

Code : 1G152

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

III B.Tech. I Semester Supplementary Examinations June/July 2014**Computer Graphics**

(Computer Science & Engineering)

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) What are the Application areas of Computer Graphics?
b) Explain overview of Graphics Systems?
2. Define Polygon? Explain Scan Line Polygon Fill and Boundary Fill algorithms?
3. a) Derive matrices for different Shear Transformations?
b) Show that a “Rotation Transformation about the origin can be done by three Shearing Transformations”?
4. What is Line clipping? Compare and Contrast between Cohen-Sutherland and Cyrus-Beck Line clipping techniques?
5. What is Surface Modeling? Explain Lagrangian Interpolation method for drawing curves?
6. a) Define 3D-Viewing Pipeline? What are the 3D-Viewing Parameters?
b) Derive Perspective Projection Transformation matrix?
7. Write a short notes on Back-Face Detection method and Depth Buffer method? Explain?
8. a) What is Computer Animation? Explain different Animation Sequences?
b) Explain General Computer Animation and Raster Animation functions?

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
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III B.Tech I Semester Supplementary Examinations June/July 2014
Operating Systems

(Computer Science & Engineering)

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) Define the essential properties of the following types of operating systems:
 - i. Time sharing
 - ii. Distributed 8M
- b) Give a note on system calls used for process control. 6M
2. a) Show the fields of a PCB. Explain the purpose of each field. 7M
- b) What is meant by 'convoy effect' in the context of FCFS scheduling algorithm? Explain with an example. 7M
3. a) Discuss in detail Peterson's solution to the critical section problem. 10M
- b) Describe the requirements for solving critical-section problem? 4M
4. a) Explain about the resource allocation graph algorithm for deadlock avoidance. 6M
- b) Discuss in detail about deadlock prevention? 8M
5. a) What is demand paging? Explain the hardware support for demand paging. 6M
- b) Explain the following page replacement algorithms with suitable example.
 - i. LRU algorithm
 - ii. Second-Chance algorithm 8M
6. a) Explain in detail about tree-structured directories. What are its advantages and disadvantages? 6M
- b) Discuss the following free space management techniques.
 - i) Bit vector
 - ii) Linked list 8M
7. a) Explain with an example the swap-space management. 7M
- b) Explain C-SCAN scheduling algorithm with an example. 7M
8. a) Give a detailed description of access matrix with suitable examples. 8M
- b) Explain about the four levels where security measures must be taken to protect a system. 6M

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

III B.Tech. I Semester Supplementary Examinations June/July 2014***Principles of Programming Languages******(Computer Science & Engineering)*****Time: 3 hours****Max Marks: 70**

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

1. a) How does the computer architecture and programming design methodologies influence the language design? 8M
- b) Why do we need to study the concepts of programming languages? 6M
2. a) Prove that the following grammar is ambiguous.
 $\langle S \rangle \quad \langle A \rangle$
 $\langle A \rangle \quad \langle A \rangle + \langle A \rangle \mid \langle id \rangle$
 $\langle id \rangle \quad a \mid b \mid c$ 6M
- b) Explain axiomatic semantics. 8M
3. a) What is type binding? Explain the different ways of specifying type binding. 7M
- b) Mention the solutions to dangling pointer problem? 7M
4. a) What is short circuit evaluation? Explain with an example. 7M
- b) What are the design issues for counter - controlled loop statements? 7M
5. a) What are the design issues of subprograms and functions? 10M
- b) In what ways are co-routines different from conventional subprograms? 4M
6. a) Define an abstract data type. Explain abstract data types in Ada with the help of examples. 7M
- b) How does Ada support for concurrency? 7M
7. a) Describe the five different states in which a task can be? 7M
- b) Explain how backtracking works in Prolog. 7M
8. Explain the fundamentals of functional programming languages and its applications. 14M

Code : 1G355

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations June/July 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 8086 flags and discuss each flag. | 8M |
| b) | Show how the memory is organized in 8086. | 6M |
| 2. a) | Develop 8086 assembly code to reverse the string using string instruction. | 8M |
| d) | Differentiate procedures and macros. | 6M |
| 3. a) | Differentiate I/O mapped I/O and memory mapped I/O. | 6M |
| b) | With the help of mode register explain different modes of 8255 PPI. | 8M |
| 4. a) | What is the necessity of DMA? | 4M |
| b) | Explain the architecture of 8257 with suitable diagram. | 10M |
| 5. | Explain different 8253 mode of operation. | 14M |
| 6. a) | Explain the signal lines in RS 232 standard. | 8M |
| b) | Discuss high speed serial communication standards. | 6M |
| 7. a) | Discuss the advanced features implemented in Pentium processors. | 10M |
| b) | Discuss the advantages of paging over segmentation. | 4M |
| 8. a) | Sketch the memory organization in 8051. | 10M |
| b) | Write short notes on applications of timers, serial communication and interrupts. | 4M |

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ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations June/July 2014**Compiler Design***(Computer Science & Engineering)***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 compiler? Compare compiler and interpreter with suitable diagrams. 6M
b) What are various phases of compiler? Explain each phase in detail. Write down the output of each phase for expression $a := b + c * 4$. 8M
2. a) What are the difficulties in top down parsing? Explain in detail. 6M
b) Construct predictive parsing table for the following grammar.
 $E \rightarrow TE'$
 $E' \rightarrow +TE' \mid \epsilon$
 $T \rightarrow FT'$
 $T' \rightarrow FT' \mid \epsilon$
 $F \rightarrow (E) \mid id$ 8M
3. a) Define handle. Give suitable example. 6M
b) Explain the stack implementation of shift reduce parsing method with an example. 8M
4. a) Write short notes on S-attributed definitions. 6M
b) Write the quadruple, triple, indirect triple for the statement $a := b * - c + b * - c$. 8M
5. a) Explain the hash table with temporary and permanent storage. 6M
b) What is an ordered and unordered symbol table? What is the function of symbol table in the compilation process? Explain. 8M
6. a) What is code optimization? What are its advantages? Explain briefly about folding. 6M
b) What is DAG? Construct the DAG for the following basic block
 $D := B * C$
 $E := A + B$
 $B := B + C$
 $A := E - D$ 8M
7. a) What is flow graph? Explain in detail about global optimization. 6M
b) Explain the equation for computing live variables in a given flow graph. 8M
8. a) Explain the different issues in the design of a code generator. 6M
b) Explain in detail about machine dependent code optimization. 8M

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III B.Tech I Semester Supplementary June/July 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) Discuss about TCP/IP Reference Model with neat sketch? 7M
b) Differentiate between connection oriented service with connection less service? 7M
2. a) Explain about i)Twisted pairs ii) Coaxial cable 7M
b) Explain about Switching Techniques in PSTN? 7M
3. a) A bit stream 10011101 is transmitted using the standard CRC method described in the text. The generator polynomial is X^3+1 . Show the actual bit string transmitted. Suppose the third bit from the left is inverted during transmission. Show that this error is detected at the receiver's end? 14M
4. a) Explain about ALOHA protocols for multiple accesses? 7M
b) Discuss about Binary Exponential Backoff algorithm? 7M
5. a) Discuss the services provided by Network Layer to the Transport layer? 7M
b) Explain about Distance Vector Routing algorithm with an example? 7M
6. a) Explain Leaky Bucket algorithm? 7M
b) Explain IP addresses and Subnet Masking? 7M
7. a) Describe the Internet Transport Protocol - UDP? 14M
8. a) Write short notes on Electronic mail? 7M
b) Explain about Domain Name System? 7M
