ANNA UNIVERSITY : CHENNAI - 600 025

ADMISSION TO M.Sc. (2 Years) DEGREE PROGRAMMES (2014 – 2015)

INFORMATION AND INSTRUCTIONS TO CANDIDATES

1. GENERAL

Applications are invited for admission to the following M.Sc. (2 years) degree programmes (Group Code A to G) offered at University Departments of College of Engineering Guindy and Madras Institute of Technology Campuses, Anna University, Chennai - 600 025.

Sl. No.	Group Code	Name of the Programme
1.	A	Applied Mathematics
2.	B	Materials Science / Medical Physics
3.	C	Applied Chemistry
4.	D	Applied Geology
5.	E	Electronic Media (SS)*
6.	F	Science and Technology Communication(SS)*
7.	G	Environmental Science (SS)*

* (SS) These programmes are offered under SELF - SUPPORTING categories.

2. DURATION OF THE PROGRAMME : 4 Semesters (2 Academic Years)

3. ELIGIBILITY FOR ADMISSION

The candidate must have passed the degree in the relevant field (as given in Table - 1) with (10+2+3 / 4 years) pattern from a recognised University.

TABLE - 1

Group Code	Programme	Eligible / Qualifying Degree	Campus
Group – A	Applied Mathematics	B.Sc. (Mathematics) **(or)** B.Sc. (Applied Science)	College of Engineering Guindy Campus / Madras Institute of Technology Campus
Group – B	1. Materials Science	B.Sc. (Physics) with Mathematics as an Ancillary Subject **(or)** B.Sc. (Applied Science)	College of Engineering Guindy Campus
	2. Medical Physics*****		
Group – C	Applied Chemistry	B.Sc. (Chemistry) **(or)** B.Sc. (Applied Science)	College of Engineering Guindy Campus
Group – D	Applied Geology	B.Sc. (Geology / Applied Geology / Physics / Chemistry / Environmental Science / Applied Science)	College of Engineering Guindy Campus
Group – E	Electronic Media	B.Sc. / BCA / B.E. / B.Tech. / BA (Journalism)	College of Engineering Guindy Campus
Group – F	Science and Technology Communication	B.Sc. / BCA / B.E. / B.Tech. / BA (Journalism)	College of Engineering Guindy Campus

Group – G	Environmental Science	B.Sc. any discipline with one course related to Chemistry / Biology	College of Engineering Guindy Campus

***** M.Sc. Medical Physics program, offered by Department of Medical Physics, College of Engineering Guindy Campus Anna University, Chennai is one of the professional courses dealing with radiation physics, radiation therapy and radiation safety to the public, patients and personnel. As per AERB safety code 2011 [code No. AERB/RF-MED/SC-1(Rev.1)], it is mandatory that the candidates who complete M.Sc. (Medical Physics) degree should undergo Medical Radiological Safety Officer examination conducted by AERB after undergoing a minimum of 12 months internship in any one of the AERB recognised Radiotherapy Department to work in the Hospital and Medical institutes as a qualified Medical Physicist or as Radiological Safety Officer.

Candidates appearing for final semester / year examination in April / May – 2014 may also apply for admission.

For Group A to G programme, the admission is based on the marks obtained in the Entrance Examination to be conducted by Anna University, Chennai – 25 on 22.06.2014.

Common merit list will be prepared for M.Sc. (Electronic Media) and M.Sc. (Science and Technology Communication) courses.

4. ENTRANCE EXAMINATIONS

For Group A to G

a) Date of Entrance Examinations : **22.06.2014**

b) Centre for Entrance Examinations : **CHENNAI ONLY**

5. FILLING OF APPLICATION

The candidates must fill up the application form carefully.

The application form is common for admission to all M.Sc. (2 years) Degree Programmes.

6. NATIVITY

i) Candidates who have studied 5 years (from XI Standard onwards) continuously in Tamil Nadu will be considered as Tamil Nadu Candidates. Candidates who are Native of Tamil Nadu but have studied either XI, XII or / and Degree outside Tamil Nadu have to produce a Nativity Certificate from the Tahsildar of their Native Taluk / District of Tamil Nadu for considering them as Tamil Nadu Candidate (Refer Certificate No. IV).

ii) Other State candidates will be considered under Open competition only.

7. SELECTION AND ADMISSION PROCEDURE

7.1. Selection of candidates will be as per the merit list prepared based on the marks secured in the entrance examination conducted by Anna University

The selection of candidates will be through counselling following the rule of reservation of Government of Tamil Nadu. Reservation will be made under seven categories namely OC, BC (other than BC Muslim), BCM (BC Muslim), MBC / DNC, SC, SCA and ST.

Tamil Nadu Native candidates alone will be considered for communal reservation and the list of communities eligible for communal reservation is given in the **Annexure - I**.

Candidates seeking admission under ST/ SC/ SCA/ MBC & DNC/ BC/BCM (BC Muslim) quota should obtain the certificate of social status issued by the competent authority in the Permanent Community card prescribed by the Government of Tamil Nadu and enclose only an attested photocopy of the same along with the application.

a) The applicants from Tamil Nadu State should have obtained permanent community certificate card (for SC/SCA/ST/MBC & DNC, BC and BC Muslim candidates) only from the authorities given below on or before the last date prescribed for submission of filled-in application.

Community	Issuing Authority
Scheduled Tribe	Revenue Divisional Officer of their native place or Sub-Collector of their districts (except Chennai) or P.A. (General) to Collector of Chennai. The Community Certificate card issued by Tahsildars upto 11.11.1989 is valid.
Scheduled Caste / Scheduled Caste (Arunthathiyars)	Tahsildar of Native Taluk of the candidate
Backward Class / Backward Class (Muslim) / Most Backward Class / Denotified Communities	Headquarters Deputy Tahsildar / Zonal Deputy Tahsildar / Deputy Tahsildar (Certificates)

Married women should possess Community Certificate issued in Father's name only.

Community Certificate issued after the last date prescribed for submission of filled-in applications will not be considered.

b) Community Certificate obtained from **Other States** will not be considered for communal reservation.

c) For communities linked with districts the candidates should obtain their community certificate in their respective district. Community certificates obtained from other than their respective district will not be considered. However, the candidates who belong to **BC, MBC and DNC** communities in a particular district and migrated to other places in Tamil Nadu and obtained Community Certificates from competent authorities in the migrated district on or after 28.10.2009, will be considered. (as per G.O. (St) No.95 BC, MBC & Minorities Welfare Department, dated 28.10.2009).

d) Candidates who have not enclosed an attested photocopy of the Permanent Community Card certificate at the time of submission of the application will be treated under Open Category (OC). In the event of such a decision, the eligibility conditions and rules prescribed for open category (OC) will be applicable for such candidates and if such candidates do not satisfy the rules of "Open Category" (OC) their applications are liable to be rejected. No correspondence in this regard will be entertained.

7.1.1. If two candidates have obtained same marks in the preparation of merit list, the candidate having higher average percentage of marks upto pre-final semester/year of the qualifying examination and have passed all the subjects of the qualifying examination upto pre-final semester / year will be ranked above.

7.1.2. Candidates who have secured zero mark / negative mark in the entrance examination are not eligible for admission. Candidates who have passed all the subjects in the qualifying degree Examinations alone will be permitted to attend the counselling. Candidates who do not attend counselling on the prescribed date and time cannot claim any right for admission and their names will be removed from the merit list.

7.1.3. More number of candidates than the actual seats available will be called for counselling. The required number of seats will be filled based on merit and following communal reservation, through counselling.

7.1.4. **Rank list and counselling schedule will be published in Anna University Website.** The date of counselling will be informed to the candidates individually through the counselling call letter by speed post through self addressed stamped envelope enclosed by the candidate. Eligible candidates may appear with their original certificates (List available in Anna University website) two hours before the counselling session, **irrespective of receipt of individual communication**. College and branch will be allotted only through counselling as per their rank following communal reservation. Candidates are advised to visit Anna University Website: http://www.annnauniv.edu for counselling details. The University will not be responsible for non-receipt of counselling call letter. Counselling will be held at **Centre for Entrance Examinations and Admissions, Anna University, Chennai-25 only.** Candidates should attend the counselling at their own cost and risk. Candidates who do not attend the counselling on the prescribed date and time cannot claim any right for admission at a later date.

The counselling schedule and the format of "Intimation of Counselling" containing details about counselling will be published in Anna University website http://www.annnauniv.edu before the commencement of counselling.

7.1.5. Candidates who have passed all the subjects in the qualifying degree exam but have not yet received their provisional / degree certificate will also be considered for counselling. However, such candidates have to produce an evidence for having passed all the subjects like, downloaded mark sheet attested by any Faculty/HOD/COE. If such candidates are selected and offered provisional admission as per merit, they have to join the programme on the prescribed date after paying the prescribed fees. They have to produce the provisional/degree certificate on or before the date prescribed by the Dean of the Campus concerned. The provisional admission of those candidates who fail to produce the said certificate on or before the specified date, even if eligible otherwise, will automatically stand cancelled. Such candidates have to discontinue the programme and they are not eligible for refund of the fees paid.

7.2. Seats are reserved specially for Differently abled persons as per Government Norms.

The Counselling will be conducted at Anna University, Chennai - 600 025. Candidates should attend counselling at their own cost with all their original certificates with an initial deposit of ₹ 5000/- in the form of a Demand Draft.

Candidates are advised to visit Anna University website www.annauniv.edu for the results of the Entrance Examinations and the schedule for counselling and for other details regarding admission to M.Sc. Degree Programmes.

HOSTEL ACCOMMODATION IS NOT AVAILABLE FOR ALL THE PG PROGRAMMES.

8. HALL TICKET

8.1. Hall ticket for Entrance Examination will be despatched to all eligible candidates on or before 10.06.2014. If any candidate does not receive the Hall Ticket by 18.06.2014 he/she should get a certificate from the Head of the Institution last studied/studying or from a Grade A or B officer to the effect that he/she is a genuine candidate for the Entrance Examination along with an attested copy of a passport size photograph which has been taken from the same negative as used for the photo in the application and hall ticket and produce the same on 21.06.2014 between 10.00 a.m. and 5.00 p.m. in the enquiry office at the Examination Centre, Anna University, Chennai –25. The candidate, if eligible after verification, will be issued a duplicate Hall Ticket.

8.2. Hall ticket of Entrance Examination should be produced at the time of admission. If the mark sheet is lost, a duplicate mark sheet can be obtained on payment of ₹ 250/- on a written requisition to the Director (Admissions), Anna University , Chennai – 600 025. If the Hall Ticket is lost, a duplicate Hall Ticket can be obtained on payment of ₹ 100/- on a written requisition to the Director (Admissions), Anna University, Chennai - 600 025, indicating the Registration No. and produce an attested photograph which has been taken from the same negative used for the photo affixed in the application and Hall Ticket with a certificate obtained from the Head of the Institution where he/she has studied or is studying or an officer of Grade A or B to the effect that he/she is a genuine candidate who has appeared for the Entrance Examination.

8.3. The Mark Sheet of the Entrance Examination will be despatched to the candidates after the publication of marks of the Entrance Examination (in the envelope enclosed by the candidate).

The payment for Duplicate Hall Ticket / Mark Sheet must be made in the form of a D.D. obtained from any Nationalised Bank drawn in favour of “The Director (Admissions), Anna University”, payable at Chennai.

9. POST MATIRIC SCHOLARSHIP

In the G.O. (st) No. 6 Adi Dravidar and Tribal Welfare (AD3) Department dated 09.01.2012, G.O. (st) No. 92 Adi Dravidar and Tribal Welfare (AD3) Department dated 11.09.2012 and G.O. (st) No. 16 Adi Dravidar and Tirbal welfare (AD3) Department dated 24.02.2014, the Government have ordered to grant Post Matric scholarship to SC/SCA/ST candidates, whose parental annual income is less than ₹ 2,50,000/- and for SC/SCA converted Christians annual income less than ₹ 2,00,000/- from all the sources shall only be eligible. The eligible candidates have to submit income certificate obtained from appropriate authorities.

10. COUNSELLING

Counselling will be based on the rank and communal reservation. Rank list and counselling schedule will be published in Anna University website. The date of counselling will be informed to the candidates individually through the counselling call letter by ordinary / speed post through self-addressed stamped envelope enclosed by the candidate. Eligible candidates who have applied and whose marks are as specified or above the cut-off mark called for counselling, may appear with their original certificates (List would be available in Anna University website) one hour before their counselling session, irrespective of receipt of individual communication. Candidates are advised to visit Anna University website for counselling details.

11. IMPORTANT DATE

Last date for the receipt of completed applications **: 30.05.2014 - 5.30 pm.**

12. ENCLOSURES

Attested copies of the following certificates have to be enclosed with the application (originals should not be enclosed).

i) X Standard Mark Sheet

ii) XII / H.Sc. Mark Sheet

iii) Degree Certificate or Provisional Degree Certificate. (Candidates appearing for final semester/year exam of the Qualifying Degree in April / May 2014 have to enclose a bonafide certificate from the Head of the Institution where the candidate is studying or attested photocopy of the April / May 2014 University Examination Hall Ticket.

iv) Mark lists of all the semesters / consolidated mark sheet of Qualifying Examination completed.

v) Copy of Permanent Community Certificate issued by the competent authority for BC / BCM / MBC / SC / SCA / ST candidates.

vi) Medical Certificate for Differently abled person (if applicable)

vii) Nativity Certificate (if applicable)

viii) Three self addressed envelopes of size (26.5cm x 11cm) with stamp of ₹ 8/- each for sending Hall Ticket, Mark Sheet and ₹ 20/- within Chennai city and ₹ 40/- for other cities for Counselling Call Letter.

13. MAILING ADDRESS

Completed application should be sent to **"The Director, Centre for Admissions, Anna University, Chennai – 600025".**

Last date for receiving completed filled-in application is 30.05.2014.

The University shall not be responsible for any postal delay.

Applications received after the last date will be rejected. The amount paid towards the cost of application form and Registration will not be refunded under any circumstances.

14. GUIDELINES / SYLLABI FOR THE ENTRANCE EXAMINATION

GUIDELINES

14.1 There will be a separate Entrance Examination on the following subjects based on B.Sc. (Major) Standard (Refer Sl. No. 7 under 11.4).

1. Mathematics 2. Physics 3. Chemistry 4. Geology 5. Media Science 6. Environmental Science.

The duration of Entrance Examination is 2 hours.
The Entrance Examination will be conducted at Anna University, Chennai – 600 025.

14.2 The Question paper will have 100 objective type questions. Each question will have four alternative answers. The candidate has to choose the correct answer and shade the appropriate box against the question in the answer sheet with pencil. **While evaluating the answers, 1 mark will be awarded for each correct answer and 1/4 mark will be deducted for every wrong answer**. However, no deduction will be made for questions left unanswered. Multiple shadings will be considered as wrong answer and 1/4 mark will be deducted.

14.3 The Question Paper will have 100 questions each.

14.4 Candidates choosing the following subjects for appearing in the Entrance Examination will be considered only to the programmes indicated against each.

Sl. No.	Subjects*	Programmes	Group Code
1	Mathematics	M.Sc. (Applied Mathematics)	A
2	Physics	M.Sc. (Material Science and /or M.Sc. (Medical Physics)	B
3	Chemistry	M.Sc. (Applied Chemistry)	C
4	Geology	M.Sc. (Applied Geology)	D
5	Media Science	M.Sc. (Electronic Media)	E
		M.Sc. (Science and Technology Communication)	F
6	Environmental Science	M.Sc. (Environmental Science)	G

* Candidates are informed that they can write the Entrance Examination only on the subject for the programme (as shown in the table above) chosen by the candidate as per Sl.No.1

IMPORTANT NOTE:

Candidate's rank and the date of counselling will be informed individually through the "Intimation of Counselling" (call letter) to the address written by the candidate in the envelope meant for call letter for counselling enclosed with the application, by speed post.

The merit list, counselling schedule, format of "Intimation of Counselling" containing details regarding venue of counselling, Procedure for counselling, Payment of initial amount, list of documents (in original) to be produced will also be published in Anna University website www.annauniv.edu before the commencement of counselling.

Eligible candidates who have applied and whose marks are as specified or above the cut-off mark called for counselling as mentioned in the counselling schedule may appear for counselling with their original certificates (List available in Anna University website) two hours before the counselling session, irrespective of receipt of "Intimation of Counselling" (call letter) by post.

The University is not responsible for non-receipt of call letter or postal and any other delay.

SYLLABI FOR THE ENTRANCE EXAMINATIONS

1. MATHEMATICS

For Admission to M.Sc. (Applied Mathematics)

Part 1: **MODERN ALGEBRA AND ANALYTICAL GEOMETRY: Modern Algebra**: Group - rings and fields - Vector spaces: Hermitian - Unitary and normal operations. **Analytical Geometry** - General equation of conics – tracing of conics –polar form of equations - shortest distance between skew lines - sphere - cone and cylinder– ellipsoid - paraboloid and hyperboloid – equations of normal and tangent planes.

Part 2: **REAL ANALYSIS AND COMPLEX ANALYSIS:** Sequences and Series – Contests - alternating series – Leibnitz test – Uniform convergence – power series – radius of convergence - Open and closed sets - limit points - completeness – uniform continuity - uniform convergence - Riemann integrals - Analytic functions – Characterization for analytic functions - Harmonic functions. conformal mapping – standard transformations - complex integration - Cauchy's theorem and applications – singularities and residues.

Part 3: **VECTOR ANALYSIS, INTEGRATION AND DIFFERENTIAL EQUATIONS**: Gradient –divergence - curl - Line, Surface, Volume integrals – Greens, Gauss divergence and Stokes theorems – Improper integrals – Beta - gamma functions. **ODE:** Linear Equations with constant coefficients - Simultaneous differential equations. **PDE:** General, particular and complete integrals – Lagrange's equation of first order of equation.

Part 4: **NUMERICAL METHODS AND PROGRAMMING IN C**: **Numerical Methods:** Roots of algebraic and transcendental equations - method of bisection – Newton - Raphson method – Trapezoidal and Simpson's rule of numerical Integration – Straight line fitting by square method. **Programming In C:** Constants – variables – standard input / output functions - control statements – Recursions - Arrays – one dimensional and Multi - dimensional arrays.

Part 5: **DISCRETE MATHEMATICS AND GRAPH THEORY: Discrete Mathematics**: Set theory - Permutations and combinations - Inclusion – Exclusion principle – relations – functions - posets – Lattices – Boolean algebra. **Graph Theory:** Graphs and subgraphs – Trees - Eulerian and Hamiltonian graphs – Matching – Planar graphs – Graph colouring.

Part 6: **PROBABILITY, STATISTICS AND LINEAR PROGRAMMING:** Random Variables, Standard distributions – Marginal and Conditional distributions – Correlation and linear regression – Testing of Hypothesis. **Linear programming:** Formulation and its Graphical solution, simplex method.

Part 7: **STATICS AND DYNAMICS:** Statics: Forces: Types of forces – Magnitude and direction of the resultant of the forces acting on a particle – Lami's theorem – Equilibrium of a particle under several coplanar forces – Parallel forces – Moments. Friction: Laws of friction – Angle of friction – Equilibrium of a body on a rough inclined plane acted on by several forces – Centre of gravity of simple uniform bodies – Triangular lamina – Rods forming a triangle – Trapezium – Centre of gravity of a circular arc, elliptic quadrant, solid, and hollow hemisphere, solid and hollow cone. Dynamics: Kinematics – Kinematics of a particle – Velocity – Acceleration – Relative velocity – Angular velocity – Newton's laws of motion – Equation of motion – Rectilinear motion under constant acceleration – Simple harmonic motion – Moment of inertia – Moment of inertia of simple bodies – Theorems of parallel and perpendicular axes, Moment of inertia of triangular lamina – Circular ring – Right circular cone – Sphere.

2. PHYSICS

For Admission to M.Sc. (Material Science) & M.Sc. (Medical Physics)

Mechanics: Linear and angular velocity – Linear and angular acceleration – Rotational kinetic energy – Moment of inertia – Torque and angular momentum – conservation of angular momentum – The center of gravity – stress and strain – variation of pressure with depth – equation of continuity – Bernoulli's theorem and applications – simple harmonic motion – resonance.

General Physics, Sound, Heat and Thermodynamics: Simple wave motion – Doppler effect – superposition of waves – standing waves – reflection and transmission – velocity of sound – ultrasonics and applications – acoustics of buildings – recording and reproduction of sound – Kinetic theory of gases – Laws of thermodynamics – Heat engines, refrigerators – entropy – transfer of heat.

Optics and Spectroscopy: Propagation of light – Reflection and refraction – Polarization – wage-particle duality – Mirrors, Lenses and optical instruments – interference – diffraction – gratings – light spectra – X-ray spectra – Raman spectroscopy.

Electricity, Magnetism and Electromagnetism : Electrostatics – Electric potential – Capacitance and dielectrics – current and resistance – Magnetic materials – hysteresis – electromagnetic induction – Generators and motors – Eddy currents – Oscillation in an LC circuit – LCR circuits.

Atomic Physics, Nuclear Physics and Electronics: Electron theory of metals – atomic structure, X-rays – X-ray Crystallography – lasers – Relativistic momentum and energy – Properties of Nuclei – Radioactivity – Nuclear reactions – Fission and Fusion – Radiation damage – Radiation detectors – Uses of radiation – Semiconductors and insulators – Series and Parallel LCR circuits – Diode Theory – Rectifications and power supply construction – amplifiers – oscillators – Modulation and demodulation – Electromagnetic wave propagation – wave equation – Electromagnetic Radiation.

3. CHEMISTRY
For Admissions to M. Sc. (Applied Chemistry)

Organic Chemistry

1. Structure and bonding – Aromaticity – Inductive effect - Hyper conjugation - Tautomerism
2. Streochemistry - Optical activity and chirality – Cis - trans isomerism - Conformational analysis - Steric srain.
3. Formations and reactions of carbo cations, carbanions and free radicals
4. Acids and bases - Effect of structure on the strength of acids and bases
5. Substitution reactions - Aliphatic nucleophilic substitutions – Aromatic electrophilic substitutions
6. Addition reactions - Addition to carbon-carbon multiple bond - Nucleophilic addition - Electrophilic addition - Free radical addition - Addition to carbon–hetero multiple bond
7. Eliminations
8. Rearrangements – Nucleophilic rearrangements – Electrophilic rearrangements
9. Redox reactions

Inorganic Chemistry

1. Structure of atoms and molecules - Covalent bonding in diatomic molecules - Structure and bonding in organic compounds
2. Condensed phases - Dipole moments - Ionic bonding - structure of solids
3. Acids, bases and non-aqueous solvents
4. Chemistry of the elements-Metals and non metals
5. Chemistry of coordination compounds - Ligand field and molecular orbital theories - Synthesis and reactions of complexes-Isomerism
6. Radioactivity Radioactive disintegration - Detection of nuclear radition - Properties of radioactive rays - Radioactive series - Nuclear stability - Artificial radioactivity

Physical Chemistry

1. Fundamental concepts of thermodynamics – Heat – Work - Internal energy –Enthalpy - First law of thermodynamics - State functions – Thermochemistry -Entropy and second law of thermodynamics
2. Real gases - equation of state - Ciritical state - Law of corresponding states
3. Chemical kinetics - Determination of rate laws - Temperature dependence of reaction rates
4. Electrochemical cells - Galvanic cells - Thermodynamics of galvanic cells - Reversible and irreversible cells - concentration cells - Liquid junction potential
5. Surface chemistry -Colloids and catalysis
6. Solutions - Partial molar quantities - Thermodynamic properties of ideal solutions - Colligative properties - ionic eqilibria
7. Quantum mechanics - Black body radiation - Energy quantization - Photoelectric effect - Bohr's theory of hydrogen atom – de-Broglie hypothesis - Uncertainity principle - Quantum mechanics - Time independent Scrodinger equation - Particle in a one dimentional box.

4. GEOLOGY

For Admission to M. Sc. (Applied Geology)

Part-1: PHYSICAL GEOLOGY AND STRUCTURAL GEOLOGY:

Origin, Age and Interior of earth – Weathering and types soils – Geological action of rivers, wind, Glaciers, sea and ground water – Mountains – Volcancoes – Earthquake – Platetectonics – Isostasy. Stress – Strain Analysis – youngs Module - Attitude of beds use of clinometers and Brunton Compass – Toposheet – Classification, types and recognisation element of folds, faults, unconformities and joints.

Part-2: CRYSTALOGRAPHY AND MINERALOGY:

Symmetry elements, various forms and general symbols for all the major crystallographic classes – physical and optical properties of minerals – Megascopic and Microscopic study of rock forming minerals and other important individual minerals.

Part–3: PETROLOGY:

Characteristic features of Igneous, Sedimentary and Metamorphic rocks, Megascopic and Microscopic study of major groups of rocks. Classification, structures, forms, textures of igneous, Sedimentary and Metamorphic rocks, Binary and Ternary system- Agents and types Metamorphism – Study of all important groups of rocks.

Part-4: STRATIGRAPHY, PALEONTOLOGY & ECONOMIC GEOLOGY:

Principles of Stratigraphy – Physiographic divisions of India – Geology of India - Morphological characteristics of phylum, Brachiopoda, Arthropoda – (Trilobites and Ostrocoda), Echinodermata, Protozoa, Plant fossil, Foraminifera, Index fossils and its application in Coal & Petroleum Industries. Process of formation of mineral deposits – study of major ores and their distribution, origin and occurrences – Iron, Manganese, Copper, Chromate, Lead and Zinc etc., Industrial Minerals – Origin and varieties of coal, Coal fields in India, Mineral resources of Tamil Nadu, Oil fields in India.

Part-5: APPLIED GEOLOGY

Remote Sensing application to Earth Sciences, Physics of the earth – Gravity and Magnetic field – geophysical exploration methods – Geological consideration for dams, reservoirs, Tunnels, landslide – Geochemistry – Distribution of elements, and mining Geology.

5. MEDIA SCIENCE

For Admissions to M.Sc. (Electronic Media) / M.Sc. (Science & Technology Communication) Degree Programmes

UNIT - I FUNCTIONAL ENGLISH

Language capability - Analytical and comprehension skills - Basic grammar – Essential style – Modern usage – Abbreviation - Synonyms – Antonym - Common errors in English – Technical writing.

UNIT - II CURRENT AFFAIRS

General awareness – Aptitude and mental make-up - Reasoning ability – Divergent thinking – Politics and the nation – Finance and economy – Culture – Famous people – General topics – Major inventions – Poems – Sports – Tourism – Universe - Books and authors - Awards and honours.

UNIT - III MEDIA STUDIES

Nature and process of human communication - Functions of communication - Landmarks in mass communication – Communication theories - Press in India - Films – Television – Advertising - Brand awareness and recall - Public relations - Awareness of public debates on matters (polity and economy) – General knowledge - Influencing power equations in the world and their impact on India - International developments - Social history - Understanding of social dynamics.

UNIT - IV BASIC SCIENCES

Life sciences: Understanding different species – Physical sciences: Understanding of basics of sound, light and motion, etc – Applied sciences: Development in space technologies, etc – Environmental science: understanding of ecology and ecological issues – Health sciences – Scientific discoveries and inventors.

UNIT - V INFORMATION TECHNOLOGY

Developments in computers – Convergence in technology – Fundamentals of computer hardware and software – Problem-solving and programme design – Applications of Information and Communication Technologies (ICTs) – New media – Social media – Computer graphics and animation.

6. ENVIRONMENTAL SCIENCE

For Admissions to M.Sc. (Environmental Science)

Part-I: Environmental Science – Structure of Environment – Atmosphere – Lithosphere – Hydrosphere – Biosphere – Global warming ozone depletion Tides and waves – Lakes and Estuaries – Lentic and Lotic Systems – Ecosystem - Components – Concept of Productivity – Ecological pyramids – Cycling of Chemical elements – Biodiversity – Species diversity – Loss of biodiversity – Biodiversity conservation – International protocols. Pollution of water, Air, Noise and Soil – Pollutants – Standards – Entrophication - Physical, Chemical and biological methods of treatment – Environmental awareness and protection – Role of NGO_s and Pollution Control boards.

Part-II: Microbiology: Classification and culturing of microorganisms – Isolation, preservation and maintenance of microorganisms – Nucleic acids – Molecular biology techniques – Microbial nutrition – Aerobic and anaerobic respiration - growth phases – Distribution of Microorganisms – air, soil, water – Extremophiles – Adaptation and survival – Indicator organisms – Effective Microbial solution.

Part–III: Botany: Nomenclature – Classification of Plant Kingdom – Monocots – dicots – classification of algae – salient features of algae – Single cell protein, Biofertilizers – Interaction – positive, negative – Medicinal plants – Fungi – classification, economic importance – Mycorrhiza.

Part-IV: Zoology: Cell – classification and relationship of various phyla- Protozoa – Rhizopoda, Mastigophora, Sporozoa, Cliliophera – Their characteristics and medical importance – Apiculture, Sericulture, lac culture, carp culture, Pearl culture, prawnculture – Infectitious diseases – their vectors, pathogens and prevention – cattle and livestock diseases–their pathogens and vectors.

Part-V: Chemistry: Elements and valency – Mass balance &equation balance, Redox reactions co-ordination compounds - solutions, chemical equilibria, colloids-kinetics, thermodynamics- catalysis, Radiation – Electrochemistry and corrosion chemistry of N,S,C,OH containing organic compounds - Volumetry – Gravimetric analysis, Errors.

Part-VI: Biochemistry : P^H, Acids and Bases, Buffers-Carbohydrates, amino acids, proteins, fats major ad trace elements, Enzymes, Vitamins and Coenzymes, Temperature relationships - Electrophoresis – Chromatography - Spectroscopy.