SEMESTER - VI

SEMESTER – VI

ADVANCE MICROPROCESSOR & MICROCONTROLLERS (EC (ID) - 6003)

Course Code	**EC (ID) – 6003**	Credits: 4	L-3, T-1, P-0
Name of the Course	**Advanced Microprocessor & Micro Controllers**		
Lectures to be delivered	**52 (1 Hr Each) (L = 39, T = 13 for each semester)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 100**	**Min. Pass Marks: 40**
Continuous Assessment (based on sessional tests 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)	**Max. Marks: 50**		

Instructions

1. **For Paper Setters:** The question paper will consist of five sections A, B, C, D & E. Section E will be compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 20% of the total marks of the semester end examination for the course. Section A, B, C & D will have two questions from the respective sections of the syllabus and each question will carry 20% of the total marks of the semester end examination for the course.
2. **For candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in Section E. Use of non-programmable calculators is allowed.

SECTION – A

Introduction:

Introduction to microprocessors, microcomputer, batch processing, multiprocessing, multiprogramming, Time Share & multitasking systems. Introduction to 8086, 80186, 80286, 80386, 80486.

SECTION – B

Architecture & Programming of 8086:

Architecture – BIU, the queue, segment registers, instruction pointer, EU, Flag registers, addressing modes of 8086, instruction set of 8086, instruction format, min./max. mode.

Writing the programs, program format, segment and end directives, Data & addresses, Naming directives – EQU, DB, DW & DD, Flags, Jump, loop and string instructions.

SECTION – C

Programming in 8086 microprocessor unit, addition, subtraction, sorting, searching, multibyte addition, fibonacci, factorial, code conversion etc.

SECTION – D

32 bit microprocessors: 80186, 80286, 80386, 80486 systems and their comparison, interfacing of static and dynamic memories and I/o with 8086.

Interfacing of microprocessor to keyboard, alphanumeric display and stepper motor.

Suggested Books:-

1. Microprocessor & interfacing program & Hardware Tata McGraw Hills by D.V.Hall.
2. 8088/8086 microprocessor programming, interfacing, Hardware & application: Tribel & single PHI.
3. Advanced Microprocessor & interfacing: B.Ram TMH.
4. 8086 microprocessors by B.S.Chhabra.

SEMESTER – VI

MULTIMEDIA TECHNOLOGY (IT (ID) – 6004)

Course Code	**IT (ID) – 6004**	Credits: 4	L-3, T-1, P-0
Name of the Course	**MULTIMEDIA TECHNOLOGY**		
Lectures to be delivered	**52 (1 Hr Each) (L = 39, T = 13 for each semester)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 100**	**Min. Pass Marks: 40**
Continuous Assessment (based on sessional tests 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)		**Max. Marks: 50**	

Instructions

1. **For Paper Setters:** The question paper will consist of five sections A, B, C, D & E. Section E will be compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 20% of the total marks of the semester end examination for the course. Section A, B, C & D will have two questions from the respective sections of the syllabus and each question will carry 20% of the total marks of the semester end examination for the course.
2. **For candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in Section E. Use of non-programmable calculators is allowed.

SECTION – A

Introduction: Motivation Overview, Evolution of Multimedia, Structure and components of Multimedia. Application Domains, Internet and Multimedia, Multimedia and Interactivity, Primary User-Interface Hardware: Mouse. Keyboard, Joystick. Primary Visual Interface Items: Window, Buttons, Textbox, Icons. Basic Metaphors: Side – Show, Book, Hypertext. Hypertext, Hypermedia, Browsers and helper Application overview User Interface Design Issues.

Technology: Sound and Audio, Psycho acoustics – Frequency and amplitude sensitivity of hearing music and noise, stereo effects. Masking, Frequency domain compression of analog sound signal digitization of audio signal - sampling and coding, digital audio signal processing, architecture of a sound card, elementary concept of music, pitch and voice, staff notation and scoring, electronic music and synthesizer, MIDI interface, protocol and data format.

SECTION - B

Image & Graphics: Principles of raster graphics, Computer Visual Display concepts, Resolution, colour and pallets, Refresh rates an graphic accelerators, Digital image Representation and formats, Graphic drafting Tools, Image processing and enhancement, Colour printer principles, Image scanner principle, File formats, Digital still Camera and photography.

Animation and special effects: animation principles, Survey of animation tools, Special Visual Effects wiping, morphing etc.

Video Technology: Analog Video, Principles Broadcast standards, CCD Camera, Recording formats and standard, Digital Video, Principles, PC video and Videoconference standards, TV Cards Frame Grabber Principles, IDTV and HDTV principles, Motion Picture to Video Conversion.

SECTION – C

Data Compression: Data Compression Requirement, Information Theory based and frequency domain based and compression Basic Compression Techniques: DPCM, Runlength Coding, Huffman Coding, JPEG ISO, Realtime encoding and CCITT H.261 (px64) standard, MPEG-land II, DVI.

Multimedia Document and Interchange formats: Hypertext, HTML, MHEG and Hypermedia, SGML, Open document Architecture (ODA), Quick Time Movie film format, Open Media framework (OMFI)

SECTION – D

Synchronization: Temporal Dependence in Multimedia presentation. Inter-object and Intra-object Synchronisation, Time Abstruction for authoring and visualization, Reference Modle and Specification.

Application Development: Product development overview, Life cycle Models, Human Roles and Teamwork, Product Planning, Basic Authoring Paradigms: Story Scripts, Authoring Metaphors and authoring languages, Content Analysis: Message, platform, Metaphor and Navigation, cost-quality tradeoffs, Intellectual Property Right and Copyright issues.

Books:

1. Multimedia Systems Design, P.K.Andleigh and K.Thakrar, Prentice hall PTR, 1996.
2. Multimedia Computing, Communications and Applications, Ralf Steinmetz and Klara Nashtedt, Prentice Hall 1995.
3. Creating Multimedia Presentations, Douglas E.Wolfgram, Que. Crop., 1994.
4. Multimedia Authoring: Building and Developing Documents, Scott Fisher, AP Professional, 1994.
5. Multimedia systems, Ed. By John F.K.Buford, Addison – Wesley Publishing Co., 1994.
6. Multimedia Technology & Applications, David Hillman, Galgotia Publications.
7. Multimedia Systems, Rajneesh Agrawal, Excel Books.
8. Digital Multimedia, Nigel Chapman & Jenny Chapman, Wiley Publications.
9. Fundamentals of Computer Graphics and Multimedia, D.P.Mukherjee.

SEMESTER – VI

DIGITAL & ANALOG COMMUNICATION (CS – 6001)

Course Code	**CS – 6001**	Credits : 4	L-3, T-1, P-0
Name of the Course	**DIGITAL ANALOG & COMMUNICATION**		
Lectures to be delivered	**52 (1 Hr Each) (L = 39, T = 13 for each semester)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 100**	**Min. Pass Marks: 40**
Continuous Assessment (based on sessional tests 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)		**Max. Marks: 50**	

Instructions

1. **For Paper Setters:** The question paper will consist of five sections A, B, C, D & E. Section E will be compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 20% of the total marks of the semester end examination for the course. Section A, B, C & D will have two questions from the respective sections of the syllabus and each question will carry 20% of the total marks of the semester end examination for the course.
2. **For candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in Section E. Use of non-programmable calculators is allowed.

SECTION A

Fourier series and Fourier transform representation, convolution, laws of convolution, parsevals theorem (energy & power theorem).

SECTION B

NOISE: Sources of Noise, Frequency-Domain representation of noise, Spectral components of noise, response of narrow band filter to noise. Noise band width, Noise temperature, Noise figure.

SECTION C

Modulation & Deputy Registrar – Demodulation:
Introduction to AM, Frequency spectrum of AM waves, representation of AM, power relation in AM waves, need and description of SSB. Independent side band system of VSB. Generation and Detection of AM.
Introduction to FM, Mathematical Representation of FM, Frequency spectrum of FM wave, generation and detection of FM.
Basic principles of AM & FM receivers and transmitters.

SECTION D

DIGITAL COMMUNICATION:
Sampling theorem: Introduction to PAM, PWM, PPM, PCM, DPCM and Delta Modulation. Simple circuits for their generation.

Books Recommended:

1. Singh & Sapre “Communication Systems: Analog and Digital”, TMH.

2. Kennedy, “Electronics Communcation Systems”, TMH.
3. Taub & Schilling, “Principles of Communication Systems,” MCGraw Hill.
4. Tomasi, “Electronics Communication Systems: Fundamentals through Advanced”, Pearson Education Publisher.

SEMESTER – VI
COMPUTER GRAPHICS (CS – 6002)

Course Code	**CS-6002**	Credits: 4	L-3, T-1, P-0
Name of the Course	**Computer Graphics**		
Lectures to be delivered	**52 (1 Hr Each) (L = 39, T = 13 for each semester)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 100**	**Min. Pass Marks: 40**
Continuous Assessment (based on sessional tests 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)		**Max. Marks: 100**	

Instructions

1. **For Paper Setters:** The question paper will consist of five sections A, B, C, D & E. Section E will be compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 20% of the total marks of the semester end examination for the course. Section A, B, C & D will have two questions from the respective sections of the syllabus and each question will carry 20% of the total marks of the semester end examination for the course.
2. **For candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in Section E. Use of non-programmable calculators is allowed.

Section-A

Line Generation:

Points – Lines – Planes – Vectors – Pixels – Frame buffers – Vector and character generation.

Graphics Primitives:

Display devices – Primitive Operations – Display file structure – Display control text – Graphic Adapter cards and Monitors.

Polygons:

Polygon representation – Entering polygons – Filling polygons – Scan converting polygons – Aliasing and Ant aliasing half toning.

Section-B

Transformations:

Matrices – Transformations – Transformation routines – Display procedures.

Segments:

Segmentable – Creating, closing, deleting and renaming a segment – Visibility – Image transformation.

Windowing and Clipping:

View transformations – Clipping – Algorithms : Southerland – Cohen, Cohen – Sutherland, midpoint subdivision, Cyrus beak – Introduction to 3D – clipping – Generalized clipping – Multiple windowing.

Section-C

Interaction:

Hardware – Input device handling algorithms – Event handling – Echoing interactive techniques.

Three Dimensions:

3D Geometry – Primitives – Introduction to 3D transformations – Projections – Elementary ideas about curve generation – Surface generation using Bezier Spline, Biezer, Hermitte.

Section-D

Hidden Line and Surface:

Back face removal – Algorithms – Hidden line methods – Floating horizon algorithms – Roberts algorithm – War knock algorithm – Z – buffer algorithm – List priority algorithm.

Rendering:

A simple illumination model – Determining surface normal – Determining the reflection vector – Gourand shading – Phuong shading – Transparency shadows – Texture – Recent advances in rendering.

Books :

1. David F.Roger : PROCEDURAL ELEMENTS OF COMPUTER GRAPHICS; McGraw –Hill.
2. Rogers & Adams: MATHEMATICAL ELEMENTS OF COMPUTER GRAPHICS; McGraw- Hill.
3. Harrington S:COMPUTER GRAPHICS-A PROGRAMMING APPROACH; McGraw- Hill.

SEMESTER – VI
COMPILER DESIGN (CS-6003)

Course Code	**Cs-6003**	Credits : 4	L-3, T-1, P-0
Name of the Course	**Complier Design**		
Lectures to be delivered	**52 (1 Hr Each) (L = 39, T = 13 for each semester)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 100**	**Min. Pass Marks: 40**
Continuous Assessment (based on sessional tests 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)		**Max. Marks: 50**	

Instructions

1. **For Paper Setters:** The question paper will consist of five sections A, B, C, D & E. Section E will be compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 20% of the total marks of the semester end examination for the course. Section A, B, C & D will have two questions from the respective sections of the syllabus and each question will carry 20% of the total marks of the semester end examination for the course.
2. **For candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in Section E. Use of non-programmable calculators is allowed.

SECTION A

Introduction to Compilers:
Need for translators – Structure of a compiler – Error handling – Compiler writing tools.
Lexical Analysis:
The role of lexical analyze – Design – Languages for specifying lexical analyzer implementation.

SECTION B

Parsing:
Parsers – Shift reduce parsers – Operator Precedence parsing – Top down
Parsing – Predictive parsers.
Automatic Construction of Efficient Parsers:
LR Parsers – Construction SLR, Canonical LR and LALR Parsing tables –
Automatic parser generation – Implementation of LR parsing tables.

SECTION C

Syntax Directed Translation:

Schemes – Implementation – Intermediate code – Parse trees and syntax trees – Three Address code – Quadruples and triples – Translation of assignment statements – Boolean expressions.

Symbol tables and runtime storage:

Contents of Symbol table – Data structures for symbol table – Representation of scope information – Implementation of stack allocation schemes – Block Structured languages and storage allocation.

SECTION D

Introduction to Code Optimization:

Principal sources – Loop optimization – Global data flow analysis.

Code Generation:

Object program – Problems in code generation – A simple code generator - Register allocation and assignment.

Text Books:

Alfred V.Aho & Jeffrey D. Ullman : PRINCIPLES OF COMPILER DESIGN; Narosa Publishing House, 1990

References:

1. Alfred V. Aho et.al. : COMPILERS:PRINCIPLES, TECHNIQUES AND TOOLS; Addison Wesley Publishing Company, 1986
2. Dhamdhere D.M.: COMPILER CONSTRUCTION-PRINCIPLES AND PRACTICE; McMillan India Ltd.
3. Ravi Sethi & Ullman: COMPILER DESIGN; Narosa Publishing House.
4. David Gries :COMPILER CONSTRUCTION FOR DIGITALCOMPUTERS; John Wiley &Sons

SEMESTER – VI

RELATIONAL DATA BASE MANAGEMENT SYSTEM (CS- 6004)

Course Code	**CS – 6004**	Credits: 4	L-3, T-1, P-0
Name of the Course	**Relational Data Base Management System**		
Lectures to be delivered	**52 (1 Hr Each) (L = 39, T = 13 for each semester)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 100**	**Min. Pass Marks: 40**
Continuous Assessment (based on sessional tests 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)		**Max. Marks: 50**	

Instructions

1. **For Paper Setters:** The question paper will consist of five sections A, B, C, D & E. Section E will be compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 20% of the total marks of the semester end examination for the course. Section A, B, C & D will have two questions from the respective sections of the syllabus and each question will carry 20% of the total marks of the semester end examination for the course.
2. **For candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D of the question paper and all the subparts of the questions in Section E. Use of non-programmable calculators is allowed.

Section-A

Query Processing and Optimization:

Basic Algorithms for executing Query Operations, Using Heuristics in Optimization

Transaction Processing Concepts:
Introduction to Transaction Processing, Transaction and System concepts Desirable Properties of transaction, Schedules and recoverability, Serializability of schedules.

Section-B

Concurrency Control Techniques:
Locking Techniques for concurrency control Techniques Based on Time Stamp Ordering, Multiversion concurrency control Techniques, Validation(optimistic) Concurrency Control Techniques

Recovery techniques:
Recovery Concepts, Recovery Techniques Based on Deferred Update, Recovery Techniques Based on Immediate Update, Shadow Paging, Recovery in Multi database Transaction.

Database Security and Authorization:
Introduction to Database Security Issues, Discretionary Access Control Based on Privileges, Mandatory Access Control for Multilevel Security, Statistical Database Security.

Section-C

Advanced Data Modeling Concepts
Enhanced – ER (ERR)-to-Relational Mapping, Data Abstraction and Knowledge Representation Concepts, Integrity Constraints in data modeling,
EER Update Operations and Transaction Specification, Overview of other Data models.

Object-Oriented Databases
Overview of Object-Oriented concepts, Object Identity, Object Structure and Type Constructor. Encapsulations of Operations, Methods and Persistence, Type and Class Hierarchies and Inheritance, Complex Objects, Other O – O concepts.

Section-D

Distributed Databases and Client-Server Architecture
Introduction to Distributed DBMS Concepts, Overview of Client-Server Architecture, Data Fragmentation, Replication and Allocation Techniques for Distributed Database Design, Types of Distributed Database Systems, Query Processing in Distributed Databases, Overview of Concurrency Control and Recovery in Distributed databases.

Deductive Databases
Introduction to Deductive Databases, Prolog/Data log Notation, Interpretation of Rules, Basic interference Mechanism for Logic Programs and their evaluation. The LDL System, Other Deductive Database Systems.

Emerging Database Technologies and applications
Progression of Database Technology, Emerging Database Applications, Next Generation of Databases and Database Management Systems, Interfaces with other Technologies.

Books:

1. **Ramez Elmasri, Shamkant B. Navathe**:"FUNDAMENTALS OF DATABASE SYSTEMS" The Benjamin/Cummings Publishing company 1994-Narosa Spetial Edition
2. **Ceri S. and Palagatti,G:**"DISTRIBUTED DATABASE : PRINCIPLES AND SYSTEM ,Mc Graw Hill, 1984.
3. **Korth, H. and Silberschatz,A**: "DATABASE SYSTEM CONCEPTS" Second Edition Mc Graw-Hill. 1991.

SEMESTER VI

ADVANCED MICROPROCESSORS LAB (EC(ID) – 6007)

Course Code	**EC(ID)-6007**	Credits: 2	L-0, T-0, P-2
Name of the Course	**Advanced Microprocessor Lab**		
Lectures to be delivered	**26 hours of Lab sessions**		
Semester End Examination	**Max. Time: 3 hrs**	**Max. Marks: 50**	**Min. Pass Marks: 20**

Laboratory	**Continuous Assessment (based on Lab work 30%, Lab record 25%, Viva 25%, Attendance 20%)**	**Max. Marks: 50**	**Min. Pass Marks: 25**

Instructions for paper setter/Candidates

Laboratory examination will consist of two parts:

i. Performing a practical examination assigned by the examiner (25 marks).

ii. Viva-voce examination (25 marks).

Viva-voce examination will be related to the practicals performed/projects executed by the candidate related to the paper during the course of the semester.

List of Experiments

1. Study of 8086 Microprocessor kit.
2. Write a program using 8086 for division.
3. Write a program for finding square root of given number.
4. Write a program using 8086 for:
   a) Finding largest number from an array
   b) Finding smallest number from an array
5. Write a program using 8086 for arranging an array of nos. in ascending & descending order.
6. Write a program to control the operation of stepper motor using 8086 & 8255 PPI
7. Write a program to convert binary code to gray code.
8. Write a program to calculate the number of bits in a string.
9. Write a program to convert data string into its 2's complement form.
10. Write a program to move a block of words from one memory location to other.

SEMESTER – VI

MULTIMEDIA TECHNOLOGY LAB (IT (ID)– 6008)

Course Code	**IT (ID) – 6008**	Credits: 2	L-0, T-0, P-2
Name of the Course	**MULTIMEDIA TECHNOLOGY LAB**		
Lectures to be delivered	**26 hours of Lab sessions**		
Semester End Examination	**Max. Time = 3 hrs.**	**Max. Marks : 50**	**Min. Pass Marks: 20**
Laboratory	**Continuous Assessment (based on Lab work 30%, Lab record 25%, Viva 25%, Attendance 20%)**	**Max. Marks: 50**	**Min. Pass Marks: 25**

Instructions for paper setter/Candidates

Laboratory examination will consist of two parts:

i. Performing a practical examination assigned by the examiner (25 marks).
ii. Viva-voce examination (25 marks).

Viva-voce examination will be related to the practical performed/projects executed by the candidate related to the paper during the course of the semester.

LIST OF EXPERIMENTS:

1. Using available Multimedia software like Photoshop, Macromedia, Generator, Flash to create
   a) Backgrounds.
   b) Titling.
   c) Icons.
   d) Pulls.
   e) Buttons & Bullets.
   f) Menu Bars.
   g) Animation (Rotate, fade, Marquee, Twirl, Morphing etc. and submit a project in consultation with instruction tutor incharge.
2. Overview of Flash 5.
   a) Menu. b) Lasso Tool. c) Arrow Tool. d) Pen Tool.
3. Working with Drawing and Painting Tool.
4. Working with Bitmap and Raster Graphics.
5. Sound and Movie.
6. Understand of Action scripts.
7. 3-D graphics.
8. Animation.
9. Write a program to read a paragraph and store it in suggested format.
10. Study the pions notes and stimulate them using key board and store them in file.
11. Write a program to play wave, mid file.

Projects:

1. Create a HTML based static website.
2. Create a Animated movie in flash.
3. Create a full motion video movie in flash.

4. Create a post table game in flash.

SEMESTER – VI

COMPUTER GRAPHICS LAB(CS – 6005)

Course Code	**CS-6005**	Credits: 2	L-0, T-0, P-2
Name of the Course	**Computer Graphics Lab**		
Lectures to be delivered	**26 hours of Lab work (2 hours per week)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 50**	**Min. Pass Marks: 25**
Laboratory Continuous Assessment	Lab Work 30%, Lab record 25%, Viva/Hands on 25%, Attendance 20%	**Max. Marks: 50**	**Min. Pass Marks: 25**

Instructions for paper setter/Candidates

Laboratory examination will consist of two parts:

i. Performing a practical examination assigned by the examiner (25 marks)
ii. Viva-voce examination (25 marks)

Viva-voce examination will be related to the practical performed/project executed by the candidate related to the paper during the course of the semester.

1. Program to draw line using Bresenham's algorithm for all quadrants.
2. Program to draw a circle.
3. Program to draw an ellipse.
4. Program to draw a spiral using Bresenham's circle drawing algorithm.
5. Procedure to move a line around the circle.
6. Procedure to rotate a wheel.
7. Procedure to translate a circle.
8. Solid area scan conversion.
9. 2 Dimensional & 3 Dimensional Transformation.
10. Program to show 2D clipping and windowing.
11. Development of 2D graphics package.

NOTE : **Record to be maintained both electronically and hard copy for evaluation**

SEMESTER – VI

Compiler Design Lab (CS – 6006)

Course Code	**CS-6006**	Credits : 2	L-0, T-0, P-2
Name of the Course	**Compiler Design Lab**		
Lectures to be delivered	**26 hours of Lab work(2 hours per week)**		
Semester End Examination	**Max. Time: 3 hrs.**	**Max. Marks: 50**	**Min. Pass Marks: 20**
Laboratory Continuous Assessment	Lab Work 30%, Lab record 25%, Viva/Hands on 25%, Attendance 20%	**Max. Marks: 50**	**Min. Pass Marks: 25**

Instructions for paper setter/Candidates

Laboratory examination will consist of two parts:

i. Performing a practical examination assigned by the examiner (25 marks)
ii. Viva-voce examination (25 marks)

Viva-voce examination will be related to the practical performed/project executed by the candidate related to the paper during the course of the semester.

1. Design and implementation of text editor with variations.
2. Design and implementation of syntax directed line editor.
3. Design and implementation of a two pass assembler for a hypothetical computer.
4. Design and implementation of a microprocessor for a hypothetical machine.
5. To write a program in a suitable high level language to carry out lexical analysis of an input program in H.L.L. (Pascal, Fortran etc.)
6. To write a parser using C or Pascal language for any input HLL program for which lexical analysis have been carried out.
7. To write a program to generate machine code for restricted programming expressions.
8. Design and implementation of a linkage editor on an existing installation.
9. Design of a cross assembler on existing installation.
10. Design and implementation of an application package like spread sheet.
11. Experiment on code optimization of programming expressions.

NOTE : *Record to be maintained both electronically and hard copy for evaluation*