

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Compiler Design*(Computer Science & Engineering)***Max. Marks: 70****Time: 03 Hours**Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) What is bootstrapping, explain with suitable example? 5M
 b) With suitable example explain the phases of compiler. 9M
2. a) Explain about the recursive descent parsing? 4M
 b) Write the procedure to construct predictive parsing table. State whether the following grammar is LL(1) or not.

$$S \rightarrow i E t S \mid i E t S e S \mid a,$$

$$E \rightarrow b$$
10M
3. a) Compare different bottom up parsers 5M
 b) State whether the following grammar is SLR or not. Justify.

$$S \rightarrow Aa \mid bAc \mid Bc \mid bBa,$$

$$A \rightarrow d,$$

$$B \rightarrow d$$
9M
4. a) What is S-attributed definition and L- attributed definition. Write the Translation scheme for evaluation of expression using L-attributed definition. 7M
 b) Give the significance of intermediate code representation. Write three address code for the following expression $((a+b)*(b-c)/(b+a+c))$. 7M
5. a) What is activation record? Explain the use of activation records dynamic storage allocation. 7M
 b) Write the procedure to identify the basic blocks. Illustrate with example. 7M
6. a) What is type system? List the rules for type system for verifying the data types in the expression. 6M
 b) Explain loop optimization techniques with suitable example. 8M
7. a) Write the code generation algorithm along with getreg() function. 10M
 b) Explain the data flow analysis in detail. 4M
8. a) Explain the different object code forms. 7M
 b) Distinguish machine dependent and independent optimization techniques. 7M

Code : 1G152

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Computer Graphics
(Computer Science & Engineering)

Max. Marks: 70**Time: 03 Hours**Answer *any five* questions

All Questions carry equal marks (14 Marks each)

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|----|---|----|
| 1. | a) Explain in detail about Raster Scan Systems? | 7M |
| | b) What are Video Display devices? Explain in detail? | 7M |
| 2. | a) Explain with example Boundary Fill Algorithm? | 7M |
| | b) What is Antialiasing? Explain? | 7M |
| 3. | a) Explain in detail about Rotation? | 7M |
| | b) What are Homogeneous Coordinates? Explain? | 7M |
| 4. | a) Explain with example Cohen Sutherland Algorithm? | 7M |
| | b) Explain in detail about Viewing Functions? | 7M |
| 5. | a) Explain about Bezier Curve in detail? | 7M |
| | b) Explain in detail about Polygon Rendering Methods? | 7M |
| 6. | a) Explain in detail about 3D Scaling? | 7M |
| | b) What are Composite Transformations? Explain? | 7M |
| 7. | a) Explain in detail about Back-face Detection? | 7M |
| | b) Explain BSP-Tree methods in detail? | 7M |
| 8. | a) Explain in detail about Raster Animation? | 7M |
| | b) What are Computer Animation Languages? Explain? | 7M |

Code : 1G153

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Computer Networks*(Common to CSE & IT)***Max. Marks: 70****Time: 03 Hours**Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Draw OSI reference model and Explain the functionalities of layers of OSI reference Model. 10M
b) What are the advantages and disadvantages of Wireless LANs? 4M
2. a) What is PSTN? What is Local LOOP? 7M
b) Discuss the advantages of packet switching over circuit switching 7M
3. a) Explain error detection and correction mechanisms in Data Link Layer. 4M
b) Explain sliding window protocols. 10M
4. a) What is Ethernet? Illustrate Channel allocation using Multiple Access Protocols 7M
b) Discuss Collision Free Protocols 7M
5. a) Illustrate any two Network Layer Routing Protocols 10M
b) Explain Multicast Routing and Broadcast Routing. 4M
6. a) What is Internet? Explain significance ip address in internet working? 7M
b) Briefly explain about mobile IP and IPV4. 7M
7. a) What is Data Unit in Transport Layer? What are the services provided by Transport Layer? 7M
b) What are the advantages of TCP over UDP considering IP in Network Layer? 7M
8. a) What is Domain Name System? What is WWW? 10M
b) Explain any two application layer protocols. 4M

Code : 1G355

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Microprocessors and Interfacing
(Common to CSE & IT)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Explain the register organization of 8086 in detail. 7M
b) What is mean by pipelined architecture? How it is implemented in 8086. 7M
2. a) Write an ALP to display the message "The study of microprocessors is interesting" on the CRT screen of a microcomputer. 8M
b) Explain all ASCII instructions of 8086 in detail. 6M
3. a) Interface D/A converter to the 8086 microprocessor. Write an ALP to generate the following signals.
(i) Sinusoidal wave (ii) Triangular wave 8M
b) Explain the operating modes of 8255 in detail. 6M
4. a) Explain different types of Address decoders in detail. 6M
b) Draw and discuss the architecture of 8257. 8M
5. a) Draw and discuss the structure of interrupt vector table of 8086. 6M
b) Draw and discuss the internal architecture of 8253. 8M
6. a) Write a short note on USB. 4M
b) Design the hardware interface circuit for interfacing 8251 with 8086. Set the 8251 in asynchronous mode as a transmitter with even parity enabled, 2 stop bits, 8-bit character length, frequency 160 KHz and baud rate 10K. Write an ALP to transmit 100 bytes of data string starting at location 2000:5000, also draw the interfacing diagram. 10M
7. a) Draw and discuss the internal architecture of 80286. 10M
b) Explain the features of Pentium processor. 4M
8. a) Write an ALP in 8051 to initialize the accumulator with value 55H and complement the accumulator 800 times. 6M
b) Explain memory organization of 8051 in detail. 8M

Code : 1G154

R-11

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Operating Systems
(Computer Science & Engineering)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) What is Batch operating system? 3M
b) What is multiprogramming? What are advantages of it? 4M
c) How Time sharing improves response time? 3M
d) What is Distributed system? How it is different from computer Network? 4M
2. Explain three different CPU scheduling algorithms evaluation methods? 14M
3. a) Write a detailed note on semaphores and binary semaphores? 7M
b) Explain Hardware solutions for critical section problem? 7M
4. a) What is a deadlock? What are the necessary conditions for the deadlock to occur? 7M
b) Explain the use of resource allocation graph in detecting deadlocks? Give Examples? 7M
5. a) Describe the parameters to be considered for evaluating a memory-management strategy. 7M
b) Describe how the performance of a computer system be affected by demand paging. 7M
6. a) Explain the functions of a file function of a file management system with a diagram? 7M
b) Describe various file allocation methods? 7M
7. Write a short notes on
a) Disk Reliability 7M
b) Disk scheduling 7M
8. a) What are the security requirements of a computer and network? 7M
b) Explain different type of threats? 7M

Code : 1G155

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Principles of Programming Languages*(Computer Science & Engineering)***Max. Marks: 70****Time: 03 Hours**Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. How knowledge of programming language characteristics can benefit the whole computing Community? 14M
2. a) Write about BNF with suitable example. 7M
b) Explain de notational semantics and axiomatic semantics. 7M
3. a) Discuss the design issues for pointer types? 7M
b) Define the terms: coercion, type error, strong typing? 7M
4. a) Explain about mixed mode assignment? 7M
b) Every counting loop can be built with a logical loop, but the reverse is not true." Substantiate this statement? 7M
5. What is meant by generic sub program? Explain the support provided by programming languages for generic subprograms. 14M
6. a) Discuss the Object oriented programming features supported in small talk? 7M
b) What is meant by subprogram level concurrency? Explain? 7M
7. What is an exception? Explain exception propagation and handling in C++. 14M
8. a) Write about functions in ML and Haskell. 7M
b) Discuss the data types supported in Python. 7M
