

MVN University, Palwal
School of Computer and Information Science

BCA / BCA+MCA Integrated

Annexure I-A

SCHEME OF EXAMINATION

Semester I										
w.e.f. 2014-2015 session										
S. No	Name of the Paper	Code	L	T	P	Total Hrs	Credit	Evaluation Scheme		
								Ext	Int	Total
1	Fundamental of Computer and Programming using C	CAL-101-A	4	1	0	5	5	100	50	150
2	PC Software	CAL-103-A	4	1	0	5	5	100	50	150
3	Mathematics –I	AHL-107-A	4	1	0	5	5	100	50	150
4	Communication Skill	AHL-111-A	4	0	0	4	4	100	50	150
5	Business Practice	MSL-111-A	4	1	0	5	5	100	50	150
6	Personality Development-I	AHP-117-A	0	0	2	2	0	0	50	50
7	Fundamental of Computer and Programming using C Lab	CAP-101-A	0	0	2	2	1	30	20	50
8	PC Software Lab	CAP-103-A	0	0	2	2	1	30	20	50
Total			20	4	6	30	26	560	340	900
Semester II										
w.e.f. 2014-2015 session										
S. No.	Name of the Paper	Code	L	T	P	Total Hrs	Credit	Evaluation Scheme		
								Ext	Int	Total
1	Fundamental of Internet Technologies	CAL-102-A	4	1	0	5	5	100	50	150
2	Mathematical Foundation of Computer Science	CAL-104-A	4	1	0	5	5	100	50	150
3	Advanced C Programming	CAL-106-A	3	0	0	3	3	100	50	150
4	Introduction to Computer Network	CAL-108-A	4	1	0	5	5	100	50	150
5	Mathematics-II	AHL-108-A	4	1	0	5	5	100	50	150
6	Personality Development-II	AHP-118-A	0	0	2	2	0	0	50	50
7	Internet Technologies Lab	CAP-102-A	0	0	2	2	1	30	20	50
8	Advanced C Programming Lab	CAP-106-A	0	0	3	3	1.5	30	20	50
Total			19	4	7	30	25.5	560	340	900

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CAL-101-A	Computer Fundamental & Programming Using C	L	T	P	Cr
		4	1	0	5

Objective:

Today is the era of Computer. This subject focuses on the introduction of Computer and program development using C Language.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT – 1

What are computers, The evolution of computers, Classification of computers, Block Diagram: Input-output devices, Computer Memory: Primary Memory & secondary Memory, Memory Organization, Input/output Ports, Connector.

UNIT – 2

Number System, Computer Language: Low level and high level languages, assemblers, compilers, interpreters, linkers, algorithms, flow charting, decision tables, pseudo code, software concepts: system & application software packages.

UNIT – 3

Computer Generation: First Generation of Computers, The Second Generation, The Generation, The fourth Generation, The Fifth Generation. Operating System concepts, different types of operating systems, structure of operating system.

SECTION – B

UNIT – 4

C basics: C Character Set, Identifiers And Keywords, Data Types, Constants, Variables, type of variable and Arrays, Declarations, Expressions Statements, Symbolic Constants, Compound Statements.

UNIT – 5

Operator: Arithmetic Operators, Unary Operators, Relational And Logical Operators, Assignment Operators, Conditional Operators, Bit Operators.

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UNIT – 6

C constructs: If statement, if...else statement, if....else if...else statement, while statement, do....while statement, for statement, switch statement, nested control statement, break operator, continue operator, goto statement return statement.

Suggested Readings:

Text Books:

1. Fundamentals of Computers & Programming with C, A.K. Sharma, Dhanpat Rai Publishing.
2. Gill, Nasib Singh: Essentials of Computer and Network Technology, Khanna Books Publishing Co., New Delhi.
3. Kenneth.A.: C problem solving and programming, Prentice Hall.
4. Y. Kanetkar: Let us C, BPB Publication
5. E. Balaguruswamy: Programming in C, Tata McGraw Hill.

Reference Books:

1. Gottfried, B.: Theory and problems of Programming in C, Schaum Series
2. Sanders, D.: Computers Today, Tata McGraw-Hill.
3. Rajender Singh: Application of IT to Business, Ramesh Publishers
4. Kerninghan & Ritchie: The C Programming Language, PHI.
5. H. Schildt: C-The Complete Reference, Tata McGraw Hill.

Note: Latest and additional good books may be suggested and added from time to time.

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CAL-103-A	PC Software	L	T	P	Cr
		4	1	0	5

Objective:

The purpose of this subject is to provide the dynamic knowledge of office applications of computer that will help the students in day to day work.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT – 1

The fundamentals of DOS, DOS and Disk, Disk Organization understanding DOS prompt and Shell Screen using keyboard & mouse, Internal commands; Batch files; Using the screen editor, Printing images, ASCII Files; Indirect printing and spooling; Communicating with other devices, Parallel vs Serial communication; Optimizing DOS, CONFIG, SYS. & AUTOEXEC.BAT files, Freeing up memory at boot time, managing Extended/and Expended memory, RAM disk, Disk Caching, Defragmentation.

UNIT – 2

Window fundamental: Types of windows, anatomy of Windows; Windows Explorer, Customizing windows, Installing a printer, using clipboard, using paintbrush, Control Panel, Taskbar Settings.

UNIT – 3

Introduction to MS-WORD: Menus, Toolbars, Ruler, Scroll Bars, Status Bar; Creating, Saving, Importing, Exporting and Inserting files; Formation, Indents/Outdents, Lists, Tabs, Styles; Working with Frames, Columns, Pictures, Chart/Graphs, Forms, Tools, Equations and Macros.

SECTION – B

UNIT – 4

Worksheet overview: Rows, Columns, Cell, Menus; Creating worksheets; opening and saving worksheets; Formatting, Printing, Charts, Window, Establishing Worksheet links, Macros, Database, Tables, Using files with other programs.

UNIT – 5

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Overview of MS-Power Point, H/w and S/w requirements, Creating slides & presentations, rehearsing presentations, Insert, Tools, Format, Slide-show, Window options.

UNIT – 6

Disk Management Tools: PC Tools, Norton Utilities, Norton Disk Doctor, Virus detection, prevention and cure utilities.

Suggested Readings:

Text Books:

1. Taxali, R.K. : PC Software for Windows Made Simple, Tata McGraw- Hill.

Reference Books:

1. Robbins Judd : Mastering DOS 6.0 & 6.2, BPB Publications, 1994.
2. DOS Quick Ref. Manual: BPB Publications.
3. Habraken : MS-Office 2000 8-in-1, Prentice-Hall.
4. Sandler : Teach Yourself MS-Office, BPB Publications.
5. Bangia R. : Learning MS-Office 2000, Khanna Book Pub. Co.
6. Wang W. & Parker R.C. : MS-Office 2000 Windows for Dummies, IDG Books India (P) Ltd.
7. Peter Dyson : Undertaking PC Tools, Sybex/Tech. Asian Edition.Tech.Publications
8. Peter Dyson : Understanding Norton Utilities, 2nd edn., Sybex/Tech.Asian.

Note: Latest and additional good books may be suggested and added from time to time.

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MSL- 111-A	Business Practice	L	T	P	Cr
		4	1	0	5

Objective:

The course aims at providing fundamental knowledge and exposure to the concepts, theories and practices in the field of management.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT-1

Meaning of Management, Definitions of Management, Characteristics of Management, Management Vs Administration, Importance of Management, Development of Management thoughts.

UNIT-2

Principles of Management. The Management functions, Inter –relationship of managerial functions. Nature and significance of Staffing, Personnel Management, Functions of Personnel Management.

UNIT -3

Manpower planning, Process of Manpower Planning, Recruitment, Selection, Job analysis, Promotion-Seniority Vs Merit. Training Objectives and Types of Training,

SECTION – B

UNIT-4

Marketing Management: Definition of Marketing, Marketing concept, objectives & functions of Marketing. Marketing Research-Meaning, definition, Objectives, Importance, Limitations, Process. Advertising: Meaning, Objectives, Functions and Criticisms

UNIT-5

Introduction of Financial Management, Objectives of Financial Management, Functions and Importance of Financial Management. Brief introduction to the concept of capital structure and various sources of finance.

UNIT-6

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Annexure I-A

Organisational Structure: developing and designing structure, Types of structure, Departmentation, Authority and Delegation, Centralization and De-centralization.

Suggested Readings

Text Books:

1. Fundamentals of Management – T.N CHHABRA, Sun India publication
2. Principles and Practice of Management – R.S. Gupta, B.D.Sharma, N.S. Bhalla.(Kalyani Publishers)
3. Business practice – Shashi k.Gupta,R.K.Gupta,Niti Gupta, Kalyani publication

Reference Books:

1. Principles & Practices of Management – L.M. Prasad (Sultan Chand & Sons)
2. Management – Harold, Koontz and Cyrilo Donell (Mc.Graw Hill).
3. Marketing Management – S.A. Sherlikar (Himalaya Publishing House, Bombay).

AHL-111-A	COMMUNICATION SKILLS	L	T	P	Credit
		4	0	0	4

Objectives:

The objective of the course is to inculcate English proficiency among technical students besides sensitizing them to the nuances of its applications to various communication needs.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

Section - A

Unit I Vocabulary

- Synonyms and Antonyms
- One Word Substitution
- Formation of words using prefixes and suffixes
- Function of words as nouns and verbs
- Idioms and Phrases

Unit II Grammar and Usage

- Basic Knowledge of Tense
- Main Verb and Auxiliary Verb
- Sentence Corrections
- Punctuation marks

Unit III English Sounds

- Elementary knowledge of English sounds
- Commonly Mispronounced Words (List will be provided to the students)

Section - B

Unit IV Comprehension

- Comprehension of Unseen Passages
- Analyses of Graphs and Tabulated Data

Unit V Composition

- E-mail Writing
- Business Letters Writing

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Annexure I-A

- Slogan Writing
- Paragraph Writing

Unit VI Reading Skills

- Techniques of Readings: Skimming and Scanning

Suggested Readings:

Text Books:

1. *Intermediate Grammar, Usage and Composition* by M. L. Tickoo and A. E. Subramanian, Orient Longman

Reference Books:

2. *Spoken English for India* by R.K. Bansal and J. B. Harrison, Orient Longman
3. *A Practical English Grammar* by Thomson and Martinet, OUP, Delhi
4. *A Textbook of English Phonetics for Indian Students* by T. Balasubramanian, MacMillan, Chennai

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AHL-107-A	MATHEMATICS – I	L	T	P	Cr
		4	1	0	5

Objective:

Basic elements of permutations and combinations, trigonometry, vector, complex number and statistics have been included in the curriculum as foundation course and to provide base for continuing education to the students.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

Unit I

Algebra Series: AP and GP; Sum, nth term, Permutations and Combinations, Binomial theorem for positive, negative and fractional index (Without proof). Application of Binomial theorem.

Determinants– expansion of determinants (upto third order) using sarrus rule, expansion method , Properties of determinants, solution of equations (upto 3 unknowns) by Cramer’s rule.

Unit II

Matrices and its applications: Definition of matrix, addition, subtraction and multiplication of matrices (upto third order). Rank of a matrix, elementary transformation, elementary matrices, Inverse of a matrix by adjoint method and elementary row transformations. Solution of equations (up to 3 unknowns) by Matrix method

Unit III

Trigonometry

Addition and subtraction formulae, product formulae and their application in engineering problems. Transformation from product to sum or difference of two angles or vice versa, multiple and submultiple angles, Conditional identities, solution of triangles (excluding ambiguous cases). Graphs of $\sin x$, $\cos x$, and $\tan x$, etc.

SECTION – B

Unit IV

Definition of vector and scalar quantities. Addition and subtraction of vectors. Dot product and cross product of two vectors. Properties of scalar product of two vectors. Properties of vector product of two vectors . Thumb rule. Angle between two vectors, application of dot and cross

product in engineering problems, scalar triple product and vector triple product. Properties of scalar triple product.

Unit V

Complex number

Definition, Real and Imaginary parts of a complex number, polar and Cartesian representation of a complex number and conversion from one form to the other, conjugate of a complex number, modulus and argument of a complex number, addition, subtraction, multiplication and division of a complex number. De Moivre's theorem, roots of a complex number, probability: definition and laws on probability.

Unit VI

Probability and probability distribution: Definition and laws on probability, theorems of probability (addition theorem, multiplication theorem, Baye's theorem), probability distribution: binomial distribution, Poisson distribution, normal distribution.

Suggested Readings:

Text Books:

1. Applied Mathematics Vol. I by SS Sabharwal and Others by Eagle Prakashan, Jalandhar

Reference Books:

1. Engineering Mathematics Vol. I by Ishan Publishing House
2. Applied Mathematics Vol. I by RD Sharma
3. Engineering Mathematics by Dass Gupta
4. Higher Engineering Mathematics by BS Grewal; Khanna Publishers, Delhi

AHP- 117-A	Personality Development- I	(L-0 T-0 P-2)	Credit :0
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SECTION-A

UNIT-I: SPOKEN SKILLS

- Self Introduction
- Free Speeches
- On the Spot Story Telling
- Role Plays and Simulations

UNIT-II: SOUNDS OF ENGLISH LANGUAGE

- Consonant Sounds
- Vowel Sounds
- Syllable Identification in Words
- Words Commonly Mispronounced

* *Lists of commonly mispronounced words to be provided to the learners*

SECTION-B

UNIT-III: READING COMPREHENSION

- Comprehension of Unseen Passages, Graphs and Tabulated Data
- Techniques of Reading Skills – Skimming and Scanning

UNIT-IV: LISTENING SKILLS

- Listening to Spellings and Dictation
- Listening to Words with Vowel Difference

Text Books:

1. *Intermediate Grammar, Usage and Composition* by M. L. Tickoo and A. E. Subramanian, Orient Longman

Reference Books

2. *Spoken English for India* by R.K. Bansal and J. B. Harrison, Orient Longman
3. *A Practical English Grammar* by Thomson and Martinet, OUP, Delhi.
4. *A Textbook of English Phonetics for Indian Students* by T. Balasubramanian, MacMillan, Chennai
5. *High School English Grammar & Composition* by Wren & Martin, S. Chand & Company Ltd.,
6. *English for Professionals* By Dr. Seema Miglani & Shikha Goyal, Vayu Education of India, New Delhi.

CAP- 101-A Fundamental of Computer and Programming using C Lab (0-0-2)
Credit-1

- 1- Program to demonstrate the use of variables, and input output statements.
- 2- Program to demonstrate the use of various arithmetic and logical operators.
- 3- Program to demonstrate the use of various decision making statements.
- 4- Program to demonstrate the use of various looping statements.
- 5- Program to demonstrate the implementation of one dimensional array and its various operations

CAP-103-A

PC Software Lab (0-0-2)

Credit-1

MS – Word

1.Prepare a document about any tourist destination of your choice with appropriate pictures and editing features.

2.Prepare a News Paper Layout. Insert appropriate pictures wherever necessary. Use the following Features:

- Three Column and Four Column setting
- Set One or Two Advertisements
- Use Bullets and Numbering.

3.Create a Document consisting of Bio-data. It includes

- A table giving your qualification and/or experience of work. Table should be Bordered and Shaded.
- A Multilevel list giving your areas of interest and further areas of interest. The sub areas should be numbered as ‘a’, ‘b’, etc while the areas should be numbered as ‘1’, ‘2’, etc.
- The information should be divided in “General” and “Academic” sections.
- The header should contain “BIO-DATA” while the footer should have page numbers in the format Page 1 of 10.
- Assign a password for the document to protect it from unauthorized access.

4.Assume that you are coordinating a seminar in your organization. Write a letter to 10 different IT companies asking them to participate in the seminar using mail merge facility.

5. Prepare a document which contains template of marks card of students. Assume that there are 10 students. Use mail merge facility to forward the marks cards to the parents. The footer for the document should be ‘MVN University, Palwal’.

6.Prepare a document about any topic in mathematics which uses mathematical symbols. (At least 5 mathematical symbols should be used). Assign a password for the document to protect it from unauthorized access. Demonstrate the use of Hyperlink Option.

MS-EXCEL

1. Open a new workbook, save it as JavaCoffeeBar.xls. In sheet1 write following sales data for Java Coffee bar to show their First 6 months sales.

- Select cell B4:D4 and change the horizontal alignment to center and text to 90 degree.
- All titles should be in bold
- Format all cells numbers to currency style and adjust width as necessary.
- Add border to data.
- Select the cell range A1:H1, merge and center these cells. Apply same format to A2:H2.
- Give border, shading and pattern to data in sheet
- Apply different font settings for all titles in sheet
- Apply green color and bold setting to sales above 10000 (use conditional formatting)
- Rename current worksheet as FirstHalfSales

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2. Prepare a worksheet to maintain student information. The work sheet should contain Roll Number, Name and marks in 5 subjects. (Max Marks is 100). Validate the marks. Calculate the total marks. Assign the grade according to the following. Assign grade 'A' if the total marks is above 450. From 401 to 449 assign the grade as "B". From 351 to 400 assign the Grade as C. From 300 to 350 the grade to be assigned is 'D'. For the total marks less than 300 No grade is assigned. A student is eligible to get a grade only when he gets 40 and above in all the subjects. In such cases the grade is "FAIL". (Assume that there are 10 students).

3. Prepare a pay-bill using a worksheet. The work sheet should contain Employee Id, Name, Designation, Experience and Basic Salary and Job ID. If Job Id is 1 then DA is 40% of the basic salary. HRA is Rs. 4500. If Job Id is 2 then DA is 35% of the basic salary. HRA is Rs. 3500. If Job Id is 3 then DA is 30% of the basic salary. HRA is Rs. 2500. If Job Id is 4 then DA is 25% of the basic salary and HRA is RS.2500. For all the other Job ids DA is 20% of the basic salary and HRA is Rs.1500. For all the above Job ids PF to be deducted is 4%. For the job ids between 1-4 Rs. 100 to be deducted as Professional Tax. Find the net pay.

4. For the above employee worksheet perform the following operations

(a). Use filter to display the details of employees whose salary is greater than 10,000.

(b) Sort the employees on the basis of their net pay

(c). Use advance filter to display the details of employees whose designation is "Programmer" and Net Pay is greater than 20,000 with experience greater than 2 yrs.

5. (a) Using Excel write sales data with columns product, month and sales. Write at least 5 records. Create Pivot Table chart and Report for the data.

(b) Create a macro to change the name of worksheet as Macro Example, merge first three columns of first row and write heading as DATA in green color with yellow background

(c) Link word document in excel worksheet to show the usage of linking and embedding.

MS-POWERPOINT

1. Assume that you are going to give a presentation about Information Technology. (Choose some latest technologies). The presentation should have minimum 10 slides. Insert appropriate images wherever necessary. Use proper formatting, diagrams and tables. Show the application of Pens.

2. Prepare a presentation about any general topic of current relevance (min 10 slides). Show the usage of action buttons, hyperlinks, and animations.

CAL-102-A	Fundamentals of Internet Technologies	L T P	Cr
		4 1 0	5

Objective:

To have a fundamental understanding of the design, performance and state of the art of Internet. Topics covered include state of the art E-mail, Internet and research and thus changes substantially from one offering of this course to the next.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT- 1

Introduction to World Wide Web, Introduction to w3 consortium, Surfing & searching the www: Directories search engines and Meta search engines, search fundamentals, search strategies, working of the search engines, Telnet and FTP. Browser architecture & types, HTTP, URL, Web page types, Using Plug-ins. User generated Content: Blogs & Wikis.

UNIT-2

E-Mail Concepts – Configuring E-Mail Program, Sending and Receiving Files through E-Mail, Fighting Spam, Sorting Mail, and avoiding E-Mail viruses. E-Mail mailing lists,

UNIT – 3

Usenet newsgroup concepts – Reading UseNet newsgroups, Internet Relay Chat, Instant messaging, Web-Based chat rooms and discussion boards, Voice and Video conferencing.

SECTION – B

UNIT – 4

HTML: Internet Language, Understanding HTML, Create a Web Page, Text Alignment and Lists, Text Formatting Fonts Control.

UNIT-5

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Annexure I-A

Linking to other Web Pages, Publishing HTML Pages, E-mail Links and link within a Page, Creating HTML Forms.

UNIT-6

Creating Web Page Graphics, Putting Graphics on a Web Page, Custom Backgrounds and Colors, Creating Animated Graphics. Web Page Design and layout, Advanced Layout with Tables, Using Style Sheets.

Suggested Readings:

Text Books:

1. Fundamental of Internet & the world wide web, Raymond Green Law. & Ellen Hepp, 2001, TMH

Reference Books:

1. Internet & Web Design, Ramesh Bangia, Laxmi Publication
2. Complete Reference, Internet, TMH.
3. Pankaj Sharma, Web Administration, S.K. Kataria & Sons.

Note: Latest and additional good books may be suggested and added from time to time.

CAL-104-A	Mathematical Foundation Of Computer Science	L T P	Cr
		4 1 0	5

Objective:

To provide the basic architecture about the mathematical concept of computer that will help the students to understand that how the data is stored and traverse in computer.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT- 1

Algorithms, merits and demerits, type of algorithms, Exponentiation, How to compute fast exponentiation. Linear Search, Binary Search, "Big Oh" notation. Worst case, complexity.

UNIT-2

Graphs, Types of graphs, degree of vertex, sub graph, isomorphic and homeomorphic graphs, Adjacent and incidence matrices, Path Circuit ; Eulerian, Hamiltonian path circuit, Multi graph, labeled graph.

UNIT-3

Relation: Relations, Properties of Binary relation, Matrix representation of relations, Closures of relations, Equivalence relations, Partial order relation.

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SECTION – B

UNIT – 4

Trees, Minimum distance trees, Minimum weight and Minimum distance spanning trees, Binary search Tree, Avail Tree, Balance Tree.

UNIT – 5

Merge sort, Insertion sort, Selection Sort, Bucket Sort, Radix Sort, Bubble sort, Heap sort, Quick sort

UNIT – 6

Propositional Logic: Prepositions, logical operations, Tautologies, Contradictions, Logical implication, Logical equivalence, Normal forms, Theory of Inference and deduction. Predicate Calculus: Predicates and quantifiers. Mathematical Induction

Suggested Reading:

Text Books:

1. Schaums Outline series: Theory and problems of Probability by S. Lipshutz, 1982, McGraw-Hill
Singapore
2. Elements of Discrete Mathematics C.L Liu, 1985, McGraw Hill

Reference Books:

1. Discrete Mathematics by Johnson Bough R., 5th Edition, PEA, 2001..
2. Concrete Mathematics: A Foundation for Computer Science, Ronald Graham, Donald Knuth and Oren Patashik, 1989, Addison-Wesley.
3. Mathematical Structures for Computer Science, Judith L. Gersting, 1993, Computer Science Press.
4. Applied Discrete Structures for Computer Science, Doerr and Levasseur, (Chicago: 1985,SRA
5. Discrete Mathematics by A. Chtewynd and P. Diggle (Modular Mathematics series), 1995, Edward Arnold, London,

Note: Latest and additional good books may be suggested and added from time to time.

CAL-106-A	Advanced C Programming	L T P	Cr
		3 0 0	3

Objective:

To provide sound conceptual understanding of the advanced concept of C Language.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT- 1

C Functions: Definition of function, purpose, importance, declaration, recursion, call by value, call by reference type of function.

UNIT-2

Arrays: Arrays, pointers, array & pointer relationship, pointer arithmetic, dynamic memory allocation.

UNIT-3

Introduction to Pointer, pointer to arrays, array of pointers, pointers to functions, array of pointers to functions, Preprocessor directives: #include, #define, macro's with arguments, the operators # and ##, conditional compilations, multiple file programming.

SECTION – B

UNIT – 4

String : introduction to string, various function of string, Standard library functions from stdio.h, stdlib.h, conio.h, ctype.h, math.h, string.h, process.h

UNIT – 5

Structures: Structures, unions, structure passing to functions, bit fields, file handling

UNIT - 6

Data Files: Open, Close, Create, Process Unformatted Data Files. (Formatted Console I/O functions, Unformatted Console I/O functions, Modes Of Files, Use Of fopen(), fclose(), fgetc(), fputc(), fgets(), fprintf(), fscanf(), fread(),fwrite(),

Suggested Readings:

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Text Books:

1. Yashwant Kanetkar, "Let us C", BPB Publications, 2002
2. E. BalaGuruswamy, "Programming in ANSI C", TMH, 1999.

Reference Books:

1. Al Kelly and Ira Pohl, "A Book on C", (4th Ed.), Addison Wesley, 1999.
2. B. Kernighan and D. Ritchie, "The ANSI C Programming Language", PHI., 2000.

Note: Latest and additional good books may be suggested and added from time to time.

CAL-108-A	Introduction to Computer Network	L	T	P	Cr
		4	1	0	5

Objective:

To provide the basic knowledge of network architecture and connections.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

SECTION – A

UNIT- 1

Fundamental of Data communication:

Analog signal: Amplitude, Period and Frequency, wave length, Band width. Digital signal: Bit rate, Bit length, Transmission Impairment, Communication Mode: Simplex, Half Duplex, Full Duplex, Transmission modes: Synchronous and asynchronous Modes, Transmission media.

UNIT-2

Introduction to Network:

Introduction to Computer Networks, History of computer networks, Need and Applications of computer network, Example networks ARPANET, Internet, Private Networks, Introduction to Backbone and its benefits. Introduction to Ethernet its need and benefits.

UNIT – 3

Types of Networks Introduction to Local Area Networks, its Application, LAN Interconnecting Devices: NIC, Repeater, Hubs, Switches, Bridges, Routers, Gateways, Modem. Advantages and disadvantages of LAN Interconnecting devices. , Metropolitan Area Networks, Wide Area Networks, peer to peer network, client server network, circuit switching network, packet switching networks.

UNIT – 4

Network Topologies: Physical topologies: Bus, Star, Ring, Star Tree, and Mesh. Advantages and Disadvantages of various topologies in different scenarios .

Wireless Networks: Introduction to wireless networks, Examples of wireless networks, Infrastructural and Adhoc networks Difference between infrastructural and Adhoc networks, Wireless Topologies.

UNIT – 5

OSI model, Functions of each layer, Services and Protocols of each layer. TCP/IP: Introduction, History of TCP/IP, Layers of TCP/IP, Protocols, Internet Protocol, Transmission Control Protocol , User Datagram Protocol. IP Addressing, IP address classes.

UNIT - 6

Goal of network security, Types of security threats, Measures to ensure security.

Cryptography: Public key Cryptography, private key Cryptography, Difference among private and public key cryptography. Encryption schemes, Digital Signatures, Firewalls.

Suggested Readings:

Text Books:

1. Forouzan , Data Communication & Networking, TMH, N.Delhi.
2. Tannenbaum, Computer Networks, PHI, N.Delhi.

Reference Book:

1. Miller, Data and Network Communication, Vikas Publishing House, New Delhi.
2. Shay, Understanding Data Communication and Networks, Thomson Learning, Vikas
3. Computer Networks and Internet, Mukesh Dhuhana nad Deepak Verma Publishing House, New Delhi.

Note: Latest and additional good books may be suggested and added from time to time.

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Annexure I-A

AHL-108-A	MATHEMATICS-II	L	T	P	Cr
		4	1	0	5

Objective:

Applied Mathematics forms the backbone of engineering discipline. Basic elements of differential calculus, integral calculus, differential equations and coordinate geometry have been included in the curriculum as foundation course and to provide base for continuing education to the students.

Note:

For setting up the question paper, question no 1 will be set up from complete syllabus which will be compulsory and of short answer type. Three questions will be set from each of the sections. The students have to attempt first common question, which is compulsory, and two question from each of the sections. Thus students will have to attempt 5 questions out of 7 questions.

Section-A

Unit- I

Differential Calculus:

Functions, limits, continuity, - functions and their graphs, range and domain, elementary methods of finding limits(right and left), elementary test for continuity and differentiability Methods of finding derivative, Function of a function, Logarithmic differentiation, Differentiation of implicit functions.

Unit- II

Higher order differentiation: Higher order derivatives, Leibnitz theorem. Special functions (Exponential, Logarithmic, Hyperbolic, Inverse circular function), Definition, Graphs, range and Domain and Derivations of each of these functions. Application - Finding Tangents, Normal, Points of Maxima/Minima, Increasing/Decreasing functions.

Unit III

Integral Calculus :

Methods of Indefinite Integration: - Integration by substitution, Partial fraction and by parts, properties of definite integrals, Evaluation of definite integrals. Application: Finding areas bounded by simple curves, Length of simple curves, Volume of solids of revolution, centre of mean of plane areas. Simpsons and Trapezoidal Rule: their application in simple Cases.

Unit IV

Differential Equations:

Formation of differential equation ,Solution of first order and first degree differential equation by Variable separation, Homogeneous differential equation and reducible homogeneous differential equations , Linear differential equations and reducible linear differential.

Unit V

Co-ordinate Geometry:

Area of a triangle, centroid and incentre of a triangle (given the vertices of a triangle), Simple problems on locus Equation of straight line in various standard forms (without proof) with their transformation from one form to another, Angle between two lines and perpendicular distance formula (without proof)

Unit VI

Co-ordinate Geometry(Cont:) :General equation of circle and its characteristics ,The center and radius, Three points on it, The co-ordinates of the end's of the diameter Conics (parabola, ellipse and hyperbola), standard equation of conics (without proof), given the equation of conic to calculate foci, directrix, eccentricity, latus rectum, vertices and axis related to different conics.

Suggested Readings:

Text Books:

1. Applied Mathematics Vol. II by SS Sabharwal and Others; Eagle Parkashan,
Jalandhar

Reference Books:

1. Applied Mathematics Vol. II by Dr RD Sharma
2. Higher Engineering Mathematics by BS Grewal; Khanna Publishers, Delhi
3. Engineering Mathematics by Ishan Publication

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Annexure I-A

AHP-118-A	PERSONALITY DEVELOPMENT-II	L	T	P	Credit
		0	0	2	0

SECTION-A

UNIT-I: INTERACTIVE SKILLS

- Debates
- Group Discussions
- Mock Seminar
- Power Point Presentation

UNIT-II: SPOKEN SKILLS

- Mock Interview
- Dialogue Making
- Answer questions from your tutor or fellow students.
- Commonly Mispronounced Words

SECTION-B

UNIT-III: VOCABULARY EXPANSION

- Formation of words using prefixes and suffixes
- One word Substitution
- Commonly used Idioms and Phrases
- Words often Confused

UNIT-IV: BASIC ETIQUETTES

- Social Etiquettes
- Telephone Etiquettes
- Eating Etiquettes
- Meeting Etiquettes

Suggested Readings:

Text Books:

1. *Intermediate Grammar, Usage and Composition* by M. L. Tickoo and A. E. Subramanian, Orient Longman

REFERENCE BOOKS

2. *Spoken English for India* by R.K. Bansal and J. B. Harrison, Orient Longman

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Annexure I-A

3. *A Practical English Grammar* by Thomson and Martinet, OUP, Delhi
4. *A Textbook of English Phonetics for Indian Students* by T. Balasubramanian, MacMillan, Chennai
5. *High School English Grammar & Composition* by Wren & Martin, S. Chand & Company Ltd., New Delhi.
6. *English for Professionals* By Dr. Seema Miglani & Shikha Goyal, Vayu Education of India, New Delhi.

CAP-102-A	Internet Technologies Lab (0-0-2)	Credit-1
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- 1 Describe the stages of create e-mail id on yahoo web site, how will you send and receive e mail.
- 2 Describe the chatting components on the internet.
3. Describe the use and function of the following (a) telnet (b) TCP/IP (c) HTTP.
- 4 Create your first web page using notepad in HTML.
- 5 Create your login webpage for your college website or company website.
- 6 Create the web page with the following constraints
 - (a) an image on the webpage.
 - (b) a hyperlink to college website
 - (c) a table of marks of your class students.
- 7 Show blinking effect on web page
- 8 Design a digital clock on your web page
- 9 Design a digital calculator using HTML

Develop a program with functions

1. Without Arguments & without Return Value
2. With Arguments & without Return Value
3. With Arguments & with Return Value for the following
 - a) Sum of digits of in given number.
 - b) Factorial of a given number.
 - c) Check whether the given number is prime or not
 - d) find a raise to the power b
 - e) check whether a number is even or odd

Develop a program with functions using Arrays

- a) Largest of N numbers.
- b) Sum and average of N numbers.
- c) Sorting of N numbers.

Develop a program with Recursive Function for

- a) Factorial of a given number.
- b) Generation of Fibonacci series.

Differentiate between call by value and call by reference using a program to swap two numbers.

WAP to find sum of all elements of array using function.(pass individual element)

WAP to input an array then sort the array using function.(pass whole array)

WAP to input element in array than find largest element using array with pointer using function
STRUCTURES AND UNION

Develop a program to assign some values to the members a structure and to display the same on the screen. (Members of a structure include the student name, roll number and marks)

Develop a program to Define, Assign, Read and Display.

a)Book details b) Student information c)Employee information d) Bank A/C information

Develop a program to compare two structure variables.

Develop a program to find total and average of sales of all employees using array of structure.

Develop a program to read a set of Name, Roll Number, Date of Birth and Date of Admission of the students in the college from the keyboard where the date of birth and date of admission consists of three members such as day month and year as a separate structure.

Develop a program to illustrate the method of sending and one entry of the structure as a parameter to a function.

Develop a program to send the entire data of a structure to a function.

WAP to create a File “a.txt” than write 10 number to the file.

WAP to create two file “a.dat” and “b.dat”. Then write your details to “a.dat”.