Map production and reproduction – Methods – Instruments – Duplicating process – Printing process.

Unit V   Computer assisted cartography – basic concepts – components - Applications.

Reference Books

1. *Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.*

2. *Erwin and Raisz – Principles of Cartography, Mc Graw Hill book company 1962*

3. *Robinson.H.,Elements of Cartograhphy, John Wiley and Sons INC,1960*

4. *Monkhouse – Map and diagrams – methuan 1971*

5. *RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III & IV	**14U4GYAP2**	**ALLIED PRACTICAL – CARTOGRAPHY (NS)**	**2 + 2**	**-**

Unit I   SOI Toposheet layout and numbering – 2 inch to 1 mile, 1 inch to 1 mile, 1 inch 4 miles, 1: 250,000, 1:50,000, 1: 25,000 and OSM series – Conversion.

Unit II   Latitude, longitude, distance and time – Latitude and distance – Longitude and time – International date line.

Unit III   Drawing conventional signs and symbols of SOI toposheets, British Ordnance survey sheets – USGS sheets – Comparison.

Unit IV   Drawing International Beaufort Notations – Weather elements.

Unit V   Map symbolization – qualitative and quantitative symbols of point, line and area.

Reference Books

1. *Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.*

2. *Erwin and Raisz – Principles of Cartography, Mc Graw Hill book company 1962*

3. *Robinson.H.,Elements of Cartograhphy, John Wiley and Son INC,1960*

4. *Monkhouse – Map and diagrams – methuan 1971*

5. *RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
III & IV	**14U4GYS2**	**Skill Based Elective – II ECONOMIC GEOGRAPHY**	**1 + 1**	

Unit I   Scope and content of economic geography – basic concepts – nature of resource – Farming in the world – Shifting – subsistence commercial and plantation farming – mixed farming – horticulture – market gardening – production and distribution of rice, wheat, sugarcane, coffee, tea, cotton and jute – majorforest types and distribution, conservation of forests.

Unit III World minerals mining – Iron ore – bauxite- manganese – copper – power resources coal, petroleum, natural gas, atomic minerals – major region of hydel power generation – conservation of power resources – manufacturing industries of the world – localization factor – Iron and steel – textiles – chemicals – automobiles – ship building.

Reference

1. Economic Geography – J.L. Guha and Pr.Chatterjee.
2. Economic and Commercial Geography – R.N.Dubey and L.R.Sing.
3. Economic Geography, S.K.Sadhukon.
4. Economic Geography – Dr.M.R.Chandhran.
5. Economic and Commercial Geography – K.K.Khanna and V.I.Gupta.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYC7**	**GEOGRAPHY OF RESOURCES**	**6**	**5**

Unit I Concept of resources - Resource elements: Soil – types of soil, distribution of soil, Water, Means of irrigation, types of irrigation, distribution of water Resources – Land – types of land – Mountain, platean Hills, Plains, Coastal areas - Forest –types of forest, distribution of forest, utilization of forest, Agriculture – Green Revolution, types of Agriculture, distribution, production Major crops. Rice, Wheat, tea, Rubber, Sugarcane, Cotton, jute. Minerals – Iron, Coal, Energy Resources – Power Resources, renewable, Non renewable resources.

Unit II Land – types – Conservation – Soil: Erosion – land forms, conservation – Water resources – Irrigation purpose, power – multipurpose project – transport – types of transport, water transport- air transport, Land transport, Railways – Merits and Demerits – Fisheries – Types, Major fishing grounds of the world – problems.

Unit III Natural vegetation: Forest – Types of forest – Products– Conservation – Grassland: Types (Savanna, Steppe) – Distribution – Livestock – Cattle rearing, Dairy production (milke and Milk product) White revaluation – Agriculture – Intensive, Extensive, Wet and dry, Mixed farming, Commercial Plantation and Food crops.

Unit IV Energy – Thermal water, atomic –Water and Nuclear power – conventional energy - solar energy, wind energy – Minerals – iron coal, ferrous Non ferrous - manganese, mica, copper and bauxite.

Unit V Major industries - Locational factors - iron and steel, automobile, shipbuilding and textile industries – Transport Trade – Internal and international Trade.

Reference Books
1. Prithvish Roy & Somnath mukerjee – Economic geography an appraisal of resources, new central book agency, culcutta-700 009.

2. V.K. Gupta – Economic and Commercial Geography, Sultan Chand and Sons, 1977.

3. S.K. Sadhukhan – Economic Geography an Appraisal of resources, S.Chand and company Ltd.-1982.

4. A.Das Gupta – Economic and Commercial Geography, Mukhrjee and Co. Pvt.Ltd.-1978.

5. M.C.Agarwal – Commercial Geography, Himalaya Publishing House, 1981.

6. B.S.Negi – Economic and Commercial Geography of the World, S.Chand and Co.Ltd. 1980.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYC8**	**AGRICULTURAL GEOGRAPHY**	**5**	**5**

Unit –I   Nature, scope, significance and development of agricultural geography – Approaches to the study of agricultural geography - Sources of agricultural data – Major crops – Types of Agricultural, Food crops, Commercial crops, plantation crop, Oil seeds etc.

Unit II   Determination of agricultural land use - cropping pattern – crop concentration - crop combination - Green Revolution – Five year plants, Utilization of New technology, hybrid verities of seeds, production of Agriculture, impacts and consequences.

Unit III   Land use and land capability – Von Thunen's theory of agricultural location - Whittlesey's classification of agricultural regions.

Unit IV   Agriculture in India - Land use and shifting Cultivation, Rotation cropping pattern - Specific problems in Indian agriculture and their management five year planning, - Agricultural Policy in India.

Unit V   Contemporary issues – Flood Natural Hazars, Soil erosion, Food, Nutrition and hunger, Food Security, drought and food aid programmes – environmental degradation, role of migration, fertilizers, insecticides and pesticides.

Reference Books

1. Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970.
2. Grigg, D.B.: The Agricultural Systems of the World. Cambridge University Press,New York 1974.
3. Hartshorn, T.N. and Alexander, J.W.: Economic Geography. Prentice Hall, New Delhi,1988.
4. Mannion, A.M.: Agriculture and Environment Change. John Wiley, London, 1995.
5. Morgan W.B. and Norton, R.J.C.: Agricultural Geography. Mathuen, London, 1971.
6. Singh, J. and Dhillon, S.S.: Agricultural Geography, Tata McGraw Hill Pub., NewDelhi, 1988.
7. Tarrant, J.R.: Agricultural Geography. Wiley, New York, 1974.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYC9**	**Core SETTLEMENT GEOGRAPHY**	**6**	**6**

UNIT I Nature, scope and content - Definition of urban and rural settlements - Salient features of human settlements in India – Meaning of Settlements various types of rural settlements, various house types in India – The relationship between – house types with relief climate and building – materials urban areas as given by census of India. Functional classification of urban settlements in India, Distributional patterns of rural urban settlements.

UNIT II Settlement site and structure: internal morphology - external form - house types – Rural settlement types – Dispersed settlements physical factors, cultural factors and Historical factors, Building materials used for roofs, cities according to functions, factors affecting the location of settlements, positive factors.

UNIT III Spatial Organization: size, spacing and hierarchy of settlements; emergence and characteristics of urban settlements – The processes patterns and functions of human settlement functions of settlements, patterns of settlements – urban forms and functions.

UNIT IV Urbanization - Classification of urban settlements - Urban morphology and landuse structure - CBD - periphery - urban expansion – Urban and rural settlement geography – mansrelationship with his environment, Rural settlements involved primary activities farming, lumberning and mining. Site factors for settlements physical environment depend in water supply – Relief, Soils Shetter, Defence.

UNIT V Settlement - Environment relationship, global and regional pattern; policies and programmes – Urban growth problems are – housing water – Supply, Transport, pollution solutions to the urban – problems urban theory – urban zoing – CBD – The linner city, the suburbs – The rural urban fringeslumt squatter settlements.

Reference Books:
1. Chisholm, M.: Rural Settlement and Land Use, Hutchinson, London, 1970.
2. Clout, R.D. :Rural Geography, Pergamon Press, London,1970.
3. H. Carter- The Study of Urban Geography, Edward Arnold, London
4. J.H.Johnson- Urban Geography of Towns, Hutchinson University Library, London
5. Mayer & Kohn – Readings in Urban Geography, Central Book Depot, Alahabad
6. *Northam – Urban Geography. John Wiley & Sons Inc; 2nd edition 1979*

B.Sc. Geography

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYEL1A**	**Major Elective GEOGRAPHY OF INDIA**	**4**	**4**

Unit I   Location – continent of unity in diversity- relief – drainage-climate-soil – types and distribution - natural vegetation- types and distribution.

Unit II   Irrigation - need for irrigation – Types: canal – tank - well - Multipurpose projects.

Unit III   Agriculture – types - major crops- rice, wheat, millets, cotton, oilseeds, tea, coffee and jute – Agricultural regions - problems – Animal husbandry.

Unit IV   Minerals – coal, oil, iron ore, manganese , bauxite, copper – power resources – hydel, thermal and atomic - industries - iron and steel, cement, textile, sugar , paper, ship building – small scale and cottage Industries.

Unit V   Population growth – distribution- density and problems – Urbanization - Transport and Trade.

Reference Books

1. *Ranjit Tirtha and Gopal Krishnan – Geography of India, Rawat Publications, Jaipur-NewDelhi-1996.*

2. *Prithvish Nag and Smita Sengupta- Geography of India, Concept Publishing Company – New Delhi-1999.*

3. *C.B. Mamoria- Geography of India, Shivalal Agarwala & Company- Agra-1975.*

4. *R.L. Singh – India A Regional Geography, National Geographical Society of India, 1971.*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYEL1B**	**Major Elective** **GEOGRAPHY OF TOURISM – I**	**4**	**4**

Unit I   Tourism – Definition – Development of tourism – Model of Tourism: Origins, Destinations, Transit – Factors of tourism.

Unit II   Physical, Historical, Socio – Cultural, Economic, Environmental, Education, Political, Recreational, Natural Wonders.

Unit III   Types of tourism: Tourism, Eco Tourist, adventure tourism, Heritage tourism, Pilgrimages – Measurement of tourism Phenomena

Unit IV   The need for measurement – Problems of measurement – Method of measurement – tourist statistics

Unit V   Components of tourism industry – travel, hospitality, visitors services – distance, modes, cost – culture and hospitality – food, beverages – stay and accommodation.

References

1. Maneet Kumar (1992). "Tourism Today", Kanishka Publishing House, Delhi.
2. Michael M.Coltman (1989) "Tourism Marketing", VanNostrand Reintold, New York.
3. Fodder Hoddles, Fodder's Guide of India, Hoden and Strongton.
4. Rosemary Burton (1995). Travel Geography, Pitman Publishing, London.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYEL2A**	**Major Elective GEOGRAPHY OF TAMILNADU**	**4**	**4**

Unit I   Location – Relief – Drainage – Climate - Soil and Natural Vegetation.

Unit II   Irrigation: Types, Distribution and Issues – Multi-purpose projects

Unit III   Agriculture: Rice – Cotton – Sugarcane – Coffee - Tea – Agricultural regions.

Unit IV   Minerals: Iron – Coal – Bauxite – Industries: textile Industries – sugar Industry – cement Industry – Industrial regions.

Unit V   Population: Growth, Distribution, Density and Problems – Urbanization - Transport and Trade.

Reference Books

1. *R.L. Singh – India Regional Geography – VBS publishers and Distributors Ltd., NewDelhi – 1995.*

2. *Dr. A. Ramesh and P.S. Tiwari – Basic Resource Atlas of TamilNadu , University of Madras -1983*

3. *Poduval R.N– Foodgrain Economy of TamilNadu Problems and Prospects, Emerald Publishers, Chennai – 1987.*

4. *Velappan D– Economic Development of TamilNadu – Emeral Publishers, Chennai – 1986.*

5. *Ranjet Tirtha & Gopala Krishnan – Geography of India–Rawat Publications, Jaipur – 1996.*

6. *Prithvish Nag & Smitha Sengupta – Geography of India–Concept publishing company – NewDelhi – 1999.*

7. *Gopal Singh – Geography of India – Athma Ram & Sons, Delhi –1988.*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYEL2B**	**Major Elective** **BASICS OF GIS**	**4**	**4**

Unit I   GIS: Definition – History – Components: hardware – software – data – people.

Unit II   Geographic data: Point, line and area – Spatial data and non spatial data – Georeferencing.

Unit III Data model: Raster and vector – Data conversation – Digitization – Errors.

Unit IV   GIS analysis: Measurements - Query – Overlay – Buffer analysis.

Unit V   GNSS/GPS: Definition – History – Segments – Uses.

Reference Books

1. *Ball D.R. – Babbage – Geographic Information System for Defence Application – Pergamon Press – Australia*

2. *Barrette & Burough – Principles of GIS for Land Resource Assessment – Clarendon Press – Oxford*

3. *Bidhanesh Misra – Geographic Information System & Economic Development.*

4. *Ian Heywod, Sarah Cornelines, An Introduction to Geographical Information System I Addison – Wesley, Longman Ltd, 2000*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
V	**14U5GYNME**	**Non Major Elective DEMOGRAPHIC STUDIES**	**4**	**4**

Unit I Demography – Scope, contents and trends, relevance of Demogrraphic studies – and its applications – Population Information – Census and Sample surveys – Fertility Services – Household surveys – Study of Demographic structre – Population distribution and structure – Age – sex variation. – Ethnicity – Literacy structure – occupationi differences – Income variation.

Unit II Growth dynamics – Growth estimatioin – Impacts of death and birth growth – Population movements – rural – urban movements, intra – natinal and internation almigratioins – migration and growth – Population dynamics – Demographic transition – mortality factors – Population changes – Demographci Planning and problems: Problems – Planning in Developed and Developing countries – Policies - population resources – Population geography in the 21 stcentruy.

Refernces

1. Clark. I., (1984), Geography of Population: Approaches and Applications. Pergamon Press. Oxford, U.K.
2. Chandna, R.C. (1984). A Geography of Population, Kalyani Publishers, New Delhi.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	**14U6GYC10**	**Core GEOINFORMATICS**	**6**	**6**

UNIT I   Remote Sensing - Definition-Types – Aerial Photography - Types of Photographs – Elements of Photo Interpretation – Interpretation of Aerial photo – General procedure for photo Interpretation – Preliminary stage – Detailed Examination, Interpretation stage – Three dimensional interpretation – method stereoscopic – Depths perceptation.

UNIT II   Space borne Remote Sensing – Elements of EMR – Energy Interaction in Atmosphere – Terrestrial Interaction – Spectral Reflectance Curves - Platforms – Sensors – Resolution – Active and Passive Remote Sensing.

UNIT III   Orbit - sensor characteristics and applications of Weather satellites - Land observation satellites: LANDSAT, SPOT, IRS, IKONOS, AEM, NOAA, GOES, NIMBUS, METEOSAT, SEASAT, RADARSAT, OCEAN SAT - Marine observation satellites – Remote sensing Applications.

UNIT IV   GIS – Definition – Components of GIS – Raster and Vector Data Structures–Georeferencing - Digitization – GIS Analysis - Application of GIS – Data quality issues, spatial Accuracy – Temporal Accuracy, - Attribute accuracy, conceptual accuracy.

UNIT V   Introduction to GNSS/GPS - Historical development - Segments - Error Sources – DGPS – GNSS/GPS Applications – Precision and Resolute on spatial – Resdution – Temporal – Resolution – Thematic – Resolution modeling – Errors – point Error modern line area Data – Error models, Dot and pixel.

Reference Books
1. Lillisand T.M and R.W. Kiefer (1994) Remote Sensing and Image Interpretation (3rd edition). John Wiley & Sons, New York.
2. Campbell. J.B. (2002) Introduction to Remote Sensing, Taylor and Francis, London.
3. Burrough, P. A., and McDonnell, R., (2000). Principles of Geographical Information Systems, Oxford University Press, London.
4. Heywood, I., Comelius, S., and Carver, S., (1988). An Introduction to Geographical Information Systems, Addison Wiley Longmont, New York.
5. Robinson, H Arthur et.al. (2002). Elements of Cartography, John Wiley & Sons, Inc. Singapore
6. Agraval, N.K., (2006). Essentials of GPS, Geodesy and GPS publications, Hyderabad.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	**14U6GYCP3**	**Practical - MAP PROJECTION AND SURVEYING**	**6**	**6**

Unit I   Construction of map projections (graphical methods only) - Zenithal (polar case only), Cylindrical projection and Conical projections - Properties and Uses.

Unit II   Polyconic – One standard and two standard parallel – Bonne's projection - Sinusoidal and Mollweide's projections – Properties and uses.

Unit III   Principles of survey – chain, prismatic compass and plane table survey

Unit IV   Indian Clinometer and Dumpy level survey

Unit V   Electronic and GNSS**/**GPS survey.

Reference Books

1. *M. Ishtiaq- Practical Geography-published by Jawahar publishers and Distributors-1994.*

2. *F.J. Monkhouse and H.R. Wilkinson-Maps and Diagrams-B.I.Publications-1952.*

3. *MD.Zulfequar Ahmad Khan-Text Book of Practical Geography-Concept Publishing Company, New Delhi-1998.*

4. *Gopal singh-Map work and practical geography- Vikas publishing House pvt.Ltd-1996.*

5. *R.L Singh – Elements of Practical Geography, Kalyani publishers, 1979*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	**14U6GYCP4**	**Core Practical** **MAP INTERPRETATION AND REMOTE SENSING**	**6**	**6**

Unit I   Interpretation of SOI Topographic sheets – physical and cultural details.

Unit II   Interpretation of NATMO maps – Cartographic appreciation.

Unit III   Interpretation of Ordinance Survey maps and US Topo maps.

Unit IV   Aerial photographs – Stereo vision - Visual elements – Tracing physical and cultural details - Interpretation.

Unit V   Satellite images – Tracing physical and cultural details – Preparation of Landuse /land cover maps - Interpretation.

Reference Books

1. *M. Kudrat – Digital Remote Sensing concept publishing company, NewDelhi – 1998.*

2. *K.K. Rampal – Handbook of Aerial Photography and Interpretation – concept publishing company, NewDelhi-1999.*

3. *R.K.Banerjee Bireswar Banerjee – Remote Sensing Techniques for Regional Development – Ashok Kumar Mittal Concept publishing Company – 2000.*

4. *R.P.Misra, A. Ramesh – Fundamentals of cartography – concept publishing company – 2000.*

5. *Paul. J. Curran-Principles of Remote Sensing –Longman Group UK Ltd. – 1985.*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	14U6GYEL3A	**Major Elective POLITICAL GEOGRAPHY**	5	3

UNIT I Nature, scope, subject matter and recent development in political geography-approaches to study-Political geography of contemporary India.

UNIT II Concept of boundaries and frontiers – concept of nation – Nation and state relationship.

UNIT III Nation-building - Colonialism, decolonization, Neocolonialism, Federalism and other forms of governance.

UNIT IV Geopolitics - heart land and rim land theories – Regional organizations of cooperation: SAARC, ASEAN, OPEC and EU.

UNIT V Geopolitical significance of Indian Ocean - Changing political map of India - Centripetal and centrifugal forces - stability and instability - Interstate issues - water disputes, riparian claims and conflict resolutions - Unity in Diversity.

Reference Books
1. *De Blij, H. J. and Glassner, Martin - Systematic Political Geography, John Wiley, New York, 1968.*
2. *Dikshit, R.D. - Political Geography: A Contemporary Perspective. Tata McGraw Hill, New Delhi. 1996.*
3. *Sukhwal, B.L. - Modern Political Geography of India Sterling Publishers, New Delhi. 1968.*
4. *Taylor, Peter; - Political Geography Longman, London. 1985.*
5. *Fisher Charles A. - Essays in Political Geography, Methuen, London, 1968.*
6. *Pounds N.J.G. - Political Geography. McGraw Hill, New York, 1972.*
7. *John R. Short - An Introduction to Political Geography, Routledge, London, 1982.*
8. *Prescott. J.R.V.: The Geography of Frontiers and Boundaries Aldine, Chicago.*
9. *Deshpande C.D: India-A Regional Interpretation Northern Book Centre, New Delhi. 1992.*

B.Sc. Geography

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	**14U6GYEL3B**	**Major Elective MEDICAL GEOGRAPHY**	**5**	**3**

Unit I   Medical Geography – Introduction – Scope – Contents – components of medical geography

Unit II   Environment and diseases – water bornediseases – air borne diseases – mineral enrichment and deficiencies – diseases.

Unit III Culture and Heath – food habits, family and community life, traditional outlook.

Unit IV   Food and health; habits, Food habits, family and community life, traditional outlook religion and health.

Unit V   Society and Health – Sanitation, modernization, Western way of living and emerging health issues.

References

1. Learmonth, Andrew (1978). Patterns of Disease and Hunger – A study in Medical Geography, David and Charles, London.
2. Misra, R.P. (1969). Medical Geography of India, N.B.T. New Delhi.
3. Howe, M. and Loraine (Eds.) Environmental Medicine (2nd Edition), William Jeinemanu.
4. Pyle, G.F. (1979). Applied Medical Geography, W.H. Winston – Sons, Washington D.C.

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	**14U6GYEL4A**	**Major Elective BIOGEOGRAPHY**	**5**	**3**

Unit I   Definition, scope and significance of biogeography – Basic ecological concepts and principles - Ecosystem: Types, Components and Functions – Biome: Types , Ecotone and Community–Bio diversity.

Unit II   Origin of fauna and flora – Plant and animal evolution through geological times - Distribution of plant life on earth and its relation to soil types.

Unit III   Problem of extinction of plant and animal life – habitat decay and their conservation – Process of desertification – its consequenences and management.

Unit IV   Effluents: Types - Sources - Effects on fresh water biology – Eutrophication - Management practices (special reference to India)

Unit V   Ecological regions of Himalayas and Western Ghats - Plant and animal life – Interrelationships - Problems – Conservation and management measures.

REFERENCE BOOKS

1. *Robinson – Biogeography – ELBS Mc Donald and Evans London, 1982*

2. *L.G. Simons – Biogeographically process – Allen and Unwell, London.*

3. *C Barry – Cox, Black Well - Biographical – an Ecological Evolutionary approach - Oxford 1977*

4. *B,Seddon – Biogeography – Duck worth, London 1971.*

Semester	Subject Code	Title Of The Paper	Hours Of Teaching/ Week	No. of Credits
VI	**14U6GYEL4B**	**Major Elective GEOGRAPHY OF TOURISM – II**	**5**	**3**

Unit I   Accommodation – types of accommodation, accommodation, time sharing – tours, tour operators – private and public tourism development corporations.

Unit II   Tourism promotion – Role of advertising and publicity, audio – visual, photographs, posters, information offices – Role of handicrafts, fairs, festival, Exhibition.

Unit III   World Tourism Organizations – WTO, IATA, PATA, IUOTO – International tourists flows.

Unit IV   Indian Tourism, major types – India as a paradise for tourists – Importance of tourism in Indian Economy.

Unit V   Consultant of tourism development – Measure of promoting tourism – Tourism Development in Tamil Nadu.

References

1. Maneet Kumar (1992). "Tourism Today", Kanishka Publishing House, Delhi.
2. Michael M.Coltman (1989) "Tourism Marketing", VanNostrand Reintold, New York.
3. Fodder Hoddles, Fodder's Guide of India, Hoden and Strongton.
4. Rosemary Burton (1995). Travel Geography, Pitman Publishing, London.