SCHEME OF EXAMINATION FOR B.TECH DEGREE COURSE

Eighth Semester Examination

(Computer Engineering)

Sr. No.	Course No.	Subject	Teaching Schedule				Examination Schedule				Duration of Exam (Hours)
			L	T	P	Total	Theory	Sessional	Practical	Total	
1	CSE-446	Expert Systems	3	1	-	4	75	50	-	125	3
2	CSE-472	Object Oriented Software Engineering	3	1	-	4	75	50	-	125	3
3	CSE-402	Neural Networks and Fuzzy Logic	4	1	-	5	100	50	-	150	3
4	CSE-404	Interactive Computer Graphics	4	1	-	5	100	25	-	125	3
5	CSE-406	Neural Networks (Pr.)	-	-	3	3	-	50	50	100	3
6	CSE-408	Major Project	-	-	12	12	-	100	100	200	3
7	CSE-410	Seminar	-	2	-	2	-	50	-	50	-
8	CSE-412	Comprehensive Viva-Voce	-	-	-	-	-	50	-	50	-
9	CSE-414	General Fitness & Professional Aptitude	-	-	-	-	-	-	75	75	3
Total			14	6	15	35				1000	

B.TECH VIIIth SEMESTER

EXPERT SYSTEMS

(CSE-446)

L T P	Theory : 100
3 1 -	Sessional : 50
	Total:150
	Time : 3Hrs

UNIT I :

Feature of expert system, Representation and organization of knowledge, Basics characteristics, types of problems handled by expert systems, Case study of PROSPECTOR.

UNIT II :

Expert system Tools: Techniques of knowledge representations in expert systems, knowledge engineering, System-building aids, support facilities, stage in the development of expert systems.

UNIT III :

Building an Expert System: Expert system development, Selection of tool, Acquiring knowledge, Building process.

UNIT IV :

Problems with Expert Systems: Difficulties, common pitfalls in planning, dealing with domain expert, difficulties during development.

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REFERENCE BOOKS :

1. Waterman D.A.A Guide to Expert Systems, Addison Wesley Longman
2. Hayes-Roth, Lenat and Waterman: Building Expert Systems, Addison Wesley
3. Weiss S.M. and Kulikowski C.A.A Practical Guide to Designing Expert Systems, Rowman & Allanheld, New Jersey

NOTE:The question paper shall have eight questions in all organized into four sections, each section having two questions from each of the four units. The candidate shall have to attempt five questions in all, selecting at least one question from each unit.

B.TECH. VIIIth SEMESTER

OBJECT ORIENTED SOFTWARE ENGINEERING
(CSE-472)

L T P	Theory : 75
3 1 -	Sessional : 50
	Total:150
	Time : 3Hrs

UNIT-I

Design Objects, Class Hierarchy, Inheritance, Polymorphism, Object relationships and associations, Aggregations and Object Containment, Objec-t Persistence, Meta –classes. Object-oriented system development life cycle, Software development process object oriented systems development: a use-case driven approach.

UNIT-II

Object modeling techniques as software as software engineering methodology, Rumbaugh methodology, Jacobson methodology, Booch methodology, Patterns, frameworks, the unified modeling language (UML).

UNIT-III

Analysis Process, Use-Case Driven Object Oriented Analysis, Use-Case Model, Object Classification, Theory, Different Approaches for identifying classes, classes, responsibilities and collaborators, identifying Object Relationships, attributes and Methods, super-sub class relationship, Apart of Relationship-Aggregation, Class Responsibilities, Object Responsibilities.

UNIT-IV

Object Oriented design process, corollaries, design axioms, design patterns, object oriented design philosophy, UML Object Constraint Language, Designing Classes: The Process, Class Visibility, Refining Attributes, Designing Methods and Protocols, Packages and managing classes, Designing interface objects, View layer interface design, Macro and Micro level interface design process.

Suggested Books:

1. Ali Bahrami, Object Oriented Systems Development, : McGraw Hill, 1999
2. Rumbaugh et.al., Object Oriented Modeling and Design, PHI, 1997
3. Forouzan, Coombs and Fegan: Introduction to data Communications and Networks TMH, 1999.
4. Willam Stalling: Data and Computer Communications 5/e, PHI

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B.TECH VIIIth SEMESTER
NEURAL NETWORK & FUZZY LOGIC
(CSE-402E)

L T P
4 2 -

Theory : 100
Sessional : 50
Total:150
Time : 3 Hrs

UNIT – I:

Introduction: Concept of Neural Networks, Characteristics of Neural Networks, Historical perspective and application of Neural Networks.

Fundamental of Neural Networks: The Biological prototype, Neuron concept, Single layer Neural Networks, Multi Layer Neural Networks, Terminology, Notation and representation of Neural Networks, Training of Artificial Neural Networks. Representation of Perceptron and issues, Perceptron learning and training, classification, liner separability.

UNIT – II:

Hopfield nets: Structure, training , and applications, stability Back propagation: Concept, Applications, and Back Propagation Training Algorithms: Counter Propagation Networks: Kohonan Network, Grossberg Layer & Training, application of counter propagation, Image classification.

UNIT – III:

Bi-directional Associat4th e Memories: Structure, retrieving a stored association, encoding associations, memory capacity.

ART: ART architecture, ART classification operation, ART implementation, and characteristics of ART.

UNIT – IV:

Optical Neural Networks: Vector Matrix Multipliers, Hop field net using Electro optical matrix multipliers, Holographic correlator, Optical Hopfield net using Volume Holograms. The Cognitrons and Neocognitrons: Their structure and training. Genetic Algorithms : Elements, a simple genetic algorithm, working of genetic algorithms evolving neural networks. Operating Systems: Real Time Functions and Services, OS Architectures-Real Time UNIX and POSIX, Issues in Task management-Processes and Threads, Scheduling Synchronization and communication.

Suggested Books:

1. Real-Time Systems and software by Alan C. Shaw; John Wiley & Sons Inc

NOTE:

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B.TECH VIIIth SEMESTER

INTERACTIVE COMPUTER GRAPHICS

(CSE-404E)

L T P	Theory : 100
4 1 -	Sessional : 25
	Total:125
	Time : 3 Hrs

UNIT I

Display Devices: Line and point plotting systems: Raster, vector, pixel and point plotters, Continual refresh and storage displays, Digital frame buffer, Plasma panel display, Very high-resolution devices. High-speed drawing, Display processors, Character generators, Colour Display techniques (shadow mask and penetration CRT, colour look-up tables, analog false colours, hard copy colour printers)

UNIT II

Display Description: Screen co-ordinates; user co-ordinates, Graphical data structures (compressed incremental list, vector list, use of homogeneous coordinates); Display code generation Graphical functions: the view algorithm. Two-dimensional transformation, Line drawing, Circle drawing algorithms.

UNIT III

Interactive graphics: Pointing and position devices (cursor, lightpen, digitizing tablet, the mouse, track balls). Interactive graphical techniques, Positioning (Elastic or Rubber Band lines, Linking, zooming, panning clipping, windowing, scissoring). Mouse programming.

UNIT IV

3-D Graphics: Wire-frame, perspective display, perspective depth, projective transformations, Hidden line and surface elimination, Transparent solids, shading. Two-dimensional transformations, 3-dimensional transformations, Interactive Graphical Techniques GUI.

TEXT BOOK:

1. Introduction to Radar Systems: Merrill I. Skolnik, ; MGH

REFERENCE BOOK:

1. Giloi, W.K. Interactive Computer Graphic, Prentice Hall
2. Newman, W. Sproul, R.F. Principles of Interactive Computer Graphic, McGraw Hill
3. Harrington, S. Computer Graphic: A Programming Approach, Tata McGraw Hill
4. Hearn, D. Baker, Computer Graphics, Prentice Hall
5. Kelley Bootle, Mastering Turbo C

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B.TECH VIIIth SEMESTER
NEURAL NETWORKS PRACTICALS
(CSE-406E)

L	T	P
-	-	3

Sessional : 50
Viva : 50
Total:100
Time : 3 Hrs

LIST OF EXPERIMENTS

1. NN for AND ,OR gate using perception.

2. Perception to classify odd and even numbers.

3. NN for alphabet recognition using backpropagation.

4. Hopfield n/w for recognizing patterns such as '+' and '-'.

5. Nn for EX-OR classification using Back propagation.

6. CPN for image classification.

7. Name and telephone number recognition system.