DEGREE OF MASTER OF SCIENCE
CHOICE BASED CREDIT SYSTEM

SYLLABUS FOR
M.SC. GEOGRAPHY
(SEMESTER PATTERN)
(For Candidates admitted in the Colleges affiliated to Periyar University from 2017-2018 onwards)
REGULATIONS

1. **OBJECTIVES OF THE COURSE**

   Geography discipline is penetrating into all sphere of human activities and therefore it is necessary to prepare the students to cope with the advanced developments in various fields of Geography. The objectives of this course are the following:

   (a) To impart knowledge in conventional and recent concepts and applications in various areas of Geography.

   (b) To train the students in various practical aspects of Geography.

   (c) To provide wide choice of elective subjects which are relevant with updated and new areas in various branches of Geography to meet the needs of all students.

2. **ELIGIBILITY FOR ADMISSION**

   A candidate who has passed B.Sc., Geography / B.Sc., Earth Sciences, Physical Sciences, Chemical Sciences, Biological Sciences and computer applications degree of this University or any of the above degree of any other University accepted by the Syndicate equivalent thereto, subject to such conditions as may be prescribed therefore shall be permitted to appear and qualify for the Master of Science (M.Sc.) Degree Examination in Geography of this University after a course of study of two academic years.

3. **DURATION OF THE COURSE:**

   The course of study of Master of Science in Geography shall consist of two academic years divided into four semesters with 92 credits. Each Semester consists of 90 working days.
4. COURSE OF STUDY

The courses of study for the degree shall be in Branch - Geography (Choice Based Credit System) with internal assessment according to syllabi prescribed from time to time. The Internal Assessment mark for theory is distributed to 3 components viz., Tests, Seminar and Attendance as 10, 10 and 05 marks, respectively. For practical, it is distributed to Record Work, Tests, and Attendance as 25, 10 and 05 marks respectively.

<table>
<thead>
<tr>
<th></th>
<th>Marks</th>
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<tr>
<td>Total Number of Marks</td>
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<tr>
<td>For Each Paper</td>
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<tr>
<td>Project</td>
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For Each Paper: (Int. 25 + Ext. 75)

Project: [Internal Valuation 25 +

External Valuation 25

Joint Viva Voce 25 + 25]
## COURSE OF STUDY AND SCHEME OF EXAMINATION

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Paper Code</th>
<th>Subject Title</th>
<th>Hours</th>
<th>Internal (25%)</th>
<th>External (75%)</th>
<th>Total</th>
<th>Credits</th>
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<td>Principles of Remote Sensing and GIS</td>
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6. **EXAMINATIONS**

The examination shall be of three hours duration for each paper at the end of each semester. The candidate failing in any subject(s) will be permitted to appear for each failed subject(s) in the subsequent examination.

Practical examinations for PG course should be conducted at the end of the even semester only.

At the end of fourth semester viva-voce will be conducted on the basis of the Project report by one internal and one external examiner.

7. **QUESTION PAPER PATTERN**

**Question Paper Pattern for Theory Examination**

Time: Three Hours               Maximum Marks: 75

**Part – A (5 X 5 = 25 Marks)**

Answer ALL Questions

(Either or Type)

**Part – B (5 X 10 = 50 Marks)**

Answer ALL Questions

(Either or Type)

**Question Paper Pattern for Practical Examination**

Time: 3 Hours               Maximum Marks: 100 (Internal: 40 + External: 60)

Practical Examination : 60 Marks (Exam: 50 Marks, Record: 10 Marks)

Passing Minimum : 30 Marks (Aggregate of examination and Record)

(No passing minimum for records)

There will be one question with or without subsections to be asked for the practical examination. Every question should be chosen from the question bank prepared by the examiner(s). Every fourth student gets a new question i.e. each question may be used for at most three students.

8. **Project:**

(a) **Topic:**

The topic of the project shall be assigned to the candidate before the beginning of third semester and a copy of the same should be submitted to the University for approval.

(b) **No. of copies project:**

The students should prepare Three copies of Project report and submit the same for the evaluation by Examiners. After evaluation one copy is to be retained in the college library and one copy is to be submitted to the university (Registrar) and one copy can be held by the student.
Format to be followed:
The formats / certificate for project to be submitted by the students is given below:
Format for the preparation of project work:
   a) Title page
   b) Bonafide Certificate
   c) Acknowledgement
   d) Table of contents
   e) List of Tables
   f) List of Figures

<table>
<thead>
<tr>
<th>Chapter No.</th>
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<tr>
<td>1.</td>
<td>Introduction</td>
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<td>2.</td>
<td>Review of Literature</td>
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<td>3.</td>
<td>Aim and Objectives</td>
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<td>4.</td>
<td>Methodology</td>
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<td>5.</td>
<td>Results and Discussion</td>
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<td>6.</td>
<td>Summary and Conclusion</td>
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Format of the Title page:

TITLE OF THE PROJECT

Project Submitted in partial fulfillment of the requirement for the award of the Degree of Master of Science in

GEOGRAPHY

(Under Choice Base Credit System)

To the Periyar University, Periyar Palkalai Nagar, Salem -636 011

By

Student’s Name :
Register Number :
College :
Year :

Format of the Certificate:

CERTIFICATE

This is to certify that the project entitled ................................submitted in partial fulfillment of the requirement of the award of the Degree of Master of Science in GEOGRAPHY (Under Choice Based Credit System) to the Periyar University, Salem is a record of bonafide research work carried out by..........................under my supervision and guidance and that no part of the project has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines

Date: ........................................ Signature of the Guide
Place:

Signature of the Head of the Department
Guidelines for approval of PG guides for guiding students in their research for submitting project:

A person seeking for recognition as guide should have:

(a) A Ph.D. Degree or M.Phil / M.A. / M.Sc. Degree with first class / second class and

(b) Should have 3 years of teaching / research experiences.

9. PASSING MINIMUM:

The candidate shall be declared to have passed the examination if the candidate secures not less than 50% marks in both the University Examinations and Internal Assessment in each paper.

For the Practical paper, a minimum of 50 marks out of 100 marks in the University examination and the record notebook taken together is necessary for a pass. There is no passing minimum for the record notebook. However submission of record notebook is a must.

For the Project work and viva-voce a candidate should secure 50% of the marks for pass. The candidate should attend viva-voce examination to secure a pass in that paper.

Candidate who does not obtain the required minimum marks for a pass in a paper / Practical Project Report shall be required to appear and pass the same at a subsequent appearance.

10. CLASSIFICATION OF SUCCESSFUL CANDIDATES:

Candidates who secure not less than 60% of the aggregate marks in the whole examination shall be declared to have passed the examination in First Class.

All other successful candidate shall be declared to have passed in the Second Class.

Candidates who obtain 75% of the marks in the aggregate shall be deemed to have passed the examination in the First Class with Distinction provided they pass all the examinations prescribed for the course at the first appearance.

Candidates who pass all the examinations prescribed for the course in the first instance and within a period of two academic years from the year of admission to the course only are eligible for University Ranking.
11. **MAXIMUM DURATION FOR THE COMPLETION OF THE PG PROGRAMME:**

The maximum duration for completion of the PG Programme shall not exceed eight semesters.

12. **COMMENCEMENT OF THIS REGULATION:**

These regulations shall take effect from the academic year 2017-2018, that is, for students who are admitted to the first year of the course during the academic year 2017-2018 and thereafter.

13. **TRANSITORY PROVISION:**

Candidates who were admitted to the PG course of study before 2017-2018 shall be permitted to appear for the examinations under those regulations for a period of three years, that is, up to end inclusive of the examination of April / May 2020. Thereafter, they will be permitted to appear for the examination only under the regulations then in force.
M.Sc. GEOGRAPHY

M.Sc. GEOGRAPHY

SEMESTER I

CORE I - GEOMORPHOLOGY

UNIT I

UNIT II

UNIT III
Arid Cycle – Slopes – Basic characteristics – Ideas of Wood – Concept of Slope Decline, Slope Replacement and Parallel Retreat of Slopes.

UNIT IV
Aeolian landforms – Karst landforms – Glacial landforms – Coastal landforms – Classification of coasts.

UNIT V
Ice Ages – Climatic Geomorphology – Morphogenetic regions – Applied Geomorphology with reference to engineering, mineral exploration and hydrological studies.

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER I

CORE II - POPULATION GEOGRAPHY

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER I

CORE III - ENVIRONMENTAL STUDIES

UNIT I

UNIT II

UNIT III
Human interference of the ecosystem – Population growth and its impact – Man’s impact on the biosphere – Agriculture – Green Revolution – HYV and pesticides – Man’s impact on land – Mining – Soils – Coastal areas.

UNIT IV

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY
SEMESTER I
CORE IV - PRACTICAL I
TERRAIN AND CLIMATIC DATA ANALYSIS

UNIT I
Drawing Profiles
1.1 Serial Profile
1.2 Superimposed Profile
1.3 Projected Profile
1.4 Composite Profile
1.5 Longitudinal Profile

UNIT II
Slope Analysis
2.1 Wentworth method
2.2 Smith Relative relief method
2.3 Altimetric Frequency Curve
2.4 Hypsographic Curve.

UNIT III
Morphometric Analysis
3.1 Stream Ordering
3.2 Bifurcation ratio
3.3 Stream Length Ratio
3.4 Miller’s Drainage Shape Calculating Method

UNIT IV
Climatic Data Analysis
4.1 Foster’s Climograph
4.2 Climatograph
4.3 Rainfall Dispersion Diagram
4.4 Wind-Rose Diagram
4.5 Cyclone Track

REFERENCE BOOKS:
UNIT I
Nature scope and significance of Agricultural Geography – Approaches to the study of Agricultural geography – Elements of agriculture.

UNIT II
Determinants of agricultural land use – Physical, economic, social, institutional and technological determinants.

UNIT III
Von Thunen’s theory of agricultural location and its recent modifications – Land use – Types – Land use surveys – Land capability classification.

UNIT IV

UNIT V
Agricultural regions of the world – A review of Whittlesey’s agricultural classification – Agricultural regions of India – Characteristics – Agricultural Problems.

REFERENCE BOOKS:
UNIT I

UNIT II

UNIT III
Economic significance of minerals – Distribution and production of iron ore, manganese, bauxite, copper, gold and mica – Fuel resources : Coal, Petroleum and Nuclear minerals.

UNIT IV
Manufacturing industries – Major inputs – Locational factors – Distribution of iron and steel, textiles (cotton and woolen) – Ship-building and Automobile industries – Major industrial regions of the world.

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER II

CORE VI - CLIMATOLOGY

UNIT I


UNIT II


UNIT III


UNIT IV

Air masses – Classification – Fronts – Atmospheric disturbances – Tropical and Temperate cyclones.

UNIT V


REFERENCE BOOKS:

M.Sc. GEOGRAPHY

SEMESTER II

CORE VII - URBAN GEOGRAPHY

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER II
CORE VIII- PRACTICAL II
STATISTICAL AND COMPUTER APPLICATIONS IN GEOGRAPHY

UNIT I
Introduction to Basics of Computers
  1.1 Historical Development
  1.2 Microsoft-Word-Power point Presentation – Excel Graphics

UNIT II
Data Collection
  2.1 Sources of Data
  2.2 Primary, Secondary and Spatial Data
  2.3 Pilot study
  2.4 Sampling methods
  2.5 Sampling error

UNIT III
Data Processing and Representation
  3.1 Frequency distributions and diagrammatic epresentation
  3.2 Histogram
  3.3 Frequency curve
  3.4 Polygon

UNIT IV
Measures of Central tendency
  4.1 Mean, Median and Mode Measures of dispersion
  4.2 Mean deviation
  4.3 Quartile deviation
  4.4 Standard Deviation
  4.5 Coefficient of Variations

UNIT V
Correlation Techniques
  5.1 Pearson’s Product Moment Correlation
  5.2 Spearman Rank Correlation Regression Analysis in Geography
  5.3 Residual Mapping
  5.4 Factor Analysis

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER II

ELECTIVE II - OCEANOGRAPHY

UNIT I
Scope, Content, Significance, Distribution of Land and Sea – Hypsometric Curve, Surface Configuration of the Ocean Floor: Continental Shelf, Continental Slope, Deep Sea Plain, Oceanic Deeps and Submarine Canyons.

UNIT II
Atlantic, Pacific and Indian Ocean – Horizontal and Vertical Distribution of Seawater Temperature, Salinity: Factors affecting Salinity and Distribution.

UNIT III

UNIT IV
Coral Reefs: Classification and Distribution – Coral Reefs types - Conditions for the Growth.

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER II

EDC - PAPER I - GEOGRAPHY OF INDIA

UNIT I
Location and Administrative Units – Physiographic divisions – Climate – Climatic types – Soils and Natural Vegetation.

UNIT II
Agriculture – Salient features – Factors affecting, agriculture in India – Major crops: Rice, wheat, cotton, jute, tea, coffee, sugarcane and tobacco – Irrigation and types – Multipurpose projects.

UNIT III

UNIT IV
Transport and communication: Road, Railways and Water transport – Inland waterways – Ports – Air transport – Foreign trade – Exports and Imports.

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER II

EDC - PAPER II - REGIONAL GEOGRAPHY OF TAMIL NADU

UNIT I
Location and administrative units – Physiographic divisions – Climate – Rainfall – Climatic types – Soils – Natural Vegetation.

UNIT II
Agriculture – Salient features – Major crops – Rice, cotton, tea, coffee and sugarcane – Irrigation and types.

UNIT III

UNIT IV
Transport and communication – Road and Railways – Ports – Air transport – Exports and Imports.

UNIT V

REFERENCE BOOKS:
UNIT I
Meaning and Nature of Cartography – Cartography as a Science – Historical
development – Maps – Types of maps – Compilation and generalization of maps.

UNIT II
Map design and layout – Lettering and toponomy – Tools and techniques for map
drawing – Map construction and reproduction – Developing processes – Photographic
and Printing – Photostat – Contact prints – Electronic stencil cutters.

UNIT III
Symbolizing and processing data – Statistical data base – Use of symbols on maps:
Point, line, area and volume symbols – Qualitative and Quantitative maps.

UNIT IV
Mapping the geologic structure, relief and terrain data – Mapping the climatological
and hydrological data – Mapping the socio-economic data.

UNIT I
Map Projections – Fundamentals – Classification – Major types of map projections –
Characteristics and uses – Choice of Projections – Recent development in Cartography

REFERENCE BOOKS:
Methuen & Co., London.
York.
Scientific and Technical, Essex.
Allied Publisher, Kolkata.
M.Sc. GEOGRAPHY

SEMESTER III

CORE X - CONCEPTS AND TRENDS IN GEOGRAPHY

UNIT I
Geographical thought – Greeks, Romans, Arabs – German – French – British – America – Australia – Indian Geographical Thought.

UNIT II
Traditions in Geography – Man – Land, Area Studies, Spatial and Earth Science Traditions – Dualism and Dichotomy – Systematic and Regional, Deterministic and Possibilistic, Physical and Human, Ideographic and Nomothetic, Qualitative and Quantitative.

UNIT III
Explanations in Geography – Models and Theories in Geography.

UNIT IV

UNIT V

REFERENCE BOOKS:
UNIT I
Map Compilation and Generalization
   1.1 Map Generalization
   1.2 Map Compilation
   1.3 Scale Conversion

UNIT II
Methods of Depiction of Relief
   2.1 Spot Height
   2.2 Bench Mark
   2.3 Triangulation Station
   2.4 Hachuring
   2.5 Hill shading
   2.6 Layer Tinting

UNIT III
Representation of Statistical data into Thematic maps
   3.1 Point symbol Maps
   3.2 Line symbol Maps
   3.3 Area symbol Maps
   3.4 Volume symbols Maps

UNIT IV
Survey of India Topographical Sheet
   4.1 Cartographic Appreciation of Survey of India
   4.2 Detailed interpretation of Survey of India

UNIT V
Interpretation of British and US maps
   5.1 British Ordnance Survey
   5.2 US Geological Survey maps
REFERENCE BOOKS:


M.Sc. GEOGRAPHY

SEMESTER III

ELECTIVE III - DISASTER AND MANAGEMENT STUDIES

UNIT I

Basic concepts of disaster – types of disasters – Natural forces and Life – Increasing importance of disasters.

UNIT II


UNIT III


UNIT IV

Disaster Preparedness and Mitigation – Managing natural and anthropogenic disasters – Risk assessment and analysis.

UNIT V


REFERENCE BOOKS:


M.Sc. GEOGRAPHY
SEMESTER IV
CORE XII - GEOGRAPHY OF INDIA

UNIT I
Location and Administrative units – Physiographic divisions – Climate – Climatic types – Soils and Natural Vegetation.

UNIT II
Agriculture – Salient features – Factors affecting, agriculture in India – Major crops – rice, wheat, cotton, jute, tea, coffee, sugarcane and tobacco – Irrigation and types – Multipurpose projects.

UNIT III

UNIT IV
Transport and communication: Land transport – Road and Railways – Water transport – Inland waterways – Ports – Air transport – Foreign trade – Exports and Imports

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY

SEMESTER IV

CORE XIII - PRINCIPLES OF REMOTE SENSING AND GIS

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

REFERENCE BOOKS:
M.Sc. GEOGRAPHY
SEMESTER IV
CORE XIV - PRACTICAL IV
GIS AND REMOTE SENSING APPLICATIONS

UNIT I
Aerial Photographs
1.1 Marginal Information
1.2 Interpretation of Aerial photographs
- Physical Features
- Cultural Features
1.3 Determination of Scale
1.4 Determination of Height

UNIT II
Satellite Images
2.2 Marginal Information
2.3 Elements of Image Interpretation
- Physical Features
- Cultural Features
2.4 Digital Image Processing
2.5 Image Classification

UNIT III
Geographic Information System
3.1 Map to Raster Conversion
3.2 Georeferencing
3.3 Digitization – Point, Line and Polygon
3.4 Data Coding
3.5 DEM and TIN Generation
3.6 GIS Analysis: Query, Buffering and Overlay

UNIT IV
Global Positioning Survey
4.1 GPS Survey (Point, Line & Polygon)
4.2 Thematic Map Preparation

UNIT V
Global Navigation Satellite Systems
5.1 GNSS Survey (Point, Line & Polygon)
5.2 Thematic Map Preparation
M.Sc. GEOGRAPHY

REFERENCE BOOKS:


M.Sc. GEOGRAPHY
SEMESTER IV
ELECTIVE IV - GEOGRAPHY OF TRAVEL AND TOURISM

UNIT I

UNIT II
History of tourism – Ancient, Medieval and Modern periods – Determinants and motivation of tourism.

UNIT III
Elements of tourism – Attraction, Accessibility and Amenities – Classification of tourist spots – Accommodation – Primary and supplementary accommodation – Hotels, inns and motels.

UNIT IV

UNIT V

REFERENCE BOOKS
PRACTICAL MODEL QUESTION PAPER
M.Sc., DEGREE EXAMINATION
(For the candidates admitted from 2017-2018 onwards)
Name of the course: M.Sc., GEOGRAPHY
Title of the Paper - Practical-III: THEMATIC CARTOGRAPHY
Semester – IV

Time: 3 Hours  Max. Marks: 60
For Practical: (5 x 10) = 50
For Record = 10

Answer ALL question
(All Questions carry equal marks)

1. Generalize the given portion of the Indian topographical sheet from the scale of 1:50,000 to 1:1,00,000.
2. The given map of Tamil Nadu and Kerala is depicted with the scale of 1:46,00,000 and the another map of Karnataka and Andhra Pradesh is having the scale of 1:92,00,000. Compile these two maps into the scale of 1:92,00,000.
3. Write the cartographic appreciation of the given British Ordnance survey sheet.
4. Interpret the given Indian topographical Sheet with special reference to land use and drainage.
5. Draw a located pie diagram for the following data.

Literate and Illiterate population of Tamil Nadu – 2011

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>Name of the District</th>
<th>Total Population</th>
<th>Literate Population</th>
<th>Illiterate Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Thiruvallur</td>
<td>3725697</td>
<td>2812869</td>
<td>912858</td>
</tr>
<tr>
<td>2.</td>
<td>Villuppuram</td>
<td>3463284</td>
<td>2223605</td>
<td>1239679</td>
</tr>
<tr>
<td>3.</td>
<td>Erode</td>
<td>2259608</td>
<td>1516380</td>
<td>743228</td>
</tr>
<tr>
<td>4.</td>
<td>Perambalur</td>
<td>564511</td>
<td>379797</td>
<td>184714</td>
</tr>
<tr>
<td>5.</td>
<td>Dindigul</td>
<td>2161367</td>
<td>1507310</td>
<td>654057</td>
</tr>
<tr>
<td>6.</td>
<td>Sivaganga</td>
<td>1341250</td>
<td>976384</td>
<td>364866</td>
</tr>
<tr>
<td>7.</td>
<td>Tirunelveli</td>
<td>3072880</td>
<td>2298262</td>
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</tr>
</tbody>
</table>
THEORY MODEL QUESTION PAPER

PERIYAR UNIVERSITY

M.Sc., DEGREE EXAMINATION

(For the candidates admitted from the year 2017-18 onwards)

Title of the Paper: GEOMORPHOLOGY

Time: 3 Hrs. Maximum: 100 Marks

SECTION - A (5 x 5 =25)

Answer ALL the Questions

(All Questions carry equal marks)

1. a) Principle of Uniformitarianism (OR)
   b) Briefly explain the landscape types

2. a) Simply explain the classification of plate margins. (OR)
   b) Defects of continental drift theory.

3. a) Write a short note on Penk’s morphological system. (OR)
   b) Briefly explain the King’s Pediplanation cycle.

4. a) Give a short account on Young’s classification of slope angles. (OR)
   b) Write about the classification of slopes.

5. a) What is placer? Classify the placer (OR)
   b) Mention the problems solved through Applied Geomorphology

SECTION - A (5 x 10 =50)

Answer ALL the Questions

(All Questions carry equal marks)

6. a) Evolution of Landscape is a function of ‘Structure’, ‘process’ and ‘Stage’ Discuss. (OR)
   b) Give a detailed account on continental drift theory.

7. a) Explain the major ‘Volcanic zones’ of the world. (OR)
   b) Write an essay on various types of weathering with suitable examples.

8. a) Discuss the slope replacement and parallel retreat of the slope. (OR)
   b) Give a detailed account on arid cycle with suitable illustrations.

9. a) Discuss about the landforms created by wind erosion and deposition. (OR)
   b) Analyse the classification of coasts by the various geomorphologists.

10. a) “Geomorphology as an aid to resource evolution, Engineering construction and planning” elucidate with suitable examples. (OR)
    b) Examine the utilities of the classification of morphogenetic regions in the geomorphological studies.