

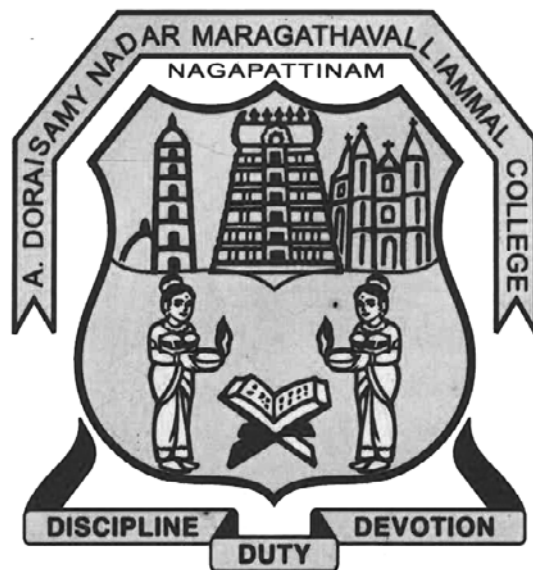
DEPARTMENT OF GEOLOGY

U.G. PROGRAMME

SYLLABUS

2017 – 2020 BATCH

IV SEMESTER



A. D. M. COLLEGE FOR WOMEN

NAGAPATTINAM

நான்காம் பருவம்
தாள் IV – பண்டைய இலக்கியமும், உரைநடையும்

அகமதிப்பீடு: 25

6

புறமதிப்பீடு: 75

மொத்த மதிப்பெண் : 100

பயிற்று மணிகள் :

தரப்புள்ளிகள் : 3

தேர்வுமணிகள் : 3

நோக்கம்:

1. பழந்தமிழ் இலக்கிய வளத்தை உணர்த்துதல்.
2. சங்க அக, புற பாடல் மரபுகளைப் பயிற்றுவித்தல்.

மாணவர் பெறும் திறன்:

1. பழந்தமிழ் இலக்கிய மரபை அறிவர்
2. வாழ்வியல் அறங்கள் மற்றும் வரலாற்றுச் செய்திகளை அறிவர்.

அலகு – I

குறுந்தொகை

1. 'வில்லோன்' எனத் தொடங்கும் பாடல் (பா.எ. 07)
2. 'அகவன்' எனத் தொடங்கும் பாடல் (பா.எ. 23)
3. 'கான்' எனத் தொடங்கும் பாடல் (பா.எ. 38)
4. 'தலைப்புணை' எனத் தொடங்கும் பாடல் (பா.எ. 222)
5. 'பாலும்' எனத் தொடங்கும் பாடல் (பா.எ. 396)

நற்றிணை

1. 'நின்றசொல்லர்' எனத் தொடங்கும் பாடல் (பா.எ. 01)
2. 'தடமருப்பு' எனத் தொடங்கும் பாடல் (பா.எ. 120)

ஐங்குறுநூறு

1. பாலைத்திணை – தலைவி இரங்கு பத்து (331 முதல் 340 வரை) – 10 பாடல்கள்

அகநானூறு

1. 'அகல்அறை' எனத் தொடங்கும் பாடல் (பா.எ. 105)
2. 'நோகோ' எனத் தொடங்கும் பாடல் (பா.எ. 153)

அலகு – II

கலித்தொகை

1. குறிஞ்சிக்கலி
'சுடர்த்தொடீஇ' எனத் தொடங்கும் பாடல் (பா.எ. 15)
2. நெய்தல்கலி
'மாமலர்' எனத் தொடங்கும் பாடல் (பா.எ. 16)

அகநானூறு

1. 'வள்ளியோர்' எனத் தொடங்கும் பாடல் (பா.எ. 47)
2. 'நின்னயந்து' எனத் தொடங்கும் பாடல் (பா.எ. 163)
3. 'உண்டாலம்ம' எனத் தொடங்கும் பாடல் (பா.எ. 182)
4. 'ஈயென' எனத் தொடங்கும் பாடல் (பா.எ. 204)

5. 'நினைக்குங்காலை' எனத் தொடங்கும் பாடல் (பா.எ. 217)

சிறுபாணாற்றுப்படை

1. சிறுபாணாற்றுப்படை முழுவதும்

அலகு - III

திருக்குறள்

1. புறங்கூறாமை (அதிகாரம் 19)
2. மானம் (அதிகாரம் 97)
3. நெஞ்சொடு கிளத்தல் (அதிகாரம் 125)

நாலடியார்

1. 'அரும்பெறல்' எனத் தொடங்கும் பாடல் (பா.எ. 34)
2. 'கல்லாதுபோகிய' எனத் தொடங்கும் பாடல் (பா.எ. 169)
3. 'கோட்டுப்பூப்போல்' எனத் தொடங்கும் பாடல் (பா.எ. 215)
4. 'நன்னிலைக்கண்' எனத் தொடங்கும் பாடல் (பா.எ. 248)
5. 'ஒருநன்றி' எனத் தொடங்கும் பாடல் (பா.எ. 357)

பழமொழி நானூறு

1. 'புலமிக்கவரை' எனத் தொடங்கும் பாடல் (பா.எ. 07)
2. 'முல்லைக்கு' எனத் தொடங்கும் பாடல் (பா.எ. 74)
3. 'பூத்தாலும்' எனத் தொடங்கும் பாடல் (பா.எ. 93)
4. 'செயல்வேண்டா' எனத் தொடங்கும் பாடல் (பா.எ. 263)
5. 'நாடிநமரென்று' எனத் தொடங்கும் பாடல் (பா.எ. 346)

அலகு - IV

உரைநடைத்திரட்டு - தமிழ்த்துறை வெளியீடு

அலகு - V

1. இலக்கிய வரலாறு - சங்க இலக்கியம்
பாட்டும் தொகையும்
பதினெண் கீழ்க்கணக்கு

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A.D.M. COLLEGE FOR WOMEN (AUTONOMOUS) NAGAPATTINAM
DEPARTMENT OF ENGLISH **Credit Point : 3**
SEMESTER-IV CATEGORY – PART II- ENGLISH
Paper IV – ENGLISH FOR COMPETITIVE EXAMINATIONS

SEMESTER IV

ELC IV – ENGLISH FOR COMPETITIVE EXAMINATIONS

Text Prescribed:

- **English for Competitive Examinations – R.R. Bhatnagar and Rajul Bhatnagava**
- **Spoken English – V. Sasikumar and P.V.Dhamaja.**

Units:

1. Articles
2. Indirect Speech
3. Tenses
4. Errors and how to avoid them
5. Spotting Errors
6. Sentence Completion
7. Synonyms-50
8. Antonyms-50
9. Idiomatic Expression-36
10. Reconstructing Passages-20
11. Precis Writing
12. Letter Writing (Formal and Informal)
13. Comprehension
14. Essay Writing
15. Dialogues

Unitized Syllabus

Unit-I

1. Articles
2. Indirect Speech
3. Tenses
4. Errors and how to avoid them
5. Spotting Errors

Unit-II

6. Synonyms-50
7. Antonyms-50
8. Idiomatic Expression-36

Unit-III

9. Reconstructing Passages

10. Sentence Completion
11. Letter Writing (Formal and Informal)

Unit-IV

12. Precis Writing
13. Comprehension

Unit-V

14. Essay Writing
15. Dialogues

Pattern of Evaluation

CIA – 25 Marks (Passing minimum of 40%)

Test (Written)	– 10 Marks
Assignment	- 5 Marks
Quiz / Group Discussion	- 5 Marks
Attendance	- 5 Marks
S/E	– 75 Marks
Total Marks	– 100 (Passing minimum of 40%)

**Question Pattern:
Section A - 20 Marks**

Vocabulary (20 x 1 = 20)

1. Synonyms - 5 Marks
2. Antonyms - 5 Marks
3. Idiomatic Expression - 5 Marks
4. Sentence Completion - 5 Marks

Section B – 25 Marks

Grammar Components

1. Spotting Errors - 5 Marks
2. Errors and How to avoid them - 5 Marks
3. Reconstructing Passages - 5 Marks
4. Tense Form - 5 Marks
5. Articles -3 Marks
6. Direct to Indirect Speech - 2 Marks

Section C (30 Marks)

1. Letter Writing - 5 Marks
 2. Précis Writing - 5 Marks
 3. Comprehension - 5 Marks
 4. Essay Writing -10 Marks
 5. Dialogues - 5 Marks
- Personal Letter / Informal Letter (Either Or Pattern)

SEMESTER IV
CORE COURSE VI -
PALAEONTOLOGY AND CRYSTALLOGRAPHY - PRACTICAL

Internal Marks : 40
External Marks: 60

Instruction Hours: 6
Exam Hours : 3

PALAEONTOLOGY

Megascopic identification and description of the following fossils:-

Corals: Calceola, zapherenits, Lithostratium, Favosites, Halysites,;
Brachiopoda: Spirifer, Productus, Terebratula, Rhyconella, Atrypa, Athyris, Orthis, Pentrimites, Cidaris, Hemicidaris, Micraster, Holaster, Hemisaster, Stygmatohygus, Arca, Cardium Meretrix, Cardita, Pectan, Trigonina, Megaladon, Pholodomya, Spondylus, Gryphea, Exogyra, Orstrea, Inoceramus, Alectryonia, Hippurites, Natica, Turbo, Trochus, Turritella, Cerethium, Conus, Voluta, Murex, Fusus, Physa, Bellarophon,
Nautilus, Goniatites, Ceratites, Acanthoceras, Scholenbachia, Perispinctus, Desmoceras, Hamites, Scaphites, Baculites, Turritites and Belemnites,
Paraoxides, Calamyne, Phacops. Trinucleus,
Phyllograptus, Tetragraptus, Didymograptus, Diplograptus, Monograptus,
Glossopteris, Gangamopteris, Ptillophyllum, Lepidodendron, Sigillaria and Calamites.

MICRO FOSSILS:-

Lagena, Nodosaria, Textularia, Operculina, Elphidium, Ammonia.

DIAGRAMS:-

Paraoxides, Pentremites, Trigonina, Meretrix, Murex, Turritella, Nautilus, Spirifer, Arca.

CRYSTAL MODELS

Identification and description of the following crystal models:-

Galena, Garnet, Florite, Pyrite, Tetrahedrite, Boracite, Sphalerite, Cuprite, Zircon, Casseterite, Rutile, Octahedrite, Apophyllite, vesuvianite, Scheelite, Meonite, Wulfenite, Chalcopyrite, Beryl, Zincite, Apatite, calcite, Haematite, Dolomite, Corundum, Tourmaline, Phenacite, Dioptase, Quartz, Olivine, topaz, Barite, Andalusite, Cordierite, Sulphur, Staurolite, Hypersthene, Calamene, Struvite, Epsemite, Gypsum, Orthoclase, Pyroxene, Augite, Amphibole, Hornblende, Epidote, Sphene, Axinite, Albite, Kyanite, and Rhodenite.

SIMPLE TWIN MODELS:-

Galena, Florite, Pyrite, Rutile, Calcite, Quartz, Staurolite, Gypsum, Augite, Orthoclase, Albite.

SEMESTER IV
CORE COURSE V -
PALAEONTOLOGY AND CRYSTALLOGRAPHY

Internal Marks : 40

External Marks: 60

Instruction Hours : 5

Exam Hours : 3

Unit I: Definition of Palaeontology - Definition of fossils – nature and modes of preservation of fossils: Body fossils and trace fossils; Body fossils - Petrification , permineralisation , carbonisation, recrystallisation, silicification; trace fossils- mould, casts, tracks , trails, borings. Uses of fossils in – stratigraphy – palaeoclimate - palaeogeography – palaeolife - evolution and migration of life forms – economic geology. Life through ages. Phylum Arthropoda:- Class – Trilobita- General morphology - classification – geological history and stratigraphic importance.
 Sub phylum Hemichordata – class Graptozoa: order Graptoloidea – general morphology, classification, geological history and stratigraphic importance.

Unit II: Phylum Coelentrata – class Anthozoa - classification – tabulate corals – Rugose corals. General morphology geological distribution – stratigraphic importance.
 Phylum Mollusca: Class Pelecypoda - General characters - dentition, classification and geological history. Class Gasteropoda:- General morphology, shell forms – types of coiling – dextral and sinistral, perforate and imperforate-classification and geological history.
 Class Cephalopoda:- General morphology, suture line pattern, classification, geological history. Morphology of a Belemnite.

Unit III: Phylum Brachiopoda:- General morphology – brachial skeleton, classification , geological history. Phylum Echinodermata: Class Echinoidea: General morphology– regular and irregular echinoids, classification – geological history. Class Crinoidea:- General morphology and geological history. Class Blastoidea: General morphology and geological history.
 Phylum protozoa – Order: Foraminifera: General morphology – dimorphism – classification and stratigraphic importance. A brief account of the following plant fossils: - Glossopteris, Gangamopteris , Ptilophyllum , Calamites , Lepididendron and Sigillaria.

Unit IV: Definition of crystal – morphological characters of crystal – faces –forms – edges solid angles – Interfacial angle. Contact Goniometer and its uses. Symmetry elements – crystallographic axes – crystal notation – parameter system of Weiss and Miller indices – axial ratio – laws of crystallography – the law of constancy of symmetry , the law of constancy of interfacial angles and the law of rational indices. Study of the symmetry elements, and forms of the Normal, pyritohedral , tetrahedral and plagiohedral classes of cubic system. Study of symmetry elements and forms of Normal, Hemimorphic, Sphenoidal and Trapezohedral classes of Tetragonal system.

Unit V: Study of the symmetry elements and forms of Normal, Hemimorphic Trapezohedral, Rhombohedral , Rhombohedral Hemimorphic classes of Hexagonal system. Study of the symmetry elements and forms of the Normal , Hemimorphic and Sphenoidal classes of Orthorhombic system. Study of the symmetry elements and forms of the Normal classes of the Monoclinic and Triclinic systems. Twin crystals – Definitions – simple and repeated (polysynthetic twins), contact and penetration twins: secondary twins.

TEXT BOOKS:

1. Henry woods : Inveretebrate palaeontolgy – Cambridge.
2. Romer , A.S. : Vertebrate palaeontology, Chicago press.
3. Arnold, C.A., : An introduction to Palaeobotany., MC-Graw Hill.
4. B.U. Hag and A. Boersma (1978) : Introduction to marine Micropalaeontology. Elsevier, Netherlands
5. Jain, P.C., and Anatharaman, M.S., : An introduction to Paleontology, Vishal Publications.
6. Dana, F.S.(1955) : A text book of mineralogy - Asia Publishing House - Willey.
7. Wade., F.A. & Mattox, R.B. : Elements of crystallography and mineralogy, Harper & Bros. (1960)
8. Phillips, P.C (1956) : An introduction to crystallography Longmans green & co.,

REFERENCE BOOKS

1. Raup, D.M. and Stanely, M.S. : Principles of Palaeontology, CBS Publishers.
2. Moore , R.C., Laliker , C.G.& Fishcher, A.G.: Invertebrate Fossils , Harper brothers
3. Shrock. R.R. and Twenhofel , W.H – 1953 : Principles of invertebrate Palaeontology, Arnold publication
4. Easton - Invertebrate Paleontology
5. Phillips, W.R. Optical Minerlogy,Griffen, D.T.1986.
6. Walhstrom, E.F.1960 - Optical crystallography – John wiley.

UPA2Y

SEMESTER II/ IV CORE COURSE IX ALLIED PHYSICS COURSE II (Any 12 Experiments)

I B. Sc. Mathematics(II SEM) / II B. Sc. Geology & Chemistry(IV SEM)

Internal: 40

External : 60

Instruction Hours: 5

Exam Hours: 3

Credit: 3

Objective:

To acquire basic understanding of laboratory technique and to educate and motivate the students in the field of Physics.

1. Non-Uniform bending – Pin and Microscope.
2. Uniform bending-scale and Telescope.
3. Surface tension and Interfacial Surface tension by Drop weight Method.
4. Coefficient of viscosity of liquid – Variable Pressure head Method.
5. Thermal conductivity of a bad conductor – Lee’s disc Method.
6. Specific heat capacity of liquid – Newton’s cooling Method.
7. Spectrometer – Refractive index of a solid prism.
8. Air wedge – Thickness of the given thin wire.
9. Potentiometer – low range voltmeter.
10. Carey Foster’s Bridge – Resistance Determination.
11. Meter bridge – Specific resistance.
12. Characteristics of a junction diode –Forward resistance and knee voltage.
13. Characteristics of a Zener diode-Break down voltage.
14. Basic logic gates – AND, OR and NOT gates using discrete components.

Books for Study:

1. Dr.S.Somasundaram, *Practical Physics*, Apsara publications, Tiruchirapalli, 2012.
2. R. Sasikumar, *Practical Physics*, PHI Learning Pvt. Ltd, New Delhi2011.

Books for Reference:

1. S.Srinivasan, *A Text Book of Practical physics.*, S.Sultanch and publications.
2. Department of Physics, *Practical Physics*, (B.Sc Physics Main), St.Joseph’s College, Tiruchirapalli 1998.

SEMESTER IV ALLIED COURSE III ALLIED PHYSICS COURSE III

I B. Sc. Mathematics(II SEM) / II B. Sc. Geology & Chemistry(IV SEM)

Internal: 25

Instruction Hours: 5

External : 75

Exam Hours: 3

Credit: 3

Objective:

This course is to high light the Modern Physics and digital Electronics

Unit-1 ELECTROSTATIC

12 Hrs

Coulomb's law- Guass's theorem, its application field due to an infinite long plane, Sphere and Cylinder – Mechanical force on the surface of a charged conductor-Electrostatics-Formation of cloud and charged particles. Capacitors-Principles of a capacitor-capacity of a capacitor-capacity of Spherical and cylindrical capacitor-energy of a charged capacitor-sharing of charges and loss of energy.

Unit-2: ELECTRICITY

12 Hrs

Kirchhoff's Laws and their applications to Wheat stone's net work –Carey Foster Bridge – Determination of resistance. Circuit control and Protective Devices-Switch-its types-Fuse – Circuit Breakers- Relays.

Unit-3: ATOMIC PHYSICS

12 Hrs

Atom model- Vector atom model-Variou Quantum Numbers -Pauli's Exclusion Principle. X-Rays Continuous and Characteristics of X-rays-Bragg's law-Determination of Crystal Structure by Laue's Powder Photo Graph Method.

Unit-4: NUCLEAR PHYSICS

12 Hrs

Nucleus-Nuclear size-Charge-Mass and Spin-Liquid drop and Shell models, Nuclear fission and fusion-Nuclear reactor. Betatron- Bubble Chamber.

Unit-5: ELECTRONICS

12 Hrs

P-N junction-V-I Characteristics of junction diode- Zener Diode-Voltage regulator using Zener Diode. **Logic Gates:** AND, OR, NOT gates-using discrete components- NAND and NOR Gates as Universal building blocks - Demorgan's theorem- Verification. Elementary ideas of ICS, SSI, MSI, LSI and VLSI.

BOOKS FOR STUDY:

Allied Physics II- A.Sundaravelusamy

Books for Reference :

1. R. Murugesan -Electricity and Magnetism, S. Chand & Co, 2002.
2. R. Murugasen - Modern Physics, S.Chand & Co, 1998.
3. R. Murugesan – Allied Physics.

SEMESTER IV SKILL BASED ELECTIVE I CLIMATOLOGY

Internal Marks : 25
External Marks: 75

Instruction Hours : 2
Exam Hours : 3

Unit I

Nature and scope of climatology: elements of weather and climate -composition and structure of the atmosphere – Insolation – heat budget – horizontal – vertical and seasonal distribution of temperature.

Unit II

Atmospheric pressure: vertical and horizontal distribution of pressure - Wind: planetary, seasonal – monsoon – local winds - Atmospheric circulation.

Unit III

Humidity, - cloud – fog – precipitation: forms and types - evaporation - condensation - hydrological cycle – air masses: types - fronts: classification and properties

Unit IV

Atmospheric disturbances: tropical and temperate cyclones – Anti cyclone - thunderstorms – tornadoes.

UNIT V

Climatic classification: Koppen's and Thornthwaite - Atmospheric pollution - global warming –sea level rise – ozone depletion.

Reference Books

1. D.S. Lal (1998) -Climatology, Chaitanya Publishing House, Allahabad.
2. Critchfield.H (1969) General –Climatology, Prentice Hall of India Pvt, Ltd, New Delhi.
3. Keith Smith (1988). Applied Climatology, McGraw Hill, New York.
4. Das Gupta, A & Kapoor, A.N. (2001) Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi.
5. Strahler, A. H. & Strahler, A N. (2001) Modern Physical Geography (4/E), John Wiley and Sons, Inc., New York.

SEMESTER IV NON MAJOR ELECTIVE II INTRODUCTION TO MINERALS, ROCKS AND FOSSILS

Internal Marks : 25

Instruction Hours : 2

External Marks: 75

Exam Hours : 3

Unit I: Definitions of Mineral, Mineraloid, Ore and Gangue. Brief study of Physical Properties of Minerals; Nature, Streak, Cleavage, Hardness, Luster and fracture Description of physical properties and chemical composition (a) Quartz group (Rock crystal, Amethyst, Chert, Chalcedony, Opal) (b) Feldspars (Orthoclase, Labradorite) (c) Pyroxenes (Hypersthene, Augite) and (d) Amphiboles (Anthophyllite, Hornblende). Study of physical properties and distribution of gemstones in Tamilnadu – Ruby, Sapphire, Emerald, Moonstone and Iolite.

Unit II: Physical properties, Chemical composition, origin and uses of; Iron ores (Magnetite, Hematite), Placers (Ilmenite, Garnet), Copper ores (Chalcopyrite, Malachite). Molybdenite, Calcite, Graphite, Asbestos, Talc, Celestite and Bauxite. Introductory knowledge about properties, origin and uses of Lignite of Neyveli: Origin and occurrence of Petroleum in Cauvery basin. Role of minerals in the production of Cement: Mineral wealth of Tamilnadu

Unit III: Brief study of common characters of igneous rocks. Igneous structures - Dyke, Sill and Batholith. Tyrrell's tabular classification of igneous rocks: Descriptive study of structure, texture, mineralogy and origin of; 1. Granite 2. Syenite 3. Gabbro 4. Dunite 5. Basalt 6. Pegmatite 7. Anorthosite and 8. Dolerite. Role of rocks in Granite industries

Unit IV: Common properties of sedimentary rocks. Simple classification of sedimentary rocks – Mechanical, Chemical, Organical and Residual. Description of texture, mineralogy and origin of (a) sandstone (b) conglomerate (c) Breccia (d) Shell-Limestone (e) Shale. General characters of metamorphic rocks. Agents and kinds of metamorphism. Brief study of slate, schist, gneiss, marble and charnockites.

UNIT V: Definition of Palaeontology — Classification of animals – Habitates and Habits of animals. Definition of fossils – Types of preservation of fossils. Uses of fossils. Megascopic identification and description of the following fossils:-
Corals: Calceola, zapherenits; Brachiopoda: Spriifer, Productus, Terebratula; Pelecypoda: Arca, Cardium. Meretrix, Cardita, Pectan; Gasteropoda: Natica, Turbo, Trochus, Turritella, Physa; Cephalopoda: Nautilus, Goniatices, Ceratites.

TEXT BOOKS:

1. Dana, F.S. 1955 - A text book of mineralogy – Asia publishing House, Wiley.
2. Tyrrel, G.W. 1978 - The principles of petrology – Chapman and Hall Ltd., London.
3. Mahapatra, G.B. - A text book of Geology, CBS, Delhi
4. Lindgren W. - Mineral Deposits, MC Graw Hill, 1933
