

TE-Sem-VI - Old - computers

26/5/17

Q. P. Code : 580805

(3 Hours)

[Total Marks : 100]

- N.B.:(1) Question No. 1 is compulsory.  
 (2) Attempt any **FOUR** questions from remaining questions.  
 (3) Assume suitable data if necessary.

1. Solve any **Four** from the following: 20
  - (a) What is ambiguous grammar? Give suitable example.
  - (b) How forward reference is handled by one pass and two pass assembler?
  - (c) Explain macro definition with an example.
  - (d) Discuss the phases of compiler with an example.
  - (e) Explain the functions of loader.
2. (a) Explain with suitable databases, how macro call is processed by two pass macro processor. 10  
 (b) Construct an NFA for the language with all strings starting with 0 and ending with 01. Convert this NFA into its equivalent DFA. 10
3. (a) Explain with example, syntax directed translation. 10  
 (b) Explain the various forms of intermediate code used by compiler. 10
4. (a) Construct the LL(1) parsing table for the following grammar:- 10

$$E \rightarrow T X$$

$$T \rightarrow ( E ) \mid \text{int } Y$$

$$X \rightarrow + E \mid \epsilon$$

$$Y \rightarrow * T \mid \epsilon$$
 (b) Explain the two pass assembler with respect to flowchart and data structures. 10
5. (a) Explain different storage allocation strategies. 10  
 (b) Define code optimization? Explain block optimization techniques with example. 10
6. (a) Explain activation record with the help of diagram. 10  
 (b) Explain the working of Direct Linking Loader in detail. 10
7. Write short notes on (**Any Two**): 20
  - (a) Recursive-descent parser
  - (b) Macro assembler
  - (c) LEX and YACC
  - (d) Role of finite automata in compiler theory

**Q.P. Code :13441**

(3 Hours)

Total Marks: 100

N.B. : (1) Question No. 1 is compulsory  
(2) Attempt any four questions out of remaining six.

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|---|-----|---|------|
| 1 | (a) | Model the functioning of Tours and Travels system.  | [20] |
|   |     | Draw Use-case diagram with all considerations/ assumptions. Show at least one-one cases of Include-Extend dependencies          | [08] |
|   |     | Write two USE case Descriptions for any two use-cases drawn.  | [04] |
|   |     | Derive Class Diagram from the use-case diagram.   | [08] |
|   | (b) | Model E-commerce System using Activity Diagram  | [10] |
| 2 | (a) | What is software quality? What are the quality attributes   | [10] |
|   | (b) | Explain the agile process of software development life cycle  | [10] |
| 3 | (a) | Explain functional and non-functional requirements  | [10] |
|   | (b) | Model using state diagram for the movement of gear in the automatic transmission system of the vehicle                          | [10] |
| 4 | (a) | Model ATM scenario using sequence diagram.  | [10] |
|   | (b) | Explain Version Control and software release.   | [10] |
| 5 | (a) | Explain DFD and functional modeling using UML   | [10] |
|   | (b) | Explain LOC and COCOMO and their relationship.  | [10] |
| 6 | (a) | What are the different types of cohesion and coupling? Explain with examples.   | [10] |
|   | (b) | Explain how to map different types of associations to database. and mapping of generalization to database with suitable example | [10] |
| 7 |     | Write short notes on any <b>two</b>   | [20] |
|   | (a) | Requirement elicitation techniques  |      |
|   | (b) | Project Planning  |      |
|   | (c) | CMM levels  |      |

JE-sam-VI-012-comps  
-ADmicro

Q.P. Code :16322

Time 3 Hrs

Max. Marks 100

Note: 1) Question no. 1 is compulsory

2) Answer any four from Q.2 to Q.7

3) Draw diagram wherever necessary.

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|------|--|----|
| Q.1  | a) Draw EFLAG register format of 80386DX and explain.                            | 10 |
|      | b) Explain integer and floating point pipeline stages used in Pentium processor. | 10 |
| Q.2  | a) How flushing problem is minimised in Pentium processor.                       | 10 |
|      | b) Explain PCI workstation.  | 10 |
| Q.3  | a) Explain page translation mechanism in detail.                                 | 10 |
|      | b) Which are the different data types supported by SPARC.                        | 10 |
| Q.4  | a) Draw the block diagram of super SPARC processor and explain.                  | 10 |
|      | b) Explain pipeline hazards with examples.                                       | 10 |
| Q.5  | a) Draw block diagram of Itanium processor and explain its features.             | 10 |
|      | b) Discuss data cache organisation of Pentium processor.                         | 10 |
| Q.6  | a) Explain principles of designing of pipelined processor.                       | 10 |
|      | b) Compare RISC and CISC   | 10 |
| Q. 7 | Write note on.   | 20 |
|      | a) Super scaler and super pipeline   |    |
|      | b) Features of Pentium IV processor.   |    |
|      | c) USB   |    |
|      | d) Operating modes of 80386.   |    |

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