Code : 1G151

R-11/R-13

III B.Tech. I Semester Supplementary Examinations May/June 2016

Compiler Design

(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) Define a pre-processor.   7M

   b) Briefly describe about the phases of a compiler   7M

2. a) Briefly explain the logical phases of a compiler model   7M

   b) Compare compiler and an interpreter with the help of suitable examples   7M

3. a) Consider the following grammar and test whether the grammar is LL(1) or not.

      i. $S \rightarrow 1AB$ / ε, $A \rightarrow$ 1AC /0C

      ii. $B \rightarrow OS$, $C \rightarrow 1$ 7M

   b) Write short notes on following.

      (i) back tracking parser (ii) operator precedence parser.   7M

4. Construct CLR parsing table for the following grammar

         $S \rightarrow AaAb$,

         $S \rightarrow BbBa$,

         $A \rightarrow \varepsilon$,

         $B \rightarrow \varepsilon$ 14M

5. a) Write short notes on various intermediate code forms.   7M

   b) Write short notes on the following

      (i) S-attributed definition (ii) L-attributed definition.   7M

6. a) Define symbol table?   2M

   b) What is data structure used to implement a symbol table in an efficient way?
      Give reasons?   12M

7. a) What is a flow graph? Explain with example   2M

   b) Explain about Data-Flow analysis of structured flow graphs.   12M

8. a) Explain briefly about object code forms.   2M

   b) Write and explain an algorithm for building a DAG from a basic Block   12M

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Code : 1G152

R-11/R-13

III B.Tech. I Semester Supplementary Examinations May/June 2016
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 the working principle of Raster scan display system?

    b) Discuss in detail about Raster Graphics features?

2   a) Explain in detail about Bresenham's Line drawing algorithm?

    b) Explain in detail about Flood-fill algorithm?

3. a) Discuss in detail about 2-D transformations with examples?

    b) Derive the transformation matrix for Reflection?

4   Explain Sutherland-Hodgeman polygon clipping algorithm with examples?

5   Define parametric cubic curves and explain them with examples?

6. a) Explain the process of window to viewport coordinate Transformation?

    b) Define Projection? Derive the transformation matrix for parallel projection?

7. a) Explain the Octree method for visible surface detection?

    b) Explain in detail about Depth-sort algorithm?

8. a) Discuss in detail about Design of Computer animation?

    b) Write a short note on Computer animation language?

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Code : 1G153

R-11/R-13

III B.Tech. I Semester Supplementary Examinations May/June 2016
Computer Networks
(Common to CSE & IT)

Max. Marks: 70   **Time: 03 Hours**

Answer *any five* questions
All Questions carry equal marks (14 Marks each)
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1. a) What is a network? Explain the differences between Local Area Networks and Wide Area Networks with suitable diagrams.   7M

   b) Explain the layers in OSI model. Mention the necessity of using layer concept in OSI model.   7M

2. a) Compare circuit-switching and packet-switching networks.   7M

   b) Define Guided media and unguided media with one example each.   7M

3. a) Explain the services provided by Data link layer to network layer.   6M

   b) Explain three types of frame structure in data link protocol HDLC.   8M

4. a) Explain CSMA persistent and non persistent mechanism. Mention various types of persistent methods used in CSMA.   7M

   b) Explain the 802.11 Frame Structure.   7M

5. a) Explain distance vector routing algorithm.   7M

   b) What is flooding? Why flooding technique is not commonly used for routing? 7M

6. a) Compare IPv4 and IPv6 protocol   6M

   b) Discuss IP addressing methods. Mention the type of address for the following IP address i) 126.33.44.56 ii) 251.252.253.259   8M

7. a) Explain TCP and UDP with diagram.   8M

   b) Explain one of the Elements of Transport Protocols.   6M

8. a) Write short note on Electronic Mail.   8M

   b) What are the advantages of DNS?   6M

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Code : 1G154

III B.Tech. I Semester Supplementary Examinations May/June 2016
Operating Systems
(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. Explain the following
   a) Batch systems   5M
   b) System components   5M
   c) Time sharing systems   4M

2. What are scheduling algorithms? Explain with example   14M

3. Explain the following
   a) Synchronization   5M
   b) Critical regions   5M
   c) Monitors   4M

4. a) What is RAG? Explain with example   7M
   b) Explain safety algorithm   7M

5. What is segmentation? Explain virtual memory using segmentation   14M

6. What is file system? Explain file allocation methods   14M

7. What is disk scheduling? Explain disk scheduling algorithms   14M

8. Explain the following
   a) Security   3M
   b) Program threats   3M
   c) System threats   3M
   d) Encryption techniques   5M

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III B.Tech. I Semester Supplementary Examinations May/June 2016
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)
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1.	a) Explain about Programming Domains.	7M
	b) Explain about Functional Programming.	7M
2.	Describe the approach of using axiomatic semantics to prove the correctness of a given program.	14M
3.	a) Explain about the following	
	i) Scope and lifetime of a variable	
	ii) Reference Type	7M
	b) Explain about Enumeration Types.	7M
4.	a) Discuss in detail about short circuit evaluation.	7M
	b) Explain about unconditional statements with suitable examples.	7M
5.	Explain in detail about various parameter passing methods.	14M
6.	a) Explain about user defined abstract data types.	7M
	b) Write short notes on the following	
	i) Semaphores	
	ii) Java Threads	7M
7.	a) What is exception? Explain basic concepts of exception handling.	7M
	b) Explain exception handling in JAVA.	7M
8.	a) Explain about Haskell.	7M
	b) Explain about LISP.	7M

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III B.Tech. I Semester Supplementary Examinations May/June 2016
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)

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1. a) With a neat pin diagram explain the minimum mode operation of 8086   7M

   b) Describe the flag resister of 8086.   7M

2. a) With examples explain about the addressing modes of 8086 microprocessor.   9M

   b) Write an ALP in 8086 to find largest of a set of 8bit numbers.   5M

3. a) Explain the need for actuators, A/D and D/A converters in microprocessor based systems.   9M

   b) Write in detail about stepper motor and actuators and their interface with 8086.   5M

4. a) What are the registers available in 8257? What are their functions?   8M

   b) Discuss about Static RAM & EPROM with reference to 8086   6M

5. a) Explain the programming sequence of PIC along with flow chart explain each command word in detail.   8M

   b) Discuss in detail about the Interrupt structure of 8086.   6M

6. a) Define mode word register of 8251 for asynchronous mode.   7M

   b) Give the signal voltage ranges a logic high and for a logic low in the RS-232C standard.   7M

7. a) Describe the salient features of Pentium and Pentium Pro processors.   7M

   b) Explain the real and protected mode segmentation and paging   7M

8. a) Draw a block diagram of 8051 and explain the functions performed by each block.   9M

   b) Write an assembly language program in 8051 to find the GCD of two numbers.   5M

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