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R-14

Code: 4G153

III B.Tech. I Semester Supplementary Examinations May 2018

Compiler Design

(Computer Science & Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Explain the bootstrapping process. What is the advantage of using this process? 7M
b) Consider the following fragment of C code: float i, j; i=i*70+j+2;
Write the output at all phases of the compiler for the above C code 7M

OR

2. a) What is the difference between a pass and phase of a compiler 7M
b) Write a LEX program for identifying the key words and identifiers from the file 7M

UNIT-II

3. a) What is top-down parsing? Explain with an example. 7M
b) What is backtracking? What is the need of backtracking? 7M

OR

4. Construct predictive parsing table for the grammar
 $E \rightarrow E + T, T \rightarrow TF / F, F \rightarrow F * / a / b$ 14M

UNIT-III

5. a) Distinguish operator precedence and simple precedence parser 7M
b) Write note on the specification of YACC 7M

OR

6. a) Differentiate between L-attributed and S-attributed grammars 7M
b) Explain how an L-attribute grammar can be converted into a translation scheme 7M

UNIT-IV

7. a) What is meant by intermediate code generation? Give the benefits of intermediate code generation 7M
b) Explain about activation record 7M

OR

8. a) Explain various methods of three-address code 7M
b) Discuss various symbol table organization techniques 7M

UNIT-V

9. a) Explain DAG and its use. Write the procedure to construct the DAG for statement 7M
b) Explain machine dependent code optimization 7M

OR

10. a) Explain reducible and non-reducible flow graphs with an example 7M
b) Explain the concept of object code forms 7M

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R-14

Code: 4G151

III B.Tech. I Semester Supplementary Examinations May 2018

Computer Networks

(Common to CSE & IT)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Explain the characteristics of WAN? Why a WAN is required and what objectives are achieved by having a WAN 8M
- b) Distinguish between Wired and Wireless LANs. 6M

OR

2. a) Compare and contrast TCP/IP and OSI reference models. 7M
- b) Compare and contrast Guided Transmission and Wireless Transmission. 7M

UNIT-II

3. a) Discuss the sliding window protocol in detail. 7M
- b) With an example, illustrate how CRC encoder and decoder will work. 7M

OR

4. a) Explain the working of Carrier Sense Multiple Access protocol. 9M
- b) What kinds of errors can and cannot Vertical Redundancy Check determine 5M

UNIT-III

5. Illustrate the Distance Vector Routing algorithm with a suitable example. What is the serious drawback of Distance Vector Routing algorithm? 14M

OR

6. a) How Random Early Algorithm handles the Congestion problem. 7M
- b) Categorize QoS based on type of network application and what is the impact of QoS on Traffic Shaping. 7M

UNIT-IV

7. a) What are the services provided by the transport layer? Explain various the methods to improve QoS. 7M
- b) Explain TCP protocol's connection establishment and release. 7M

OR

8. a) Why does UDP exists? How it identifies the destination entities. Justify 7M
- b) What is the role of Bundle Protocol in Transport Layer. Explain with its message format 7M

UNIT-V

9. a) Explain the BitTorrent Protocol used in Application Layer. 7M
- b) Explain the JPEG compression Technique with neat diagrams. 7M

OR

10. a) Compare and contrast H.323 and SIP protocols 7M
- b) Explain the H.323 architectural model for Internet telephony. 7M

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R-14

Code: 4G152

III B.Tech. I Semester Supplementary Examinations May 2018

Operating Systems

(Common to CSE & IT)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Illustrate operating systems structure and generation. 5M
- b) Classify different System Programs. 4M
- c) Implement IPC through message queues. 5M

OR

2. a) Describe process state diagram and associated queues with a neat diagram 7M
- b) Distinguish long term, short term and medium term schedulers. 7M

UNIT-II

3. a) Describe thread issues and thread scheduling. 7M
- b) What is critical section problem? Explain its requirements. 7M

OR

4. a) Design an algorithm for solving 2-process critical section problem. 7M
- b) Summarize atomic transactions. 7M

UNIT-III

5. a) What is safe state? Describe how a safe state ensures deadlock avoidance. 7M
- b) Explain paging memory management technique with example. Mention merits and demerits. 7M

OR

6. a) Explore the mechanism of demand paging? 7M
- b) Explain page replacement algorithms with an example. 7M

UNIT-IV

7. a) Write short notes on various Directory structures and their merits, demerits. 7M
- b) Explain layered file system structure 7M

OR

8. a) Summarize tertiary storage structure 7M
- b) What is RAID? Explain various RAID levels. 7M

UNIT-V

9. Explain how I/O requests are transformed to hardware operations 14M

OR

10. a) What are the goals and principles of protection, 7M
- b) Briefly write about program threats and system threats. 7M
