

VIVEKANANDA COLLEGE

(Residential & Autonomous – A Gurukula Institute of Life-Training)

(Affiliated to Madurai Kamaraj University)

Reaccredited with 'A' Grade (CGPA of 3.57 out of 4.00) by NAAC

TIRUVEDAKAM WEST, MADURAI DISTRICT – 625 234



DEPARTMENT OF MATHEMATICS

B.Sc. MATHEMATICS

SYLLABUS

Choice Based Credit System

(For those who joined in June 2015 and after)

ABOUT THE COLLEGE

Vivekananda College was started by Founder-President Swamiji Chidhbhavanandhaji Maharaj of Sri Ramakrishna Tapovanam, Tirupparaithurai, Trichy in 1971 on the banks of the river Vaigai which is blissfully free from the noise and hurry, the crowds and distraction of the city.

Vivekananda College is a residential college functioning under Gurukula pattern. It is Man-making education, that is imparted in this institution, Culture, character and curriculum are the three facets of ideal education that make man a better man. This is possible only when the teacher and taught live together, The Gurukula system of Training is therefore a humble and systematic attempt in reviving the age old GURUGRIHAVASA for wholesome education, Attention to physical culture, devotion to duty, obedience to teachers, hospitality to guests, zest for life, love for the nation, and above all, humility and faith in the presence of God etc. are the values sought to be inculcated. All steps are taken to ensure the required atmosphere for the ideal life training.

Vivekananda College, Tiruvedakam West, Madurai District-625 234 is an aided college established in 1971 and offers UG and PG courses. This College is affiliated to the Madurai Kamaraj University, Madurai. The College was reaccredited with 'A' grade (CGPA 3.57 out of 4.00) by NAAC IN March 2010.

VISION AND MISSION

Our Vision: To raise an army of neo-graduates steeped in the hoary culture of the motherland and dedicated to serving her as potential leaders in the manifold spheres of national effort.

Our Mission: A harmonious enrichment of physical, emotional and intellectual facets of a student's personality to bring out his inherent PERFECTION.

OBJECTIVES OF THE INSTITUTION

1. To inculcate spiritual, ethical, moral and social values in all disciplines of study.
2. Simultaneous education of the Hand, Heart and Head. Only a sound body can hold a sound mind.
3. Provide opportunities for all round development of the students and excellence in higher education, research and extension in different disciplines.
4. Disseminate the findings of research to the community to facilitate its development.
5. To provide society citizens of sterling character.
6. To cater to the needs of the educationally backward people – the most backward, scheduled caste and tribe.

GURUKULA ADMINISTRATIVE SET UP

Secretary	Swami Niyamananda Maharaj
Principal	Dr. B. Ramamoorthy
Vice-Principal & NAAC Coordinator	Dr. S. Raja
Academic Affairs	Dr. M. Ganesan
Controller of Examinations	Dr. E. Jayakumar
IQAC Coordinator	Dr. S. Raja
IGNOU Coordinator	Sri. V. Parthasarathy
ICT Coordinator	Dr. N.Nagendran
Grievence Cell Coordinator	Dr. T. Kaliappan
Director, Certificate Courses	Dr. N. Nattuthurai
Sessional Examination	Sri. P.Muthukumaran, HOD of Maths
	Sri. P.Natarajan
	Sri. G.Sanjeevi
	Sri. C. Rajan
	Sri. P.Madasamy

I Eligibility For Admission

Admission to B.Sc. – Mathematics Programme is open to candidates with +2 pass with Maths, Physics, Chemistry & Biology as major subjects.

For B.Sc.- Mathematics course offered in the college, a pass in the Higher Secondary Examination conducted by the Government of Tamil Nadu or an examination accepted as equivalent there to by the Syndicate of the MKU, subject to such conditions as may be prescribed therefore.

II Duration

The course is for a period of three years. Each academic year shall comprise of two semesters viz. Odd and Even semesters. Odd semesters shall be from June to November and Even Semesters shall be from December to April. There shall be not less than 90 working days which shall comprise 450 teaching clock hours for each semester (Exclusive of the days for the conduct of university end-semester examinations) for each semester.

III CBCS System

All Programmes offered in the college are run on Choice Based Credit System (CBCS). It is an instructional package developed to suit the needs of students to keep pace with developments in higher education and the quality assurance expected of it in the light of liberalization and globalization in higher education.

IV Semesters:

An academic year is divided into two semesters. In each semester, courses are offered in 15 teaching weeks. Each week has 30 working hours spread over 6 days a week.

V Credits:

The term 'Credit' refers to the weightage given to a course, usually in relation to the instructional hours assigned to it. The total minimum credits, required for completing the B.Sc. Programme is 140. The details of credits for individual components and individual courses are given in the above table.

VI Course:

Each Course is to be designed variously under lectures / laboratory / seminar / practical training / assignments to meet effective teaching and learning needs.

VII Examinations:

i). There shall be examinations at the end of each semester, for odd semesters in the month of October / November; for even semesters in April/May. A candidate who does not pass the examination in any course(s) shall be permitted to appear in such failed course(s) in the subsequent examinations to be held in October / November or April/May.

ii). A candidate should get registered for the first semester examination. If registration is not possible owing to shortage of attendance beyond condonation limit / regulations prescribed or belated joining or on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after the completion of the programme.

VIII Condonation

Students must have 75% of attendance in each paper for appearing the examination. Students who have 65% to 74% of attendance shall apply for condonation in the prescribed form with the prescribed fee. Students who have 50% to 64% of attendance shall apply for condonation in prescribed form with the prescribed fee along with the Medical Certificate. Students who have below 50% of attendance are not eligible to appear for the examination. They shall compensate the shortage after the completion of the programme.

IX Question Paper Pattern

Time: 3 Hours

Maximum Marks: 75

SECTION-A (10 X 1 =10 Marks)**Answer All Questions**

(1-5) Multiple Choice

(6-10) Short Answer Questions

Two questions from each unit

SECTION-B (5 X 7 = 35 Marks)**Answer All Questions**

(11-15) Questions shall be in the format of either (a) or (b)

One question from each unit

SECTION-C (3 X 10 = 30 Marks)**Answer any THREE Questions**

(16-20) One question from each unit.

X Evaluation:

Performance of the students are evaluated objectively. Evaluation is done both internally and externally. They will be assessed continuously through Internal Assessment System and finally through summative (end) semester examination. To assess internally, there will be three examinations conducted centrally with a duration of two hours for each paper. In addition to continuous evaluation, the summative semester examination, which will be a written examination of three hours duration, would also

form an integral component of the evaluation. The ratio of marks to be allotted to continuous internal assessment and to end semester examination is 25 : 75.

The pattern of internal valuation shall be:

Test: 20 Marks (the average of best two tests out of three tests)

Assignment: 5 marks

Total: 25 marks.

In respect of practical papers, the ratio of marks to be allotted to internal assessment and to summative (end) semester examination is 40 : 60. The internal marks will be calculated on the basis of marks secured at the model examination and marks awarded for the preparation of practical note book. The external marks will be calculated on the basis of the marks awarded by the internal examiner and the external examiner at the summative semester examination.

XI Passing Minimum:

There is no passing minimum for Internal Assessment. The passing minimum for external Examinations shall be 27 out of 75 marks and passing minimum for a paper is 40%.

XII Classification of Students:

Candidates who have secured not less than 40% of marks in each paper shall be declared to have passed in that paper. Candidates who obtain 40% and above but below 50% shall be declared to have passed in Third Class. Candidates who obtain 50% and above but below 60% of the aggregate marks in Part-III shall be declared to have passed in Second Class and those who obtain 60% of marks and above shall be placed in the First Class. Candidates who obtain 75% and above shall be declared to have passed in Distinction provided he has not re-appeared for any paper during the course of the study.

XIII Failed Candidates:

A candidate who has arrears in any paper in a semester examination will be permitted to proceed to the next semester classes. A candidate who has arrears may appear again in these failed papers at the November/April examinations. The internal assessment marks already obtained by him shall be carried over for the subsequent appearance also.

XIV Improvement of Internal Marks:

The student desirous of improving the internal assessment marks may request the Head of the Department. After obtaining permission from the Staff Council Meeting by the Head, the student may write improvement examinations in consultation with the course teacher. The marks obtained (when it is more than the previous marks) will be submitted to the Controller of Examinations for further adoption.

XV Study Tour

Students are expected to participate in the field visit and the study tours organized by the department. Though study tour/field trip carries no credit, it is compulsory for the students to attend whereby the students can get an opportunity to gain practical knowledge. As such, observational visit to selected social welfare organizations, industries, trade centres, exhibitions, places of historical importance and the like will be considered as extra-curricular activities.

DEPARTMENT OF MATHEMATICS

Vision:

To raise battalion of Maths graduates equipped with logical thinking and tender heart to serve our motherland as potential leaders in the manifold spheres of national effort.

MISSION:

Enriching the mental, emotional and intellectual facets of maths students to cope up with any career that they choose and to strive to attain perfection in life.

OBJECTIVES:

1. To develop the students' mental faculty to appreciate and enjoy the logical reasoning and hidden connections while learning Mathematics.
2. To provide ample opportunities to excel in learning Mathematics so that he can shine brightly in higher education, research or career that he chooses.
3. To encourage and provide ample opportunities to the Maths students to disseminate his Mathematical knowledge to the younger and tender students community in rural areas.
4. To provide ample mathematically – oriented activities to the students to inculcate spiritual, ethical, moral and social values so that his Hand, Heart, and Head functions inter connectedly and harmoniously.
5. In short, to provide society, citizens of sterling character with sharp intellect.

HISTORY:

Maths was taught as a subject in Preuniversity classes from 1971 onwards – that was the year the college started functioning. Maths as Ancillary subject was offered from the inception of B.Sc. Physics degree, that is from the year 1973-74. From 1980-81 onwards B.Sc Degree in Maths major was offered and so Maths department became a full-fledged one. The college became autonomous in June 1987. So the department had freedom to chart its own course. Syllabus was framed in 1987 and updated periodically to cater to the career needs of the students. But while framing and updating the syllabus, Maths department has always kept in mind the main stake holders are rural students, so Fundamental Mathematics was always a part of the syllabus. When the need arose Computer Oriented Papers, Competitive Mathematics, Operations Research, Vedic Mathematics, Value Education, Environmental Science etc were also incorporated in the syllabus.

The department also did not fall back in repaying its social obligations. Our students, guided by the department teachers, become resource persons to teach Mathematical Concepts, Vedic Maths, yoga etc to the school students. Learning becomes easier by Laboratory Activities and by building Mathematical Models. Our students practise this and their innovations are exhibited and explained in the three day Mathematics Exhibition for Rural Masses once in 2 years. Our student are encouraged to participate enthusiastically in all the college endeavours and activities like NSS, NCC, controlling the crowd during functions and festival times, election duties, temple cleanliness etc.

Department of Mathematics
TIME TABLE

SEMESTER-I

DAY /PERIOD	I	II	III	IV	V
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					

SEMESTER-II

DAY /PERIOD	I	II	III	IV	V
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					

SEMESTER-III

DAY /PERIOD	I	II	III	IV	V
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					

SEMESTER-IV

DAY /PERIOD	I	II	III	IV	V
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					

SEMESTER-V

DAY /PERIOD	I	II	III	IV	V
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					

SEMESTER-VI

DAY /PERIOD	I	II	III	IV	V
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					

SCHEME OF EXAMINATION (For those who joined in June 2013 and after) FIRST SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT11	Tamil: Ikkalak Kavithaiyum Urainadaium	6	3	25	75	100
	Sanskrit	P1LS11	Fundamental Grammar & History of Sanskrit Literature – I					
II	English	P2LE11	Communicative English Spoken English – I	5 1	2	25	75	100
III	Core	05CT11	Algebra and Trigonometry	5	4	25	75	100
	Core	05CT12	Differential Calculus	5	4	25	75	100
	Allied	06AT01	Physics-I	6	4	25	75	100
IV	Non Major	05NE11	Fundamentals of Mathematics	2	2	25	75	100
			TOTAL	30	19			

SECOND SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT21	Tamil: Ikala Ilakkiyamum Makkal Thagavaliyalum.	6	3	25	75	100
	Sanskrit	P1LS21	Poetry, Grammar & History of Sanskrit Literature – II					
II	English	P2LE21	Functional English	5	2	25	75	100
	English	P2LE22	Spoken English-I	1	1	100	--	100
III	Core	05CT21	Integral Calculus	5	4	25	75	100
	Core	05CT22	Analytical Geometry 3D and Vector Calculus	5	4	25	75	100
	Allied	06AT02	Physics-II	4	4	25	75	100
	Allied	06AP03	Practical – I	2	2	40	60	100
IV	Non Major	05NE21	Statistics and Operations Research	2	2	25	75	100
			TOTAL	30	22			

THIRD SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT31	Kappiyamum Pakthi Ilakkiyamum Nadakamum	6	3	25	75	100
	Sanskrit	P1LS31	Prose, Poetics & History of Sanskrit Literature-II					
II	English	P2LE31	English through Drama & Poetry Spoken English – II	4 1	2	25	75	100
III	Core	05CT31	Differential Equations	5	4	25	75	100
	Core	05CT32	Numerical methods	6	5	25	75	100
	Allied	05AT31	Programming in C	4	3	25	75	100
	Allied	05AP32	Practical C	2	2	40	60	100
IV	Skill Based	05SB31	Mathematical Logic	2	2	40	60	100
			TOTAL	30	21			

FOURTH SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT41	Sanga Ilakkiyamum Neethi Ilakkiyamum	6	3	25	75	100
	Sanskrit	P1LS41	Drama and History of Sanskrit Literature – IV					
II	English	P2LE41	English through classiscs	4	2	25	75	100
	English	P2LE42	Spoken English – II	1	1	100	--	100
III	Core	05CT41	Sequence and Series	6	5	25	75	100
	Core	05CT42	Dynamics	5	4	25	75	100
	Allied	05AP41	Programming in C++	3	3	25	75	100
	Allied	05AT42	Practical : Programming in C++	3	2	40	60	100
IV	Skilled based	05SB41	Competitive mathematics	2	2	25	75	100
	Total			30	22			

FIFTH SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
II	English	P2LE51	English for Carrier Development	1	1	100	--	100
III	Core	05CT51	Statistics	5	4	25	75	100
	Core	05CT52	Modern Algebra	5	4	25	75	100
	Core	05CT53	Real Analysis	5	5	25	75	100
	Core	05CT54	Statics	5	4	25	75	100
	Elective	05EP51	Linear Programming	5	5	25	75	100
IV	Skill Based	05SB51	Quantitative Aptitude	2	2	25	75	100
	E.S	ESUG51	Environmental Studies	2	2	25	75	100
			TOTAL	30	27			

SIXTH SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
II	English	P2LE61	English for Professional Excellence	1	1	100		100
III	Core	05CT61	Linear Algebra	5	4	25	75	100
	Core	05CT62	Complex Analysis	6	5	25	75	100
	Elective	05EP61	Graph Theory	5	5	25	75	100
	Elective	05EP62	Operations Research	6	5	25	75	100
IV	Skill Based	05SB61	Boolean Algebra	2	2	25	75	100
	Skill Based	05SB62	Applied Statistics	2	2	40	60	100
	Skill Based	05SB63	Astronomy	2	2	25	75	100
	VE	VEUG61	Value Education	2	2	25	75	100
	EA		Extension Activities		1	--	100	100
			TOTAL	30	29			
			TOTAL HOURS	180				
			TOTAL CREDITS		140			

FACULTY MEMBERS

Sri. P.MUTHUKUMARAN, M.Sc., B .Ed., M.Phil.,
Head & Associate Professor of Mathematics

Sri. P.NATARAJAN, M.Sc., B .Ed., M.Phil.,
Associate Professor of Mathematics

Sri. G.SANJEEVI, M.Sc., B .Ed., M.Phil.,
Associate Professor of Mathematics

Sri. C. RAJAN, M.Sc., M.Phil., B.Ed.,
Assistant Professor of Mathematics

Sri. P. MADASAMY, M.Sc., M.Phil.
Assistant Professor of Mathematics

Kjy; gUtk;
(2015-2016Mk; fy;tpahz;L Kjy; Kjw;gUtj;jpy; NrUk; khzth;fSf;Fhpa
ghlj;jpl;lk;)

PART-I: Language Tamil Subject		
Subject Title: ,f;fhyf; ftpijAk; ciueilAk; - jhs;:1		
Subject Code: PILT11	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative marks: 75	Total Marks: 100

myF: 1 jkpo;r; nra;As;: kuGf;ftpijfs;

1. ghujpahh; ftpijfs;
 1. jkpo; (ehd;F ghly;fs;)
 2. mwpNt nja;tk; (10 fz;zpfs;)
- 2/ ghujpjhrd; ftpijfs;
 1. rQ;rPtp gh;tjj;jpd; rhuy;
- 3/ ehkf;fy; ftpQh; nt.,uhkypq;fk; gps;is
 1. FUNjth; ,uhkfpU\;zh; (3 ghly;fs;)
- 4/ ftpkzp Njrpa tpehafk; gps;is
 1. Nfhtpy; topghL
- 5/ murQ;rz;Kfdhh;
 1. kJiu =kPdhl;rpak;ikj; jpUtbq;gj;J (Kjy; le;J ghly;fs;)

myF: 2 jkpo;r;nra;As;: GJf;ftpijfs;

6. md;id – ftpQh; fz;zjhrd;
7. fpof;F tpopf;Fk; Neuk; - ftpQh; ituKj;J (nfhbku;jjpd; Nth;fs;)
8. mth;fs; tUfpwhh;fs; - K.Nkj;jh – (Rje;jpu jhfk;)
9. GJf;ftpijfs; - f.eh.Rg;ukz;ak; - ftpij
- 10 ehk; ,Uf;Fk; ehL – thf;F tuk; jUk; nja;tk; -jkpod;gd;
- 11 jPh;jj;f;fiuapdpNy – xypngUf;fp – KUF Re;juk;
- 12 ï f;\$ ftpijfs; - f.uhkr;re;jpud;

myF: 3 jkpo; ciu eil ,yf;fpak; - Rthkp rpj;gthde;jhpd; rpe;jidfs;

myF: 4 jkpo; ,yf;fzk; - vOj;J

1. Kjy; vOjJf;fs;
2. rhh;ngOj;Jf;fs;
3. nkhop Kjy; vOj;Jf;fs;
4. nkhop ,Wjp vOj;Jf;fs;
5. ty;nyOj;J kpFk; ,lq;fs;> ty;nyOj;J kpfh ,lq;fs;

myF: 5 jkpo; ,yf;fpa tuyhWk; gad;ghl;Lj; jkpOk;

- m) 1. GJf;ftpijapd; Njhw;wKk; tsh;r;rpAk;
2. kuGf;ftpijapd; Njhw;wWk; tsh;r;rpAk;
- M) kuGg;gpio ePf;Fjy; - gpwnkhopr; nrhw;fis ePf;Fjy; - gpioaw;w njhliuj; Njh;e;jnjLj;jy; - xUik gd;ik kaf;fk; – xU vOj;J xU nkhopf;Fhpa nghUs; - xyp NtWghLfSk; nghUs; NtWghLfSk; - nghUj;jkhd nghUs; - nghUj;jkhd njhlh;

ghIEhy; - jkpo; nra;As; njhFg;G

Rthkp rpj;gthde;jhpd; rpe;jidfs;. – jkpo;j;Jiw ntspaPL

jkpo;r; nra;Al; njhFg;G – jkpo;j;Jiw ntspaPL

ghh;it E}y;:

jkpo; ,yf;fpa tuyhW – **ghf;aNkhp**

jkpo; ,yf;fpa tuyhW – **vk;.Mh;.milf;fyrhkp**

SEMESTER I

(For those who join in June 2015 and after)

PART - I Sanskrit Paper I		
Subject Title : Fundamental Grammar & History of Sanskrit Literature – I		
Subject Code: PILS11	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

FUNDAMENTAL GRAMMER & HISTORY OF SANSKRIT LITERATURE -I

Following portions for Grammar:

Declension of the following nouns and pronouns:

a) Akarantha

Akarantha Masculine, Akarantha Feminine & Akarantha Neuter.

b) Asmad and Yusmad Sabdas

Conjugation of the following verbs in present, past & future tense

Bhava, Pada, Vada, Gacha, Vasa, Dris (Pas) Krida, Dhava.

History of Sanskrit Literature:

a) Vedas and Puranas

b) Itihasa

c) Court Epics – Mahakavyas

Translation:

a) From Sanskrit to English:

Passages exercises 2, 3 and 4 from the prescribed texts.

b) From English to Sanskrit:

Passages exercises 1, 2 and 3 from the prescribed texts.

The prescribed text: “SAHITHYA RASA KANAH”

(Published by A.M.G. Publications, Madurai – 625 016)

Sanskrita Sri Patamala Book 1: Publication: Sanskrit Educational Society,

Madras

– 18.

A short history of Sanskrit Literature

(Published by A.M.G. Publications, Madurai – 625 016)

SEMESTER I
(For those who join in June 2015 onwards)

PART II – Paper I		
Subject Title : Communicative English		
Subject Code: P2LE11	Hours per week: 5	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

Objectives: Total number of hours per semester: **75 Hrs**

- ❖ *To develop listening and speaking skills*
- ❖ *To increase the vocabulary of students*
- ❖ *To improve reading skills*
- ❖ *To develop competency in grammar*
- ❖ *To develop continuous writing*

Unit – I - Listening, Speaking and Reading Components **15 Hrs**

1. Rabindranath Tagore – Cabuliwallah
2. Khushwant Singh – Karma
3. R.K. Narayan – Sweets for Angels
4. Premchand – The Golden Watch

Unit – II

- | | |
|-----------------------------------|--------------------------------------|
| • Sentences, Clauses, and Phrases | • Articles |
| • Parts of Speech | • Adjectives |
| • Nouns | • Verbs |
| • Pronouns | • Adverbs |
| • Determiners | • Some Common Adjectives and Adverbs |

Book: A Textbook of English Grammar and Usage by K.V. Joseph (Page. No.1-184)
Second Edition (2012), TATA McGraw Hill Education Private Limited, New Delhi.

Unit – III Composition **15 Hrs**

- Letter writing – Formal Letters & Informal Letters
- Descriptive Writing – General topics (Paragraph)

Unit – IV - Extensive Reading: Short Stories **15 Hrs**

- Young Naren - by Brahmachari Amal.
[From “A Simple life of Swami Vivekananda” Advaita Ashrama, Kolkata.
- A Story of Initiation - by Sri Aurobindo Society.
From “Stories and Anecdotes from the Mother”
Pondicherry.
- Glory At Twilight - Bhabani Bhattacharya

- The Martyr's Corner- R.K. Narayan

Unit – V - Translation

15 Hrs

Translation of Sentences and Stories from Tamil to English / English to Tamil
(Passages will be supplied)

SEMESTER – I

(For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : Algebra and Trigonometry		
Subject code:05CT11	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ To develop the skill in basic Mathematics.

Unit – I

Imaginary roots, Irrational roots - Relation between roots and coefficients – symmetric functions of the roots – sum of powers of the roots - Newton's theorem – Transformations of equations - Roots with sign changed - Roots multiplied by a given number.

Unit – II

Reciprocal roots - Synthetic division – decreasing and increasing the roots - removal of terms – To form an equation whose roots are any power of the roots– transformation in general.

Unit – III

Descarte's rule of signs – Rolle's Theorem. Multiple roots– finding approximate root using Horner's method

Unit – IV Trigonometry

Expansions – Expansions of $\cos n\theta$ and $\sin n\theta$ and $\tan n\theta$ - Expansion of $\cos^n\theta$ and $\sin^n\theta$ – Expansion of $\sin\theta$ and $\cos\theta$ and $\tan\theta$ in series of ascending powers of Hyperbolic functions, Inverse hyperbolic functions.

Unit – V

Logarithm of complex numbers, Summation of Series: (C+iS method only)

Text book:

1. Algebra vol I –T.K.MANICAVACHAGAM PILLAY
Viswanathan (printers and publishers) Pvt Ltd. Chennai.
For units I,II,III-relevant chapters
2. Trigonometry -T.K.MANICAVACHAGAM PILLAY
Viswanathan (printers and publishers) Pvt Ltd. Chennai.
For units IV, V -relevant chapters

Reference Book:

Algebra by S ARUMUGAM
 Trigonometry Dr. S.Arumugam & Thangapandi Issac
 New gamma Publishing House, Palayankottai.

SEMESTER – I
(For those who joined in June 2015 and After)

PART – III : Core Subject Theory		
Subject Title : Differential Calculus		
Subject Code:05CT12	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks:100

OBJECTIVE:

❖ *To develop the skill in Solving problems*

Unit-I

Methods of differentiation: standard forms – differential coefficient of x^n , e^x , $\log x$, $\sin x$, $\cos x$, $\tan x$, (derivations not included). Differential coefficient of a sum or difference – product rule – Quotient rule – function of function rule – inverse functions – Hyperbolic functions, inverse hyperbolic functions – logarithmic differentiation. Transformations– differentiation of implicit function. Differentiation of one function w.r.t. another function.

Unit-II

Successive differentiation- The n^{th} derivative.-Standard results-trigonometrical transformation -Formation of equation involving derivatives-Leibnitz formula for the n^{th} derivative of a product & related problems

Unit-III

Subtangent and subnormal – differential coefficient of the length of an arc of $y=f(x)$ – Polar coordinates – Angle between the radius vector and tangent – angle of intersection of two curves – length of an arc in polar co-ordinates - Envelope:Method of finding the envelopes.

Unit-IV

Curvature – circle, radius and center of curvature – Cartesian formula for the radius of curvature – The coordinates of center of curvature. Evolute and involute – radius of curvature when the curve is given in polar co-ordinates – pedal equation of a curve – chord of curvatures.

Unit-V

Partial differentiation- Function of function rule- Total differential coefficient- Implicit functions-Homogeneous functions.

Text Book: CALCULUS vol I

T.K.Manikavasakam Pillai & S.NARAYANAN

Vishwanathan (printers and publishers) Pvt Ltd. Chennai.

Reference book:

Calculus by Dr. S.Arumugam, New Gamma publishing Palayamkottai.

SEMESTER - I

(For those who joined in June 2015 and after)

PART – III : Allied Subject		
Subject Title : Ancillary Physics – I		
Subject Code: 06AT01	Hours per week: 4	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE

- ❖ *This course aims at study of mechanics, properties of matter, sound, thermodynamics, optics and spectroscopy*

UNIT I : MECHANICS

The Basic forces in nature – Central forces – Conservative forces – Non-conservative forces – Limiting friction, Coefficient of friction and Angle of friction – Laws of friction – Work: Introduction – Work done by a varying force – Energy: Introduction – Kinetic energy – Potential energy – Power – Kepler’s laws of planetary motion – Newton’s law of gravitation – Mass and density of earth – Determination of G (Boy’s method) – Compound pendulum – Artificial Satellites.

UNIT II: PROPERTIES OF MATTER

Elasticity: Introduction – Different moduli of elasticity – Poisson’s ratio – Bending of beams (Uniform and Non-uniform) – I section girders – Rigidity modulus by Torsion pendulum – Viscosity: Introduction - Derivation of Poiseuille’s formula – Bernoulli’s theorem – Applications of Bernoulli’s theorem: Venturimeter – Pitot tube.

UNIT III: SOUND

Simple Harmonic Motion – Composition of two Simple Harmonic Motions in a straight line – Beats – Progressive waves – Stationary waves – Properties of stationary waves – Melde’s experiment – Ultrasonics.

UNIT IV: THERMODYNAMICS.

Zeroth law of thermodynamics – First law of thermodynamics – Specific heats of a gas – Work done during an isothermal process – Work done during an adiabatic

process – Heat engines – Carnot’s cycle – Second law of thermodynamics – Carnot’s theorem.

UNIT V: OPTICS AND SPECTROSCOPY.

Interference: Light waves – Superposition of waves –Young’s double slit experiment-wave front division – Conditions for interference – Diffraction: Huygens-Fresnel theory – Distinction between interference and diffraction – Fresnel and Fraunhofer types of diffraction – Polarization: Retarders or wave plates – Laurent’s half shade Polarimeter. Introduction – Infrared spectroscopy – Ultraviolet spectroscopy – Rayleigh scattering – Raman effect: Discovery – Experimental study of Raman effect – Quantum theory of Raman effect – Applications.

TEXT BOOKS:

UNIT I, II & III: Mechanics, Properties of Matter and Sound - R. Murugesan

Chapters: 1.1 to 1.7, 1.9 to 1.14, 3.1 to 3.5 and 3.9, 4.1 to 4.9 & 4.13, 5.1, 5.2, 5.5, 5.6 & 5.7, 6.1, 6.2, 6.5-6.9 & 6.12

UNIT IV: Heat Thermodynamics and Statistical Physics-Brij Lal, N. Subrahmanyam,& P.S. Hemne (Multicolour edition – 2007) S. Chand & Company Ltd., New Delhi. Chapters: 4.2, 4.7, 4.9, 4.12, 4.13, 4.21, 4.24, 4.28, 4.29

UNIT V: A text Book of Optics - N. Subrahmanyam, Brij Lal, M.N. Avadhanulu S. Chand & Company Ltd., New Delhi (Multicolour Edition – 2006)

Chapters: 14.2, 14.3, 14.5, 15.7, 17.2, 17.6, 17.7, 20.17, 20.26 Optics and Spectroscopy - R. Murugesan & Kiruthiga Sivaprasath (Sixth Revised Edition 2006) S. Chand & Company Ltd., New Delhi Chapters: 5.1 to 5.8

SEMESTER – I
(For those who joined in June 2015 and After)

PART – IV : Non Major Elective		
Subject Title : Fundamental of Mathematics		
Subject Code:05NE11	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill in Basic Mathematics.*

Unit-I

Theory of indices and Ratio and Proportion.

Unit-II

Distance between two points, Equation of a line [except normal forms].

Unit-III

Theory of Matrices-Addition, multiplication of two matrices.

Unit-IV

Finding the n th term and sum to n terms of an A.P and G.P.... -Arithmetic Mean.

Unit-V

Solving the quadratic equations – finding the roots – forming the equation when the roots are given (only second degree).

TEXT BOOK:

Business mathematics By.DR.M.Manoharan & DR.C.Elango
Palani Paramount publications, Palani.2006 edtn.

Reference Book

Business Mahtematics By DR.V.R.Vittal, Margham publications Chennai.

,uz;lhk; gUtk; - ghIj;jpl;lK;
(2015-2016Mk; fy;tpahz;L ,uz;lhk;; KJw;gUtj;jpy; NrUk;
khzth;fSf;Fhpa ghIj;jpl;lK;)

PART-I: Language Tamil Subject		
Subject Title: ,f;fhy fij ,yf;fpaKk; kf;fs; jftypaYk; - jhs;;2		
Subject Code: PILT21	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative marks: 75	Total Marks: 100

myF: 1 jkpo;r; rpWfij ,yf;fpak; - rpWfijfs; gj;J

myF: 2 jkpo; ehty; ,yf;fpak; - Jzpe;jtd;

myF: 3; kf;fs; jftypay;; - ghlg;gFjpfs;

1. ,jopay; tsh;r;rp tuyhW
2. nra;jpj;jhspd; mbg;gil tuyhW
3. ,e;jpa ,jopay; - njhlf;f fhyk;
4. 19Mk;
5. ,e;jpa tpLjiy
6. ,jo;fs; njhlq;Ftjw;Fhpa
7. nra;jpj;jhs; eph;thf mikg;G

myF: 4 jkpo; ,yf;fzk; - nrhy;

1. ehd;F tifr; nrhw;fs;
2. tpdh – tpil tiffs;
3. Ntw;Wikfs;
4. njhiffs; -

Ntw;Wikj; njhif> tpidj;njhif> gz;Gj;njhif.
md;nkhopj;njhif

ctikj;njhif. ck;ikj;njhif.

myF: 5 jkpo; ,yf;fpa tuyhWk; gad;ghl;Lj;jkpOk;

- m) 1. rpWfijapd; Njhw;wKk; tsh;r;rpAk;
2. Gjpd ,yf;fpaj;jpd; Njhw;wKk; tsh;r;rpAk;
- M) njhlUk; njhlh;Gk; mwpjy; - ghpj;J vOJjy; - nghUe;jhr;
- nrhy;iyf; fz;lwpjy; – t*Tr;nrhw;fis ePf;fpa njhliuf;
- Fwpg;gpLjy;- nrhw;fis mfu thpirg;gLj;jy;- Nth;r;nrhy;iyj;
- Njh;T nra;jy; - vt;tif thf;fpak; vdf; fz;L vOJjy; - nrhw;fis
- xOq;FgLj;jpr; nrhw;nwhlh; Mf;Fjy; - Mq;fpyr;nrhy;Yf;F
- epfuhd jkpo;r; nrhy; mwpjy;.

ghIE}y;:

- 1.rpWfijfs; gj;J – njhFg;ghrphpah;. Kidth;. M.N[hrg;rhhyyp - M.jh];

- epA nrQ;Rhp Gf; \T];(gp.ypl;). nrd;id – 98.
 2.ehty; - Jzpe;jtd; - ty;ypf;fz;zd;-ghit gg;spNf;d;];. nrd;id -14.
 3.,jypay; fiy – lhf;lh.kh.gh.FUrhkp
 4.jkpo; ,yf;fpa tuyhW – **ghf;aNkhp**

ghh;it E}y;:

1. kf;fs; jfty; njhlh;gpay; mwpKfk; - lhf;lh; fp. ,uhrh.
2. ,jopay; - r.<];tud;
3. ,jopay; - lhf;lh; ,uh.Nfhjz;lghzp
4. ,jopay; Xh; mwpKfk; - lhf;lh; me;Njhzp ,uhR.
5. jkpo; ,yf;fpa tuyhW – **vk;.Mh;.milf;fyrhkp**

SEMESTER – II: PAPER – II

(For those who join in June 2015 and after)

PART – I Sanskrit Paper II		
Subject Title : Poetry Grammar & History of Sanskrit Literature – II		
Subject Code:P1LS21	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

POETRY

Selected portions from the : KALIVIDAMBANAM &

SABHARANJANASATAKAM

Published by Sadguna Publications, Cidambaram

Kalividambanam

Unit I : Scholars and Teachers Verse No.1-10

Unit II : Astrologers & Physicians V.14-30

Unit III : Relatives & Pseudo monks Vv.41-50, 84-93.

Sabharanjanasatakam

Unit IV : Wisdom and it's acquisition Vv.1-12

Unit V : Donor and Donation and Values of Human Vv.31-42, 77-91.

LYRICS & CHAMPU KAVYAS –

A short history of Sanskrit Literature

(Published by A.M.G. Publications, Madurai – 625 016 Page No. 51 – 60, 42 – 45)

SEMESTER II
(For those who join in June 2015 onwards)

PART II – Paper I		
Subject Title : Functional English		
Subject Code: P2LE21	Hours per week: 5	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

Objectives: Total number of hours per semester: **75 Hrs**

- ❖ *To develop listening, speaking and reading skills*
- ❖ *To develop Information and Communication Technology (ICT) skills*
- ❖ *To develop presentation skills*
- ❖ *To develop competency in grammar*

Unit – I Listening, Speaking and Reading Components **15 Hrs**
Prose

- | | | |
|--------------------------------|---|--------------------------|
| 1. My Visions for India | - | A.P.J. Abdul Kalam |
| 2. Mahatma Gandhi | - | V.S.Srinivasa Sastri |
| 3. Computers and Common Sense | - | Roger Hunt & John Shelly |
| 4. The Golden Age of Cricket | - | Neville Cardus |
| 5. On Keyhole Morals | - | A.G. Gardiner |

Unit – II Language Study **15 Hrs**

- Tenses and Their Uses
- Concord or Agreement
- Conditional Sentences
- Active and Passive Voice
- Preposition

Book: *A Textbook of English Grammar and Usage* by **K.V.Joseph**
Second Edition (2012), TATA McGraw Hill Education Private Limited, New Delhi.

Unit – III Composition **15 Hrs**

- Letter writing – Informal Letters
- Hints Development
- Descriptive Writing

Unit – IV Extensive Reading: Short Stories **15 Hrs**

Extensive Reading

1. Upper Division Love - Manohar Malgonkar
2. The Tiger in the Tunnel - Ruskin Bond
3. A Devoted Son - Anitha Desai
4. *The Lost Child* - Mulk Raj Anand
5. Tree Speaks - C. Rajagopalachari

Unit – V Translation

15 Hrs

- Translation of Sentences and Stories from Tamil to English/English to Tamil (Passages will be supplied)

SEMESTER – II

(For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : Integral Calculus		
Subject Code:05CT21	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ To develop the skill of solving problems.

Unit-I: Methods of Integration

Introduction – definite integral – methods of integration – integral of function containing linear function of x – integrals of the function $f(x)dx$, $F(f(x))f(x)dx$ – integration of rational, irrational and algebraic functions.

Unit-II:

Properties of definite integrals–integration by parts–Reduction formulae: for integrands $x^n e^{ax}$, $x^n \cos ax$, $\sin^n x$, $\cos^n x$, $\cot^n x$, $\sec^n x$, $\tan^n x$, $\operatorname{cosec}^n x$, $\sin^m x \cos^n x$.

Unit – III

Double Integral– evaluation of double integral– double integral in polar coordinates –Beta and Gamma functions

Unit –IV

Triple integrals: – Jacobian – change of variables – Transformation from Cartesian to polar –Area by double integral - Cartesian to spherical polar – volume by triple integral.

Unit -V

Fourier series – definition – even and odd functions – expanding $f(x)$ as fourier series in $(-\pi, \pi)$, $(0, 2\pi)$; Half range series – development of cosine, sine series – change of interval – expanding $f(x)$ as fourier series in $(-l, l)$, $(0, 2l)$ and $(0, l)$.

Text Book :

Calculus Vol II by S. Narayanan, T.K. Manicavachagom Pillay.
S.Vishvanathan (Printers & Publishers) Pvt Ltd Chennai.

Reference Book:

CALCULUS

Dr.S.Arumugam New Gamma Publishing House, Palayamkottai.

SEMESTER – II

(For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : Analytical Geometry (3D) and Vector Calculus		
Subject Code:05CT22	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill in solving problems.*

Unit I - Coordinate System and Planes

Rectangular Cartesian coordinates - direction cosines – direction ratios – angle between 2 lines-condition for parallelism and perpendicularity- planes – Equation of plane - different forms – general form, three point form; intercept form, normal form-angle between two planes – length of the perpendicular from a point to a plane-angle bisectors of two planes.

Unit – II Straight line:

Equation of a straight line-different forms – Non-symmetric form, symmetric form, two point form – A plane and a line-coplanar lines-condition for coplanarity- angle between a line and a plane - Equation of a plane containing two lines – Length of perpendicular from a point to a line - skew lines – shortest distance between two skew lines.

Unit – III The Sphere:

Equation of a sphere – Different forms – Centre radius form, diameter form-Tangent line and tangent plane – Angle of intersection of two spheres- section of a sphere.

Unit – IV Vector Differentiation

Differentiation of vectors – Gradient of a vector – geometrical interpretation – directional derivative and its maximum value – divergence and curl of vector – solenoidal and irrotational vectors – Laplacian operator – Harmonic vectors – Connected theorems and problems.

Unit – V Line and Surface integrals :

Vector integration – Line integrals – work done by a force-surface integrals – integral theorems – Green's theorem in plane – Stoke's theorem- Gauss divergence

theorem. (Only statements – without proof) Verification of theorems – simple problems.

Text Book: 1) Analytical Geometry 3 Dimensions, 2) Vector Calculus
T.K.Manicavachagom Pillay. S.Vishwanathan(printers and publishers)
Pvt Ltd. Chennai

Reference book:

Analytical Geometry 3D & Vector Calculus by S.Arumugam & Thangapandian Isaac.
New Gamma Publications Company, Palayamkottai.

SEMESTER - II

(For those who joined in June 2015 and after)

PART – III : Allied Subject		
Subject Title : Ancillary Physics – II		
Subject Code: 06AT02	Hours per week: 4	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE

❖ *This course aims at study of electricity, magnetism, electronics, theory of relativity and atomic physics*

UNIT I: ELECTRICITY

Coulomb's law – Electric field – Electric Field due to a Point Charge – Electric Dipole – Potential Energy of a Dipole in a Uniform Electric Field – Electric Field due to an Electric Dipole at an axial Point – Electric Field at a Point on the Equatorial line – Electric Field due to an Electric Dipole at any Point – Lines of Force – Gauss's Law – Differential Form of Gauss Law – An Insulated Conductor – Electric Field due to a Uniformly Charged Sphere – Electric Potential : Potential Difference – Electric Potential as line Integral of Electric Field – Potential at a Point due to a Point Charge – Relation between Electric Field and Electric Potential.

UNIT II: MAGNETISM

Magnetic Effect of Electric Current: Introduction – The Biot Savart Law – Magnetic Induction at a Point due to a Straight Conductor Carrying Current – Moving Coil Ballistic Galvanometer – Comparison of Two Capacitances Using B.G – Comparison of Two emf's of Two Cells using B.G.

UNIT III: ELECTRONICS

Zener Diode – Light Emitting Diode (LED) – Photo Diode – Transistor – Naming the Transistor Terminals – Some Facts about the Transistors – Transistor

Action – Transistor Symbols – Transistor as an Amplifier – Transistor Connections – Characteristics of Common Emitter Connection – Binary Number System – Decimal to Binary Conversion – Binary to Decimal Conversion – Logic Gates – OR Gate – AND Gate and NOT Gate – Combination of Basic Logic Gates – NAND Gate as a Universal Gate.

UNIT IV: THEORY OF RELATIVITY

Galilean Transformation Equations – Special theory of Relativity – The Lorentz Transformation Equations – Length Contraction – Time Dilation – Variation of Mass with Velocity – Mass Energy Equivalence

UNIT V: ATOMIC PHYSICS

Rutherford's Experiments on Scattering of Alpha Particles – Bohr Atom Model – Production of X- Rays – Bragg's Law – The Bragg X- ray Spectrometer

TEXT BOOKS:

UNIT I & II: Electricity and Magnetism- R. Murugesan
(Reprint with correction 2008)

Chapters: 1.2, 1.4, 1.5 to 1.11, 2.2 to 2.5, 3.1 to 3.4 10.1 to 10.3, 10.11, 10.15 & 10.16.

UNIT III: Principles of Electronics - V.K.Metha & Rohit Metha
(Multicolour Edition – 2006) S. Chand & Company Ltd., New Delhi
Chapters: 10.1, 10.2, 10.7, 11.1 to 11.7, 11.11, 28.3, 28.5 to 28.7, 28.9 to 28.13.

UNIT IV & V: Modern Physics - R. Murugesan & Kiruthiga Sivaprasath
(Multicolour Edition – 2007)S. Chand & Company Ltd., New Delhi
Chapters: 1.4, 1.7 to 1.10, 1.13, 1.14, 6.2, 6.4, 7.2, 7.6

SEMESTER - II
(For those who joined in June 2014 and after)

PART – III : Allied Physics Practical		
Subject Title : Practical		
Subject Code: 06APO3	Hours per week: 2	Credit: 2
Sessional Marks: 40	Summative Marks: 60	Total Marks: 100

List of Experiments

1. Non-Uniform Bending – Pin and Microscope
2. Non-Uniform Bending – Optic lever
3. Uniform Bending – Pin and Microscope
4. Uniform Bending – Optic lever
5. Compound Pendulum
6. Torsion Pendulum
7. Sonometer – Verification of Laws (1st law & 2nd law)
8. Melde's String
9. Calibration of low range Voltmeter – Potentiometer
10. Viscosity by Stoke's method
11. Newton's rings – Determination of Radius of curvature
12. Air wedge – Thickness of a wire
13. Spectrometer – Refractive Index
14. Spectrometer – Grating -Normal incidence
15. Carey Foster Bridge
16. Diode Characteristics
17. Zener Diode Characteristics

18. Logic Gates – AND, OR, NOT
19. Comparison of capacitances – B.G.
20. Thermal conductivity of Cardboard – Lee's method

SEMESTER – II

(For those who joined in June 2015 and after)

PART – IV : Non Major Elective		
Subject Title : Statistics and Operation Research		
Subject Code: 05NE21	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill in solving problems.*

Unit-I: Averages : Mean, median, mode.

Unit-II: Deviation : Quartile deviation – Standard deviation.

Unit-III: Graphical solution of L.P.P.

Unit-IV: Transportation problem.

Unit-V: Assignment problem.

Text Book:

Statistics By Dr.S.Arumugam, New Gamma publications Palayamkottai. Edition 2013.
Operations Research By Dr.S.Arumugam. Pub: Sci Tech, Chennai, Edition 2006.

REFERENCE BOOK:

Statistics: By s.c.Guptha & V.K.Kapur Sultan, Chand & sons New Delhi.
Operations Research: By Kanti Swarop P.K.Guptha and Manmohan 5th edition 2005.

**%d;;whk; gUtk; - ghIj;jpl;lK;
(2015-2016Mk; fy;tpahz;L ,uz;lhk; KJw;gUtj;jpy; NrUk;
khzth;fSf;Fhpa ghIj;jpl;lK;)**

PART-I: Language Tamil Subject		
Subject Title: fhg;gpaKk; gf;jp ,yf;fpaKk; ehlfKk; - jhs;;3		
Subject Code: P1LT31	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative marks: 75	Total Marks: 100

myF: 1 jkpo;f; fhg;gpa ,yf;fpak;

- 1.rpyg;gjpfhuk; - tof;Fiu fhij
2. kzpNkfiy – MGj;jpwd; jpwk; mwptpj;j fhij
3. fk;guhkhazk; - thyp tijg;glyk;
4. tpy;ypg;Gj;J}uh; ghujk; - fz;zd; J}Jr;rUf;fk;
5. fe;j guhzk; - maidr; rpiw ePf;Fk; glyk;

myF: 2 jkpo; gf;jp ,yf;fpak;

1. ,NaR fhtpak; - kiyg;nghypT – fz;zjhrd;
2. guhguf;fz;zp – jhAkhdt; - 10 ghly;fs;
3. jpUg;ghit – Mz;lhs; - 10 ghly;fs;
4. Njthuk; - jpUQhdrk;ge;jh; (jpUNtlfg; gjpfk;)
5. jpUthrck; - khzpf;fthrfh; - gpbj;j gj;J
6. jpUke;jpuk;; - jpU%yh; - 10 ghly;fs;

myF: 3 ehlfk;

itifapy; nts;sk; tUk; - NrJgjp

myF: 4 jkpo; ,yf;fzk;

1. mzpfs; - ctik – cUtk; - gpwpJ nkhopjy; - jw;Fwpg;Ngw;wk; tQ;rg;Gfor;rp
– rpNyil – Ntw;Wik mzp
2. gh tiffs; - ehd;F tiff;ghf;fs;
3. Ntw;Wikfs;
4. fbjk; tiujy; - tpz;zg;gk; - Gfhh;f; fbjk; - ghul;Lf;fbjk;

myF: 5jkpo; ,yf;fpa tuyhWk; gilg;ghw;wYk;

- m) 1. fhg;gpa ,yf;fpa tuyhW
2. gf;jp ,yf;fpa tuyhW
- M) gj;jphpf;ifr; nra;jp vOJjy; - Neh;fhzy; vOJjy; - JZf;fs;
vOJjy;

ghIE}y; :

1. jkpo;r; nra;Al; njhFg;G – jkpo;j;Jiw ntspaPL
2. ehlfk; - itifapy; nts;sk; tUk; - NrJgjp. ghitgg;spNf\ d;];

ghh;it E}y;:

- jkpo; ,yf;fpa tuyhW – **ghf;aNkhp**
jkpo; ,yf;fpa tuyhW – **vk;.Mh;.milf;fyrhkp**

SEMESTER – III : PAPER – III
(For those who join in June 2015 and After)

PART – I Sanskrit Paper III		
Subject Title : Prose ,Poetics & History of Sanskrit Literature – III		
Subject Code: P1LS31	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

PROSE

Following portions from the prescribed text: ‘SAHITYA RASA KANA’
- Published by J.M. Publications, Madurai.

1. GURU BHAKTHI
2. MATANGA CHARITAM
3. SAMSARGAJAH DOSHAGUNAAH BHAVANTHI
4. AKARNA HRIDAYO GARDABAH
5. VASUDEVA DAUTHYAM

POETICS

ALAMKARAM (POETICS) FROM THE TEXT BOOK: SAHITYA RASAKANA:-
UPAMA, ANANVAYA, UTPREKSHA, ATHISAYOKTHI, ULLEKHA,
VYATHIREKA, SAMASOKTHI, SLESHA, ARTHANITHARANYASA.

HISTORY OF LITERATURE

Prose Romance,
Historical Kavyas, Popular Tales.

A short history of Sanskrit Literature

(Published by A.M.G. Publications, Madurai – 625 016

Page No. 35 – 40, 40 – 44, 45 - 50)

SEMESTER III
(For those who join in June 2015 onwards)

PART II – Paper I		
Subject Title : English through Drama and Poetry		
Subject Code:P2LE31	Hours per week: 4	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVES: **Total number of hours per semester: 60 hours**

- ❖ *To make students read and appreciate English Plays*
- ❖ *To make students appreciate English poetry*
- ❖ *To motivate students to face Competitive Examinations*
- ❖ *To develop continuous writing in English*
- ❖ *To make students read extensively*

Unit I – One Act Plays **15 Hrs**

1. The First and the Last - John Galsworthy
2. Remember Caesar - G.Devoit
3. The Sheriff's Kitchen - Ronald Gow
4. The Boatswain's Mate - W.W.Jacobs and H.C. Sargent
5. The Pathfinder - Hermon Ould

Unit II – Poems **15 Hrs**

1. Githanjali (Poem 50) - Rabindranath Tagore
2. The Earthen Goblet - Harinranath Chattopadhyaya
3. La Belle Dame Mercy - John Keats
4. Fidelity - William Wordsworth
5. Quality of Mercy - William Shakespeare
6. The Tiger and the Deer– Sri Aurobindo

Unit - III Objective English **10 Hrs**

- Comprehension
- Spotting the Errors

- Sentence rearrangement
- Sentence Fillers
- Cloze test or Numbered Gaps

Text Book: *Objective English for Competitive Examinations* – Hari Mohan Prasad, Uma Rani Sinha, Tata McGraw Hill Education Private Limited, New Delhi. 2010, Fourth Edition

Unit – IV Composition **10 Hrs**
 ➤ Dialogue Writing
 ➤ Paragraph Writing

Unit – V Extensive Reading **10 Hrs**
 Hayavadana – Girish Karnad, Oxford University Press

SEMESTER – III
(For those who joined in June 2015 and after)

Part – III : Core Subject Theory		
Subject Title : Differential Equations		
Sub. Code: 05CT31	Hours per week: 5	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

5 Hours / Week)

OBJECTIVE:

- ❖ *To develop the skill in Solving differential equations.*

UNIT I

Differential equations of first order: formation of differential equations – homogenous equations – non homogenous equations – Linear equations – Bernoullis equations – Exact equations.

UNIT II

Linear differential equations with constant coefficients – Particular integrals of the form e^{ax} , $\cos ax$, $\sin ax$, x^m , e^{ax} V– Equations with variables coefficients – equations reducible to the linear homogenous equations.

UNIT III

Variation of parameters – Simultaneous differential equations – Simultaneous equations with constant coefficients – Total differential equations.

UNIT IV

Laplace transformations – the inverse Laplace transformations – solving differential equations using Laplace transformations.

UNIT V

Partial differential equations – derivation of partial differential equations – different integrals of partial differential equations – solutions of partial differential equations in some simple cases – standard types of pde's – standard I, II, III, IV– Lagrange's equations.

TEXT BOOK: CALCULUS –vol III

S. NARAYANAN

T.K.MANICAVACHAGAM PILLAY
S.Viswanathan (printers & publishers) Pvt Ltd.

REFERENCE BOOK:

Differential equations, By DR.S.ARUMUGAM
New Gamma Publishing House, Palayamkottai.

SEMESTER – III
(For those who joined in June 2015 and After)

Part – III : Core Subject Theory		
Subject Title : Numerical Methods		
Sub. Code: 05CT32	Hours per week: 6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill of solving problems.*

UNIT I

Algebraic and Transcendental Equations: Errors in numeric computations-iteration method – Aitken's Δ^2 method – Bisection method –Regula falsi method – Newton – Raphson method. simultaneous Equations: Back substitutions – Gauss Elimination method – Gauss Jordan Elimination method – Calculation of inverse of a matrix – Gauss – jacobi iteration method – Gauss – Seidal iteration method.

UNIT II

Finite Differences and interpolation : Difference operators – other difference operators – Difference equations – Formation of equations – Newton's interpolation formula – Central difference interpolation formula – Largrange's interpolation formula – Divided difference, formula-Inverse interpolation.

UNIT-III

Numerical Differentiation : Derivatives using Newton's forward and backward difference formula – Central difference (Stirling's formula) Maxima and Minima of the interpolating polynomial.

UNIT-IV

Numerical Integration: Newton – Cote's quadrature formula-Trapezoidal Rule – Simpson's One-third rule-Simpson's Three eighth rule – Wedley's rule.

UNIT-V

Numerical solution of differential equation: Taylor series method – Picards method – Euler’s method – Runge-Kutta method-Predictorcorrector formulae.

Text Books

Numerical Analysis -

By Dr.S.Arumugam, Prof. A.Thangapandi Issac. & Dr.A.Somasundaram. New Gamma Publishing House, Palayamkottai.

Reference Books

Numerical Methods -By A.Singaravelu, Meenakshi Agency – Chennai.

SEMESTER – III **(For those who joined in June 2013 and after)**

Part – III : Allied Subject Theory		
Subject Title : Programming in C		
Sub. Code: 05AT31	Hours per week: 4	Credit:3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ *To understand the theory of Computers.*
- ❖ *To develop the skill in writing Programmes.*

UNIT I:

Character set – C tokens – key words and identifiers – constants – variables – Data types – Declaration of variables – Assigning values to variables – Defining symbolic constants – Operators: arithmetic, relational and logical operators – Assignment – Increment and decrement, conditional operators - Arithmetic expressions – Type conversions – Managing input output operations.

UNIT II:

Decision making and branching: If statements (all forms) – switch statement - Operator– Goto statement – loops: While, do, for statements – Jumps in loops.

UNIT III:

Arrays : One, two dimensional , multi dimensional arrays – String handling Reading, writing, comparison concatenation of strings – Table of strings.

UNIT IV:

User defined functions – category of functions – Handling non-integer functions – Functions with arrays – structures and unions : structure initialization - comparison of structure variables - Arrays of Structures – Arrays within Structures – structures within structures – structures and functions – unions.

UNIT V:

Pointers: Accessing address of a variable - pointer expressions – Pointers and scale factors – pointers and arrays, strings, functions and structures.

Files: Opening and closing a file - input/output operations on files – Random access to files.

Text book:

Programming in Ansi C BY E.Balagurusamy

Publishers: Tata Mc Graw Hill Publishing Company Ltd, New Delhi.

Reference Books:

Schaum's Outline Series Programming with C By: Byron Gottfried (Second Edition)

Publishers: Tata Mc Graw Hill Publishing Company Ltd, New Delhi.

SEMESTER – III

(For those who joined in June 2015 and after)

Part – IV : Skill Based Subject		
Subject Title : Mathematical Logic		
Sub. Code: 05SB31	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the knowledge in logic.*

UNIT I

Introduction - Statements and Notation – Connectives

UNIT II

Statement Formulas – Well formed formulas

UNIT III

Tautology

UNIT IV

Equivalence of formula – Truth table method – Replacement Process

UNIT V

Law of Duality – Tautological Implications

Text Book

Discrete Structures and Graph Theory

Author

Gajavelli. S.S. Bhisma Rao.

Publications

Scitech Publications (India) Ltd. Chennai-600 017

Reference Book Discrete Mathematics
Dr.Mk.Venkataraman
Dr.N.Sridharan
Dr.N.Chandra Sekaran
The National Publishing Company Chennai.2003-Edition

**ehd;fhk; gUtk; - ghIj;jpl;lk;
(2015-2016Mk; fy;tpahz;L ,uz;lhk; KJw;gUtj;jpy; NrUk;
khzth;fSf;Fhpa ghIj;jpl;lk;)**

PART-I: Language Tamil Subject		
Subject Title: rq;f ,yf;fpaKk; ePjp ,yf;fpaKk; - jhs;;4		
Subject Code: P1LT41	Hours per week: 6	Credit: 3
Sessional Marks: 25	Summative marks: 75	Total Marks: 100

myF: 1 jkpo;r; rq;f ,yf;fpaK;- gj;Jg;ghI;L

1. gj;Jg;ghI;L – Ky;iyg;ghI;L jkpo;r; nra;As; njhFg;G –jkpo;j; Jiw ntspaPL

myF: 2 jkpo;r; rq;f ,yf;fpaK; - vl;Lj;njhif

1. ew;wpiz
2. FWe;njhif
3. fypj;njhif
4. mfehD}W
5. GwehD}W
6. ghpggly;

myF: 3 jkpo; ePjp ,yf;fpaK;

1. jpUf;Fws; : nra;ed;wpawpjy; - mjpfhuk; -11
fhykwpjy; - mjpfhuk; - 49
Fwpg;gwpjy; - mjpfhuk; 71
2. gonkhop ehD}W – fy;tp mjpfhuk;
3. ehybahh; - fy;tp mjpfhuk;

myF: 4 jkpo; ,yf;fzk; - nghUs;

1. mfg;nghUs; - mfj;jpizfs;
2. Gwg;nghUs; -Gwj;jpizfs;
3. cs;Siw ,iwr;rp

myF: 5 jkpo; ,yf;fpa tuyhWk; gad;ghI;Lj;jkpOk;

- m) 1. rq;f ,yf;fpa tuyhW
 2. ePjp ,yf;fpa tuyhW
 Gj;jfkjpg;giu –jkpo;j; jpiug;gl tpkh;rdk;.

M)

ghl E}y;:

1. jkpo;r; nra;As; njhFg;G –jkpo;j; Jiw ntspaPL
2. jkpo;r; nra;As; njhFg;G –jkpo;j;Jiw ntspaPL

ghh;it E}y;:

- jkpo; ,yf;fpa tuyhW – **ghf;aNkhp**
 jkpo; ,yf;fpa tuyhW – **vk;.Mh;.milf;fyrhkp**

SEMESTER – IV : PAPER – IV
(For those who join in June 2015 and after)

PART - I Sanskrit Paper IV		
Subject Title : Drama And History of Sanskrit Literature – IV		
Subject Code: P1LS41	Hours per week: 4	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

60 hours to Drama, 30 hours to Spoken Sanskrit.

DRAMA

Following portions from the prescribed text: ‘SAHITYA RASA KANA’
 - Published by J.M. Publications, Madurai.

Unit I, II, III

1. Karnabharam of Bhasa

Unit IV

History of Drama Literature

A short history of Sanskrit Literature

(Published by A.M.G. Publications, Madurai – 625 016 Page No. 59 – 75)

Unit V

**30 HOURS OF ORAL TRAINING DEVELOPING THE COMMUNICATION
 SKILLS THROUGH THE SANSKRIT LANGUAGE.**

SEMESTER IV
(For those who join in June 2015 onwards)

PART II – Paper I		
Subject Title : English through Classics		
Subject Code: P2LE41	Hours per week: 4	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVES: **Total number of hours per semester: 60 hours**

- ❖ To motivate students to read and understand English prose
- ❖ To make students appreciate English poetry
- ❖ To enable students to face Competitive Examinations in English
- ❖ To develop continuous writing of the students
- ❖ To make students read extensively.

Unit I - Prose

- | | |
|-----------------------------------|--|
| 1. Building Self Confidence | - by Norman Vincent Peale (Personality Development)
From, English for Enrichment,
Edited by Prof. K. Chellappan. |
| 2. Sport- A Modern Hunting Ritual | - by Desmond Morris (Essay),
From, English for Enrichment,
Edited by Prof. K. Chellappan. |
| 3. The Soft Thunder of Lumbini | - by Hugh and Colleen,
(A travelogue Feature in a Newspaper)
From, English for Enrichment,
Edited by Prof. K. Chellappan. |
| 4. She is Dancing Back in Life | - by Oeborach Cowley (A True Life Story)
From, English for Enrichment,
Edited by Prof. K. Chellappan. |

5. Within Without

- Rabindranath Tagore.

Unit II – Poems

- | | |
|---|----------------------|
| 1. Kali the Mother | Swami Vivekananda |
| 2. Lochinvar | Walter Scott |
| 3. Yossouf | James Russell Lowell |
| 4. The Daffodils | William Wordsworth |
| 5. Much Madness | Emily Dickinson |
| 6. The Woman Who is(XCII) | Kabir Das |
| 7. Stopping by Woods on a Snowy Evening | Robert Frost |

Unit III - Objective English

- Sentence Completion
- Synonyms
- Antonyms
- Idioms and Phrases
- Substitution

Text Book: *Objective English for Competitive Examinations* – Hari Mohan Prasad, Uma Rani Sinha, Tata McGraw Hill Education Private Limited, New Delhi. 2010, Fourth Edition

Unit IV - Composition

- Descriptive writing - Topics on Personal Experience
- Resume Preparation
- SMS and E-Mail Preparation and sending.

Unit V Extensive Reading: Four Scenes from Shakespeare's plays.

1. **The Merchant of Venice.** Act IV – Scene I – Portia's Speech.
2. **Julius Caesar.** Act III – Scene II – Mark Antony and Brutus Speech.
3. **Twelfth Night.** Act V – Scene I – Before Olivia's House.
4. **Othello.** Act V – Scene II – A Bedchamber in the Castle.

SEMESTER – IV
(For those who joined in June 2013 and After)

Part – III : Core Subject Theory		
Subject Title : Sequence and Series		
Sub. Code: 05CT41	Hours per week:6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill of solving problems.*

UNIT I:

Intervals in \mathbb{R} - Bounded sets – least upper bound and greatest lower bound of sets – bounded functions – Triangle inequalities – The arithmetic, geometric and harmonic means – Cauchy – Schwarz inequality – Weierstrass inequality – Theorems statements and proofs only No problems.

UNIT II:

Sequences – bounded, monotonic, convergent, oscillatory, divergent sequences – algebra of limits – behaviour of monotonic sequences.

UNIT III:

Cauchy's First limit theorem, Cesaro's theorem, Cauchy's second limit theorem – subsequences, limit points, Cauchy sequences.

UNIT IV:

Series of positive terms – convergence – Cauchy's general principle of convergence – Comparison test, Kummer's test, Ratio test, Gauss test, Cauchy's root test, Raabe's test, Cauchy's condensation test (proofs of tests not included) – Simple problems.

UNIT V:

Alternating series – Absolute convergence and conditional convergence – Dirichlet test – Rearrangement of series – Multiplication of series – power series.

TEXT BOOK: Sequences and Series by S. Arumugam.
New Gamma Publishing House, Palayamkottai.

REFERENCE BOOK:

Algebra By
T.K.MANICAVACHAGOM PILLAY
T. Natarajan KS Ganapathy
S.Viswanathan (Printers & Publishers) Pvt Ltd, Chennai.

SEMESTER – V

(For those who joined in June 2013 and After)

Part – III : Core Subject Theory		
Subject Title : Dynamics		
Sub. Code: 05CT54	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill in solving problems.*

Unit – I

Projectiles:- Path of the projectile, range, etc., velocity of the projectile in magnitude and direction at the end of time – Range on an inclined plane enveloping parabola.

Unit – II

Collision of elastic bodies – fundamental laws of Impact – Impact of a smooth sphere on a fixed smooth plane – direct impact of two smooth spheres – Oblique impact of two smooth spheres – loss of K.E due to direct and oblique impact of two smooth spheres.

Unit – III

Simple Harmonic Motion – Solutions of S.H.M equation – Geometrical representation of S.H.M – Composition of two simple harmonic motions. simple pendulum – Equivalent simple pendulum – seconds pendulum.

Unit – IV

Central orbits

Unit – V

Moment of Inertia.

Text Books:-

Dynamics by M.K. Venkataraman – Chapters: 6, 8 (sections 8.1 to 8.8), 10,11 &12 (Agasthiar Publications Trichy)

Reference Book:

Mechanics – P.DURAIPANDIAN

LAXMI DURAIPANDIAN Pub: S. Chand and company Ltd. New Delhi.

SEMESTER – IV

(For those who joined in June 2015 and after)

Part – III : Allied Subject Theory		
Subject Title : PROGRAMMING IN C++		
Sub. Code: 05CP41	Hours per week: 5	Credit: 3
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill of knowledge in Computers and writing programmes.*

UNIT I

Functions in C++

UNIT II

Classes and Objects

UNIT III

Constructors and Destructors

UNIT IV

Operator Overloading and type conversions

UNIT V

Inheritance

TEXT BOOK:

Object Oriented Programming with C++ by E. Balagurusamy

Pub: Tata McGraw Hill Publishing Company Limited, New Delhi. Sixth edition.

REFERENCE BOOK :

C++ primer Third edition, B.Stanley

B.Lippman, Josce Lajoil 2004 Edition

SEMESTER IV

(For those who joined in June 2013 and after)

Skill Based Subject		
Subject Title : Competitive Mathematics		
Sub. Code:05SB41	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ To develop the skill of solving problems in Competitive exams.

UNIT I

HCF and LCM of Numbers – Decimal fractions.

UNIT II

Square roots and Cube roots – Averages.

UNIT III

Problems on ages – Percentages.

UNIT IV

Profit and Loss – Ratio and Proportions.

UNIT V

Partnership.

TEXT BOOK:

Quantitative Aptitude for Competitive Examinations by
R.S. Aggarwal.

Pub: S. Chand & Company Ltd., New Delhi.

REFERENCE BOOK:

Quantitative Aptitude, By Dr.R.S.AGGARWAL
S Chand & Company Ltd., 2010 Edition.

SEMESTER V
(For those who join in June 2015 and after)

PART II – Paper I		
Subject Title : English for Career Development		
Subject Code: P2LE51 P2CE51	Hours per week: 1	Credit: 1
Sessional Marks: 100		Total Marks: 100

Total number of hours: 15 hours

Objectives:

- ❖ *To make students face Competitive Examinations with confidence*
- ❖ *To train students in writing book reviews*
- ❖ *To make them write reports, resolutions, minutes*
- ❖ *To make them prepare agenda for meeting.*

Unit I

- Comprehension

Unit II

- Spotting the Errors
- Sentence Improvement
- Voice
- Preposition
- Cloze Test or Numbered Gaps

Text Book: *Objective English for Competitive Examinations*, Hari Mohan Prasad
Uma Rani Sinha, Tata McGraw Hill Education Private Limited,
New Delhi.

Unit III

- Book Reviews

Unit IV

- Report-Writing
- Preparation of Agenda, Resolutions, Minutes

Unit V Extensive Reading – Self study – How to win Friends and Influence People –
Dale Carnegie, Vermilian, London

SEMESTER – V : PAPER – I
(For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : STATISTICS		
Subject Code: 05CT51	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ To develop the skill in Solving problems.

UNIT I : Correlation & Regression

Karl pearson's coefficient of correlation –Rank correlation—regression lines & properties of regression coefficients. Chapter (10 hrs)

UNIT II: Probability & Random Variables.

Probability set function –Addition theorem on probability-conditional probability—Independent events—Boole's inequality—Random variable discrete and continuous—Mathematical expectation—Moment Generating functions — characteristics functions.. Chapters 11 & 12 (20 hrs)

UNIT III: Some Special Distributions:

Binomial, Poisson & Normal distributions: M.G.F., mean, mode, standard

deviation, recurrence relation for central moments, addition property, fitting of the distribution – Also area property of normal distribution - Limiting cases.

Chapter 13(15 hrs)

UNIT IV: Tests of significance (Small samples)

Tests of significance based on t test, F-test Chapter 15 (10 hrs)

UNIT V: Tests of significance based on χ^2 - distribution.

Sampling distribution—testing of hypothesis.

Chi-square test for: Population variance, Goodness of Fit, Independence of attributes.

Chapters 14 & 16 (20 hrs)

TEXT BOOK

STATISTICS

Author: Dr. S. Arumugam and Prof. A. Thangapandi Isaac

Publisher: New Gamma Publishing House, Palayamkottai.

REFERENCE BOOK

MATHEMATICAL STATISTICS

Author: JN Kapur & H.S. Saxena

Publisher: S.Chand & Company Ltd, New Delhi.

SEMESTER – V: Paper - II

(For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : Modern Algebra		
Subject Code:05CT52	Hours per week: 5	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill of understanding of definitions and theorems.*

Unit I

Relations and functions.

Unit II

Definition of groups & examples – Elementary properties – permutation groups – Subgroups & cyclic groups.

Unit III

Order of an element – Cosets & Lagrange's theorem – Normal sub groups.

Unit IV

Quotient groups – isomorphism & Homomorphisms of groups.

Unit V

Rings: Definition – elementary properties – Isomorphism – Types of rings – characteristics of a ring – sub rings & ideals – quotient rings – Maximal & prime ideals.

Text Book

Modern Algebra

Author : Dr.S.Arumugam & Prof.A. Thangapandi Isaac

Publisher: Scitech Publications Pvt Ltd, Chennai.

Reference Book

Modern Algebra

Author: ML Santiago

Publisher: Tata McGraw Hill publishing Company Ltd, New Delhi.

SEMESTER – V : PAPER – III (For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : REAL ANALYSIS		
Subject Code: 05CT53	Hours per week: 5	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE

❖ *To develop the skill of understanding definitions and theorems.*

UNIT I

Countable sets – uncountable sets – Inequalities of Holder and Minkowski.
Metric spaces : Definition and Examples – Bounded sets in a metric space – open ball in a metric space – open sets.

UNIT II

Sub spaces – Interior of a set – closed sets – closure – limit point – Dense sets.

UNIT III

Complete metric space – Baire's category theorem. Continuity
Homeomorphism – Uniform continuity- discontinuous functions on \mathbb{R} .

UNIT IV

Connectedness: Introduction – Definition and examples – connected subsets of \mathbb{R} – connectedness and continuity

UNIT V

Compactness: Introduction – Compact space – compact subsets of \mathbb{R} – Equivalent characterization for compactness – compactness and continuity.

Text Book:

Modern Analysis

Allied: Dr.S.Arumugam, and A.Thangapandi Issac,

New Gamma Publishing House. Edition 2002.

Reference Book :

Principles of Real Analysis By Chandra Sekara Rao

SEMESTER – V

(For those who joined in June 2015 and After)

Part – III : Core Subject Theory		
Subject Title : STATICS		
Sub. Code: 05CT54	Hours per week: 6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ To develop the skill in Solving problems.

UNIT I

Introduction - Force: Types of forces – Equilibrium – Principle of Transmissibility. Forces acting at a point – Parallelogram law of forces – Triangle law of forces – Polygon law of forces – Lami's theorem, $\lambda - \mu$ - theorem – Resolution of forces – components of forces – Resolved parts – resultant of any number of forces acting at a point – condition of equilibrium of any number of forces acting at a point.

UNIT II

Parallel forces and Moments: resultant of two like and unlike parallel forces. Conditions of equilibrium of three coplanar forces. Moment of a force – Geometrical representation of moments. Moment of a force about an axis.

Couple: equilibrium of two couples – Equivalence of two couples – Resultant of coplanar couples – Resultant of couple and a force.

UNIT III

Equilibrium of three forces acting on a rigid body: Three coplanar forces – Two Trigonometrical theorems. Solving statical problems (simple problems) – coplanar forces – Reduction to coplanar forces – conditions for a system of forces to reduce to a single force or to a couple – Equation to the line of action of the resultant – conditions of equilibrium of a system of coplanar forces (simple problems only).

UNIT IV

Friction: statical, dynamical and limiting friction – laws of friction – co-efficient of friction – angle of friction – cone of friction – equilibrium of a particle on a rough inclined plane – Equilibrium of a body on a rough inclined plane under a force parallel to the plane - Equilibrium of a body on a rough inclined plane under any force.

UNIT V

Equilibrium of strings: Equation of the common catenary – Geometrical properties of the catenary – tension at any point – Important Formulae – suspension bridge.

TEXT BOOKS:

1. Statics by M.K. Venkataraman – Chapters: 1, 2, 3, 4, 5, 6,7 & 11 (Agasthiar Publications Trichy)

REFERENCE BOOK:

Mechanics – P.DURAIPANDIAN , LAXMI DURAIPANDIANPub: S. Chand and company Ltd. New Delhi.

SEMESTER – V: PAPER - III

(For those who joined in June 2015 and after)

PART – III : Skill Based Subject		
Subject Title : Quantitative Aptitude		
Subject Code:05SB51	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill of Solving problems in Competitive Exams.*

Unit-I

Time and Work – Time and Distance

Unit –II

Problems on Trains

Unit – III

Simple Interest – Compound Interest

Unit – IV

Problems on ages – Calender

Unit – V

Clocks – Stocks and Shares.

Text Book

Title: Quantitative Aptitude for competitive Examinations

Author : R.S.Aggarwal

Publisher: Tata McGraw Hill, New Delhi.

Edition: 2004.

Reference Book: Quantitative Aptitude,
By Dr. R.S.Aggarwal
S Chand & Company Ltd.,
2010 Edition.

SEMESTER – V

(For those who joined in June 2015 and after)

Part – IV : Common Subject Theory		
Subject Title : Environmental studies		
Subject Code: ESUG51	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

2hrs/week 24hrs

Objectives

- ❖ Disseminate information of Environment of national and international issues
- ❖ Environmental consciousness creation among the students
- ❖ Facilitation of environmental leadership among students

Unit-I 5 hrs

Introduction – Nature, scope and importance of Environmental studies –
Natural Resources and conservation – forest, water and energy.

Unit-II 5 hrs

Ecosystem – concept – structure and function, energy flow, food chain, food
web and ecological pyramids

Unit-III 5hrs

Biodiversity – definition, types – values – India, a mega diversity zone –
Hotspots – Endangered and endemic species – threat to biodiversity and conservation

Unit-IV

5 hrs

Environmental pollution – Air pollution- causes and effect – Ozone depletion – Global warming – acid rain – Water pollution – Noise pollution – Solid waste management – Nuclear hazard

Unit-V

4hrs

Human population and the environment – Population growth – variation among nations – effects of population explosion – family welfare programme – environment and human health.

Text books

Environment studies – R.Murugesan (2009), Milleneum Pub. Madurai-16

SEMESTER VI
(For those who join in June 2015 and after)

PART II – Paper I		
Subject Title : English for Professional Excellence		
Subject Code: P2LE61 P2CE61	Hours per week: 1	Credit: 1
Sessional Marks: 100		Total Marks: 100

Total number of hours: 15 hours

Objectives:

- ❖ *To make students face Competitive Examinations with confidence*
- ❖ *To prepare students to face interviews*
- ❖ *To make students familiar with books and authors in English literature*
- ❖ *To make students prepare resume*
- ❖ *To motivate students to participate in Group Discussion*

Unit – I

- Sentence Completion
- Sentence Fillers
- Synonym
- Antonym
- Idioms and Phrases
- Substitution

Unit – II

- Sentence Arrangement
- Jumbled sentences
- Paragraph Reconstruction

- Analogy
- Text Book** *Objective English for Competitive Examinations*, Hari Mohan Prasad Uma Rani Sinha, Tata McGraw Hill Education Private Limited, New Delhi.
- Unit III**
- Interview Skills – mock – interview.
- Debate, Group Discussion, Resume Writing
- Unit IV**
- Books and authors in English literature

SEMESTER – VI: PAPER - I
(For those who joined in June 2015 and after)

PART – III : Core Subject Theory		
Subject Title : Linear Algebra		
Subject Code:05CT61	Hours per week: 5	Credit: 4
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ *To develop the skill of solving problems.*

Unit-I: Vector Spaces:

Definition & examples – subspaces – Linear transformation – Span of a set – linear independence – Basis & Dimension – Rank & Nullity. Chapter 5 (5.0 to 5.7)

Unit-II: Inner Product Spaces

Definition & Examples – orthogonality – orthogonal complement. Chapter 6 (6.0 to 6.3)

Unit – III: Theory of Matrices

Algebra of matrices – Types of matrices – The inverse of a matrix – Elementary transformations – rank of a matrix
Chapter 7 (7.1, 7.2, 7.3, 7.4, 7.5)

Unit –IV

Simultaneous linear equations – characteristic equations – Cayley Hamilton theorem – Eigen values & Eigen vectors.

Chapter 7 (7.6, 7.7, 7.8,)

Unit –V

Matrix of a Linear Transformation – Relation between multiplication of matrices & the composition of their linear transformation. Bilinear forms – Quadratic forms.

Text Book :

Modern Algebra: Author : S. Arumugam & A.T.Issac
Publisher: Scitech Publications, Chennai.

Reference Book: Linear Algebra. Author : S.kumaresa,
Publisher: Prentice

SEMESTER – VI: Paper - II (For those who joined in June 2015 and after)

PART – III : Elective Subject		
Subject Title : Graph Theory		
Subject Code:05EP61	Hours per week: 5	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ *To develop the skill of understanding the definitions, the theorems and skill of Solving Problems.*

Unit I: GRAPHS AND SUBGRAPHS:

Definitions and examples – Degrees – sub graphs – isomorphism between graphs – Ramsey Numbers – Independent sets and coverings – Intersection graphs and line graphs – Matrix of a graph – Operations on graphs. (Chapter -2)

Unit II: Degree sequences – Graphic sequences

Connectedness:

Walks, trails and Path – Connectedness and components – blocks – connectivity. (Chapters 3 and 4)

Unit III: Eulerian Graphs – Hamiltonian graphs

Trees: Characterization of Trees – Centre of a tree. (Chapters 5 and 6)

Unit IV: Matchings – Matchings in Bipartite graphs

Planarity: Definition and properties – characterization of planar graphs –

Thickness, crossings and outer planarity. (Chapters 7 and 8)

Unit V: Colourability : Chromatic number and Chromatic Index – The Five colour theorem – Four colour theorem – Chromatic polynomials. (Chapter 9)

Text Book: An Invitation to Graph Theory

Author: S. Arumugam & S. Ramachandran

Publisher: Scitech Publishing Company, Chennai.

Reference Book:

Graph Theory

Author: Frank Harary

Publisher: Addison – Wesley Publishing Company, Delhi

SEMESTER – VI: Paper - III

(For those who joined in June 2013 and after)

PART – III : core Subject		
Subject Title : Complex Analysis		
Subject Code:05CT62	Hours per week: 6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ To develop the skill of understanding definitions and theorems.
- ❖ To develop the skill in solving problems.

Unit I

Elementary transformations – bilinear transformations – Cross ratio-fixed points of a bilinear transformation-Bilinear transformations which map the real axis onto itself, unit circle onto itself, real axis onto the unit circle.

Unit II

Cauchy Riemann equations – complex form of C.R. equations-C.R. equations in polar co-ordinates-Analytic functions-Harmonic functions-Laplace's equation-Finding conjugate harmonic of a function-Milne-Thompson method.

Unit III

Complex integration-Definite integral-length of a curve-Cauchy's theorem-

simply connected and multiply connected regions-Cauchy's integral formula- Maximum modulus theorem-Higher derivatives – derivative of an analytic function is analytic-Cauchy's inequality-Liouville's theorem-Fundamental theorem of algebra-Morera's theorem.

Unit IV

Series expansion-Taylor's theorem-Taylor's series-Maclaurin's Series-Laurent's theorem-Laurent's series-Zeros of an analytic function-Order of a zero-Singular points-Isolated singularity-Removable singularity – Poles- Order of a pole-Simple pole-double pole-essential singularities.

Unit V

Calculus of Residues-Residues-Cauchy's residue theorem-Argument theorem-Rouche's theorem-fundamental theorem of algebra-Evaluation of definite integrals-contour integration problems only.

Text Book : Complex Analysis,

Author: Dr.S.Arumugam, A. Thangapandia Issac & A.Somasundaram.

Publisher: Scitech Publishing, Chennai.

Reference Books: Complex Analysis – Dr.T.K.Manickavachagam pillay.

Publisher: S.Viswabahan (partners and Publishers) Pvt Ltd.,

Complex Analysis – Dr.Durai pandian & Others. Emerold Publishers, Chennai.

SEMESTER – VI

(For those who joined in June 2015 and After)

PART – III : Elective Subject		
Subject Title : OPERATIONS RESEARCH		
Subject ode: 05EP62	Hours per week: 6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill of forming OR models and the skill of solving problems.*

Unit – I

Inventory control – Introduction – Cost associated with inventories – Factors affecting inventory control – Economic Order Quantity (EOQ) – Deterministic inventory problems with no shortages – Probabilistic inventory problems.

Unit – II

Queuing theory – Introduction – Elements of queuing system and characteristics of queuing system – Probability distribution in queuing systems – Classification of queuing models – Poisson queuing systems (M / M / 1): (∞ / FIFO), (M / M / 1) : (N / FIFO)

Unit – III

Network scheduling by PERT / CPM – Introduction – Network and Basic Components Logical sequence – Rules of network construction Numbering the events

– Critical path analysis – Probability consideration in PERT – Distinction between PERT and CPM.

Unit – IV

Sequencing problems – Problem of sequencing – Basic terms used in sequencing – Processing n jobs through two machines – processing n jobs through k machines – processing 2 jobs through k machines

Unit – V

Replacement problem – Replacement of equipment / asset that deteriorates gradually – Replacement policy when the value of money does not change with time – Replacement policy when value may change with time.

Text Book:

Operations Research Kanti Swarup – P.K. Gupta and Man Mohan

Publisher :

Sultan Chand & Sons, New Delhi.

Reference:

Operations Research – J.K. Sharma

Publisher :

Mac Millan, New Delhi

SEMESTER – VI: PAPER II **(For those who joined in June 2015 and after)**

PART – IV : Skill Based Subject		
Subject Title : Boolean Algebra		
Subject Code: 05SB62	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

❖ *To develop the skill in solving problem.*

Unit – I

Relation reflexive, symmetric, transitive and equivalence relations antisymmetric relations – partial order relations – posets – linearly ordered sets – chain.

Unit – II

Representation of a finite poset by diagrams – diagram for M_5 and N_5 - zero and unit element in a poset – greatest lower bound and least upper bound.

Unit – III

Lattice – definition and examples – Idempotent, commutative, associative and absorption laws – sublattices – Distribution lattices modular lattices.

Unit – IV

Complemented lattices – Boolean Algebra – De Morgan Laws – Homomorphisms – Kernel of a homomorphisms – Isomorphisms – Ideal of a Boolean Algebra.

Unit – V

Definition of a Boolean Algebra $B(+, *, ', 0, 1)$ – Boolean Algebra of bits – subalgebra – Principles of duality – Bounded and Involution law, - Diagrams for D_{70} and D_{210} – Atoms – Representation theorem.

TEXT BOOKS:

1. Modern Algebra - By S.Arumugam and others
2. Discrete Mathematics – Seymour Lipschutz, Mark Lipson, Schaum series

REFERENCE BOOK:

Discreate Mathematics,
N.CH. SN. Iyengar, V.M.Chandra Sekar, K.A.Venkatesh, P.S.Arunatchalam,
Vikas publishing Home P.Ltd.,

SEMESTER – VI: PAPER-IV (For those who joined in June 2015 and after)

PART – IV : Skill Based Subject		
Subject Title : Applied Statistics		
Subject Code: 5SB61	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks:100

OBJECTIVE:

❖ *To develop the skill of solving problems*

Unit – I : Association of Attributes-Definition-positive and negative classes Class Frequencies-Dichotomization

Unit – II: Consistency of class frequencies-Association of Attributes.

Unit – III: Analysis of Variance (ANOVA)- introduction-one way classification.

Unit – IV: Two way classification.

Unit – V: Randomized Block Design and Latin Square Design.

Text Book: Statistics by Dr.S. Arumugam, New Gamma Publishing House

Reference Book: Mathematical Statistics by Gapoor and Gupta.

SEMESTER – VI: PAPER-VI
(For those who joined in June 2013 and after)

PART – IV : Skill Based Subject		
Subject Title : Astronomy		
Subject Code: 05SB63	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE

- ❖ To develop the skill of viewing Astronomical objects.

UNIT – I

Spherical Trigonometry (Results only) – Celestial sphere – celestial co-ordinates (A , a , α , σ , λ , β only) – Sidereal time – Latitude of a place – circumpolar stars. (No problems)

UNIT –II

Earth – Terrestrial latitude and Longitudes – radius of earth – Dip of horizon– twilight.

UNIT –III

Moon – sidereal month – synodic month – phase of moon – Hunter’s moon
– Tides.

UNIT –IV

Eclipses – Lunar ellipse – Solar eclipse ecliptic limits – synodic periods of the nodes of lunar orbit maximum and minimum number of ellipses in a year – Duration of a solar eclipses – Importance of Total solar eclipses comparison of eclipses.

UNIT – V

The stellar universe – Distance of stars - colour and size of stars – Dwarfs – Main segment and giants – Nova – Star clusters – Nebulae – Constellation the milky way.

Text Book

Astronomy By S.Kumaravelu & Susheela Kumaravelu

Reference Book

Astronomy By G.V.Ramachandran

SEMESTER – VI

(For those who joined in June 2013 and after)

PART – IV : Common Subject Theory		
Subject Title : Value Education		
Subject Code: VEUG61	Hours per week: 2	Credit: 2
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

UNIT I: The heart of Education:

Introduction – Eternal Value – Integrated approach to value education - one for all and all for one – Responsibilities of a citizen – Habit Vs wisdom – purifying mind pollution – Respect for all Religions – Parents, teachers and fellow students – The need and benefit of exercise and meditation for students.

UNIT II: The Value of Body and Life Energy

Introduction – what are the causes for pain, Disease and death? Three Basic needs for all living Beings – Personal Hygiene Five Factors of Balance in Life – The need and benefits of physical Exercise – The value and Base of Life energy – The value and Base of Bio-magnetism - You are your own best caretaker. The Marvelous

nature of mind Introduction- Bio-magnetism – The base of the mind – characterisation of the Genetic Centre – metal frequency – practice for a creative mind - benefits of meditation.

UNIT III: Analysis of Thought

Introduction – An Exposition on the nature of thought– six roots for thoughts – Introspection for analysis of thoughts-practical techniques for analysis of thoughts. Benefits of Blessings Effects of good vibrations – Make Blessing a Daily Habit.

UNIT IV: Moralisation of Desire

Introduction – moralization of desire - Analyse your desires – Summary of practice Neutralisation of Anger:Introduction – meaning – characteristics of Anger – Anger is a Destructive emotion – Anger spoils our relationship with others – Some common misconception about anger – will power and method success through awareness – method of neutralisation of anger.

UNIT V: Eradication of Worries

Worry is a mental disease – Nature’s Law of cause and effect – factors beyond our control – How to deal with problems – analyse your problem and eradicate worry –Harmonious Relationships Introduction – Three angles of life – The value of harmony in personal relations – Love and Compassion – pleasant face and loving words – appreciation and gratitude to parents and teachers – Bringing needed reforms in educational institutions – Why should we serve others? Brotherhood – A scientific Basis for Universal Brotherhood protection of the environment – non-violence and the five fold moral culture.

Text Book: Value Education for Health, Happiness and Harmony

(Based on the Philosophy and Teachings of Swami Vethanthiri Maharisi)

Published By: Brain Trust, Aliyar A Wing of World Community Service Centre.

SEMESTER – VI
(For those who joined in June 2013 and after)

PART – V : Common Subject Theory		
Subject Title : Extension Activities		
Subject Code: EAUG61	Hours per week:	Credit: 1
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

UNIT-I: Community Development-I:

Definition – structure and composition – community based issues – need for awareness – Developmental Programmes.

UNIT – II: Community Development–II:

Rural Scenario – need of the Community – need for the community service – role of youth in community building – communal harmony – literacy – Educational Recreation.

UNIT – III: Volunteer Empowerment:

Women’s Emancipation – formation of Youth Clubs – Self-Help Groups – Youth and Development.

UNIT – IV: Social Analysis:

Social issues – cultural invasion – media infiltration – human rights
Education/Consumer Awareness – Adolescents Reproductive – HIV/AIDS/STD –
Social harmony/National integration – Blood Donation.

UNIT – V: Introduction to NSS:

Basic Concepts – profile – aims – objectives – symbol – Motto – structure –
Regular activities – Special Camping Programme – Adventure Programme – National
Days and Celebrations.(Applicable to NSS Students)

(OR)

NCC - Origin – Organisation – Ministry of Defence – Armed forces – commands –
Defence establishments in Tamil Nadu Civil Defence – Aid to civil authorities –
Disaster management – Leadership – Man management – Adventure activities –
Social service

Reference:

National Service Scheme Manual (Revised), Ministry of Human Resources
Development, government of India.

SEMESTER – III

(For those who joined in June 2013 and After)

Allied Subject Theory for PHYSICS & CHEMISTRY Major

PART – III : Allied Subject Theory for Physics & Chemistry Major		
Subject Title : MATHEMATICS – I		
Subject Code:05AT01	Hours per week: 6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE

❖ *To develop the skill of solving problems.*

Unit – I: Trigonometry

Expression for $\sin n\theta$, $\cos n\theta$ & $\tan n\theta$ - Expression for $\sin^n \theta$ and $\cos^n \theta$ -
Expansion of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in powers of θ - Hyperbolic functions and inverse
hyperbolic functions.

Unit – II: Differential Calculus

Differentiation Methods (successive differentiation (up to second order
deveation only omit leibnitz theoram)

Unit –III: Integral calculus :

Properties of definite integrals – Reduction formula for $\int \sin^n x dx$, $\int \cos^n x dx$ & $\int \sin^m x \cos^n x dx$. Double and triple integrals (simple problems).

Unit IV: Vector Differentiation :

Differentiation of vectors - Gradient of a vector -Directional derivative and its maximum value – Divergence and curl of a vector – solenoidal and irrotational vectors .

Unit V: Line and Surface Integrals

Statements of Green's theorem, Stoke's theorem and Gauss Divergence theorem (simple problems).

TEXT BOOK:

Ancillary Mathematics by Dr.S.Arumugam & Issac. Vol I – IV (Relevant Chapters)
Publisher: New Gamma Publishing House, Palayamkottai

Reference :

Ancillary Mathematics by T.K Manikavasagam Pillay & Others Viswanathan printers and publishers) Pvt Ltd. Chennai.

SEMESTER - IV

(For those who joined in June 2013 and After)

Allied Subject Theory for PHYSICS & CHEMISTRY Major

PART – III : Allied Subject Theory for Physics & Chemistry Major		
Subject Title : MATHEMATICS - II		
Subject Code: 05AT02	Hours per week: 6	Credit: 5
Sessional Marks: 25	Summative Marks: 75	Total Marks: 100

OBJECTIVE:

- ❖ *To develop the skill of Knowledge in Mathematics and Solving problems*

UNIT I:

Formation of differential equation – Differential equation of first order and first Degree – variables separable, Homogeneous and Nonhomogeneous differential Equation – Linear equation.

UNIT II:

Second order differential equation with constant coefficients – Methods of finding Particular integrals for the type e^{ax} , $\cos ax$, $\sin ax$, x^m , $e^{ax}V$ – second order Differential equation with variable coefficients.

UNIT III:

Laplace Transform – Inverse Laplace Transform – solution of differential equation using Laplace Transform

UNIT IV:

Formation of partial differential equation – definition of complete, particular, singular, general integral – solving first order p.d.e.

UNIT V:

Definition of Fourier series – The cosine and sine series – Half range fourier series.

TEXT BOOK:

Ancillary Mathematics by Dr.S.Arumugam & Issac. Vol I – IV
(Relevant Chapters)

Publisher: New Gamma Publishing House, Palayamkottai

Reference :

Ancillary Mathematics by T.K Manikavasagam Pillay & Others Viswanathan (printers and publishers) Pvt Ltd. Chennai.

**DEPARTMENT OF MATHEMATICS
CERTIFICATE COURSE IN COMPETITIVE MATHEMATICS**

Unit – I

HCF and LCM of Numbers – Decimal fraction

Unit – II

Square roots and Cube roots - Averages

Unit – III

Problems on ages - Percentages

Unit – IV

Profit and Loss – Ratio and Proportions

Unit –V

Partnership

Text Book:

Quantitative Aptitude for Competitive Examinations by R.S. Aggarwal
Publications: S.Chand& Company Ltd., New Delhi

Reference Book:

Quantitative Aptitude, By Dr.R.S. Aggarwal
S.Chand& Company Ltd., 2010 Edition.

**DEPARTMENT OF MATHEMATICS
CERTIFICATE COURSE IN QUANTITATIVE APTITUDE**

Unit – I

Time and Work – Time and Distance

Unit – II

Problems on Trains

Unit – III

Simple Interest – Compound Interest

Unit – IV

Problems on ages – Calendar

Unit – V

Clocks – Stocks and Shares

Text Book

Title: Quantitative Aptitude for Competitive Examinations

Author: R.S.Aggarwal

Publisher: Tata McGraw Hill, New Delhi.

Edition: 2004

Reference Book:

Quantitative Aptitude

By Dr.R.S.Aggarwal

S.Chand& Company Ltd.

Edition: 2010