Code : 1G151

R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

III B.Tech. I Semester Regular Examinations, January 2014

Compiler Design

(CSE)

Time: 3 hours **Max Marks: 70**

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)

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1. a) Explain, in detail, lexical analyzer generator. 6M
   b) Describe the lexical errors and various error recovery strategies with suitable examples. 8M
2. a) What is ambiguous grammar? Eliminate ambiguities for the grammar:
   $E \rightarrow E + E|E*E|(E)|id.$ 6M
   b) What is recursive descent parser? Construct recursive descent parser for the following grammar.
   $E \rightarrow E + T|T$
   $T \rightarrow TF|F$
   $F \rightarrow F*|a|b$ 8M
3. a) What is an operator grammar? Give an example. 6M
   b) Construct SLR parsing table for the grammar.
   $S \rightarrow AS \mid b$
   $A \rightarrow SA \mid a$ 8M
4. a) Write short notes on L-attributed definitions. 6M
   b) Write the quadruple, triple, indirect triple for the following expression.
   $(x + y) * (y + z) + (x + y + z)$ 8M
5. a) What are the various attributes of a Symbol Table? 6M
   b) What is syntax directed translation? How it is used for translation of expressions? 8M
6. a) What is loop invariant operation? Write an algorithm for detecting loop in- variant computations. 6M
   b) What are the applications of DAG? Explain how the following expression can be converted in a DAG a+b*(a+b)+c+d. 8M
7. a) Explain natural loops and inner loops of a flow graph with an example. 6M
   b) Discuss how induction variables can be detected and how transformation can be applied. 8M
8. a) Explain the concept of object code forms. 6M
   b) Describe in detail about register allocation and assignment generic code generation algorithms. 8M

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Code : 1G152

R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

III B.Tech. I Semester Regular Examinations, January 2014

Computer Graphics

(CSE)

Time: 3 hours **Max Marks: 70**

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)

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1. a) Compare and Contrast between Raster-Scan and Random-Scan systems?

   b) Explain conceptual frame work for Interactive Graphics?

2. a) How to generate Lines in Computer Graphics?

   b) Differentiate and distinguish between DDA & Bresenham's Line generation algorithms?

3. a) Derive different Reflection Transformation matrices?

   b) Explain Transformation between Co-ordinate systems?

4. What is Viewing Pipeline? Derive Window-to-Viewport Co-ordinate Transformation?

5. What are the Basic Illumination models? Explain briefly?

6. a) What are the different 3D-Transformations represented in Homogeneous Co-ordinates from?

   b) Derive a matrix for Rotation about an arbitrary Axis Transformation?

7. Write a short notes on BSP Tree, Area Subdivision, and Octree methods?

8. a) What are Computer animation Languages? Explain?

   b) Write a notes on Key Frame systems?

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Code : 1G153

R11

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

III B.Tech. I Semester Regular Examinations, January 2014

Computer Networks

(Common to CSE & IT)

Time: 3 hours **Max Marks: 70**

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)

* * * * *

1.	a)	List out the categories of Network Hardware? Explain any two in detail?	7M
	b)	Explain about OSI Reference Model with neat sketch?	7M
2.	a)	Explain about i)Magnetic Media ii) Fiber Optics	7M
	b)	Discuss about the structure of the PSTN?	7M
3.	a)	Explain Goback N sliding window protocol?	7M
	b)	Write short notes on different Framing techniques?	7M
4.	a)	Discuss about carrier sense Multiple Access Protocols?	7M
	b)	Explain IEEE 802.11 Frame structure?	7M
5.	a)	Explain about Shortest path routing algorithm?	7M
	b)	Explain about choke packets?	7M
6.	a)	Explain about IPv4 protocol Frame format?	7M
	b)	Discuss about Token Bucket algorithm?	7M
7.	a)	Describe the services provided by transport layer to above layers.	7M
	b)	Explain about Flow control and Buffering in Transport layer?	7M
8.	a)	Write short notes on Electronic Mail?	7M
	b)	Explain about WWW?	7M

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Code : 1G355 **R11**

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

III B.Tech. I Semester Regular Examinations, January 2014

Microprocessors and Interfacing

(Common to CSE & IT)

Time: 3 hours **Max Marks: 70**

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)

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1.	a)	Classify the registers in 8086 as per their function and explain in detail.	10M
	b)	Discuss the differences between maximum and minimum mode.	4M
2.	a)	Give the importance of each field in the instruction format of 8086.	4M
	b)	Explain different addressing modes in 8086.	10M
3.	a)	Give the importance of latches and buffers in interfacing I/O devices.	4M
	b)	Develop the circuit to interface A/D circuit with 8255 and write suitable alp program.	10M
4.	a)	Differentiate SRAM and DRAM.	4M
	b)	Design Interfacing circuit of four 16K bytes of RAMs to microprocessor 8086.	10M
5.	a)	Explain different data transfer methods.	8M
	b)	Give the 8086 interrupt structure.	6M
6.	a)	Differentiate synchronous and asynchronous data transfers.	4M
	b)	Write a program to transmit the message "COLLEGE" using 8251 USART.	10M
7.	a)	Discuss the features of 80386.	8M
	b)	Differentiate real and protected mode.	6M
8		Explain 8051 architecture with suitable diagram.	14M

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R11

Code : 1G154

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

III B.Tech. I Semester Regular Examinations, January 2014

Operating Systems

(CSE)

Time: 3 hours **Max Marks: 70**

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)

* * * * *

1.	a)	What is the purpose of an operating system? What are its goals?	6M
	b)	Explain the structure of the following operating systems: i. Mac OS X ii. UNIX	8M
2.	a)	What is a thread? Illustrate the difference between a traditional single-threaded process and a multithreaded process.	6M
	b)	Explain the following scheduling algorithms with examples: i. Shortest-remaining-time-first ii. Round robin	8M
3.	a)	What is a semaphore? Explain the usage and implementation of semaphores.	8M
	b)	Explain the usage of a monitor.	6M
4.	a)	"A deadlocked state is an unsafe state. Not all unsafe states are deadlocks." Illustrate this with an example?	4M
	b)	Explain with an example Banker's algorithm for deadlock avoidance.	10M
5.	a)	With a neat diagram explain paging hardware with TLB.	7M
	b)	Explain Second-chance page replacement algorithm with an example.	7M
6.		Mention the three major methods of allocating disk space. Explain each in detail with examples.	14M
7.	a)	What is RAID? Explain about the improvement of reliability in RAID via redundancy.	8M
	b)	Give a brief note on storage area network.	6M
8.	a)	What is protection? Explain the principles of protection.	7M
	b)	Give a detailed note on the following program threats: i) Trojan horse ii) Trapdoors iii) Logic bombs	7M

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R11

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET

(AUTONOMOUS)

III B.Tech. I Semester Regular Examinations, January 2014

Principles of Programming Languages

(CSE)

Time: 3 hours **Max Marks: 70**

Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)

* * * * *

1. a) Explain the different areas of computer applications and their associated languages. 7M
   b) Explain the characteristics that affect the language evaluation criteria. 7M
2. a) What are the essential constructs of imperative programming languages? Explain logical pretest loop 7M
   b) Define syntax and semantics. Explain axiomatic semantics. 7M
3. a) Define scope? Mention the advantages and disadvantages of dynamic scoping? 7M
   b) Describe lazy and eager approaches to reclaiming garbage? 7M
4. a) What are the design issues of multiple selection statements? 7M
   b) What are functional side effects? How does operand evaluation order interact with functional side effects? 7M
5. a) Explain the implementation models of parameter passing. 10M
   b) In what ways can aliases occur with pass-by-reference parameters? 4M
6. a) Mention the differences between a C++ class and an ADA package. 6M
   b) What are the design issues for language support for concurrency? 8M
7. a) How are exceptions handled in Ada? 10M
   b) What are the three forms of a Prolog term? 4M
8. a) Explain the features of LISP functional programming language. 10M
   b) What are the differences between CONS, LIST, APPEND? 4M

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