

TE (Computer) SEM VI

SPOC 1/12/2014

QP Code :15111

(3 Hours)

[Total Marks : 100

- N.B.** (1) Question No. 1 is **compulsary**.
(2) Attempt any **four** of remaining questions.
(3) Make suitable assumptions if **required**.
1. Solve any **four** of the following :—
 - (a) Explain different functions of loader in brief. 5
 - (b) Explain positional parameter in macro. 5
 - (c) Explain heap allocation. 5
 - (d) Explain role of finite automata in compiler. 5
 - (e) What are system software and application software ? 5
 2. (a) Explain code optimization in compiler designing with suitable example. 10
(b) Explain two pass macro with flowchart and databases. 10
 3. (a) Explain the working of direct linking loader with a proper example. Show the entries in different databases built by direct linking loader. 10
(b) Explain different error recovery techniques used by compiler. 10
 4. (a) Explain one pass assembler with flowchart and respective databases. 10
(b) Explain operator preceeding parsing with example. 10
 5. (a) Consider the following grammer with terminals (.,[,,) and]. 10
 $S \rightarrow TS \mid [S]S \mid)S \mid \epsilon$
 $T \rightarrow (X)$
 $X \rightarrow TX \mid [X]x \mid \epsilon$
 - (i) Construct first and follow set for the nontenninals.
 - (ii) Construct its LL(1) parsing table.
 - (iii) Is this LL(1) grammer ?
(b) Explain syntax directed translation. 5
(c) Explain three address code. 5
 6. (a) Consider the following grammer :— 10
 $S \rightarrow aSbS \mid bSaS \mid \epsilon$
 - (i) Frame the transition table and action / goto table of the given grammar.
 - (ii) Demonstrate if the grammer is LR(O) or not.
(b) Explain handle, first set and follow set. 5
(c) Explain role of lexical analyser. 5
 7. Solve any **four** of the following :—
 - (a) Explain DAG. 5
 - (b) Explain LEX and YACC. 5
 - (c) Explain the working and need of linkage editor. 5
 - (d) What is forward reference problem? How it is resolved in two pass assembler ? 5
 - (e) Explain activation record. 5

TE | CMPN | VI

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19 | 11 | 2014.

QP Code : 15022

(3 Hours)

[Total Marks : 100

- N.B :** (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions out of the remaining **six** questions.
(3) Assume **data if required**, and state clearly.

1. MSRTC owns a number of busses. Each bus is allocated to a particular route, although some routes may have several buses. Each route passes through a number of towns. One or more drivers are allocated to each stage of a route, which corresponds to a journey through some or all of the towns on a route. Some of the towns have a garage where busses are kept and each of the busses are identified by the registration number and can carry different numbers of passengers, since the vehicles vary in size and can be single or double-decked. Each route is identified by a route number and information is available on the average number of passengers carried per day for each route. Drivers have an employee number, name, address, and sometimes a telephone number. Develop Class and Use Case Diagram. 20
2. (a) Explain the following with suitable examples Composition, Association, Generalization, Aggregation. 10
(b) Compare Forward Engineering, Reverse Engineering and Re-Engineering. 10
3. (a) Develop an activity diagram for any one of the use cases of Airline reservation system. 10
(b) Explain COCOMO model used for software estimation. 10
4. (a) Explain how to map different types of association and generalization relationship to code. 10
(b) Explain the object oriented testing strategies. 10
5. (a) Explain coupling & cohesion. Explain different types of coupling and cohesion. 10
(b) What are the different types of maintenance and also explain steps for creating a maintenance log? 10
6. (a) What do you mean by requirements? Explain Functional and Non Functional Requirements in detail. 10
(b) Explain Open-Source Software Life Cycle. 10
7. Write short notes on any two :— 20
 - (a) Risk Management
 - (b) Software Architectural styles
 - (c) Design Pattern.

TE / COMPN / VI CREW 25/11/14
Adv. MP.

QP Code : 15065

(3 Hours)

[Total Marks : 100]

N.B.: (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions out of remaining **six** questions.

1. Solve any **four** :-

- | | |
|--|----|
| (a) Explain the integer pipeline stages for Pentium processor. | 5 |
| (b) What is parallelism ? Justify the need of parallelism by giving example. | 5 |
| (c) State the bus cycles of 80386 DX processor. | 5 |
| (d) Draw the flag register of 80386 DX processor and explain. | 5 |
| (e) What is micro architecture ? Explain by giving example. | |
| 2. (a) Explain the principles of designing pipelined processors. | 10 |
| (b) Explain the protection mechanism incorporated in 80386 DX processor. | 10 |
| 3. (a) Draw the architecture of Intel P5 processor and explain. | 10 |
| (b) Explain branch prediction mechanism for pentium processor. | 10 |
| 4. (a) Differentiate between pentium processor versions, Pentium; Pentium pro; Pentium P6. | 10 |
| (b) Draw the Sun-SPARC architecture and explain. | 10 |
| 5. (a) Discuss IA-64 architecture in detail. | 10 |
| (b) Explain the floating point pipeline stages. | 10 |
| 6. (a) Explain the addressing modes of 80386 DX processor in detail. | 10 |
| (b) Explain Systolic architecture in detail. | 10 |
| 7. Write short note on :- | |
| (a) PCI Bus | 5 |
| (b) Memory management | 5 |
| (c) Cache memory | 5 |
| (d) USB Bus. | 5 |
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LM-Con.:7777-14.

QP Code : 15153

(3 Hours)

[Total Marks : 100

- N.B.** (1) Solve any **five** questions **out of seven** questions.
(2) Question No. 1 is **compulsory**.
(3) **Assumptions** if any, must be **clearly** stated.

1. (a) What is subnetting. Explain with the help of suitable example using CIDR notations. 10
(b) Explain the following internetworking devices :— 10
 - (i) HUB
 - (ii) L2 Switch
 - (iii) Router
 - (iv) Gateway.
 2. (a) What is MPLS and how it gives guarantee of Q. O. S. 10
(b) Explain the SDH/SONET Architecture with the help of diagram. 10
 3. (a) Explain ATM Adaptation layers in detail. 10
(b) What is Intra domain and Inter domain routing. Explain any one routing protocol belonging to Intra domain routing. 10
 4. (a) Explain SNMP in detail. 10
(b) Explain various topologies for backbone N/W. 10
 5. (a) Explain X-25 N/W layer functions in detail. 10
(b) Explain all the TCP timers. 10
 6. (a) Compare IPV4 and IPV6, giving the details of class based addressing scheme of IPV4. 10
(b) Write a socket program for client server based communication. 10
20
 7. Write short notes on any **two** of the following :—
 - (a) DWDM
 - (b) DMZ
 - (c) X-75
 - (d) Frame Relay.
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TE (COMPTU) SEM VI (REV)

Data Warehouse &
mining 11/12/2014
(3Hours)

QP Code :15195

Total Marks : 100

- N. B. :** (1) Question No.1 is compulsory.
(2) Answer any **four** out of the remaining questions.
(3) Answer to **sub** questions must be **written** together.

1. (a) What are the different characteristics of a Data Warehouse? 5
(b) For a Supermarket Chain consider the following dimensions, namely 5
Product, store, time, promotion. The schema contains a central fact table,
sales facts with three measures unit_sales, dollars_sales and dollar_cost.
Design star schema for this application.
(c) Explain Web usage mining. 5
(d) Illustrate how the supermarket can use clustering methods to improve sales. 5

2. Define the following terms :- 20
(a) Dimension Tables
(b) Snowflake Schema
(c) Web Structure Mining
(d) Supervised learning

3. (a) Explain Hierarchical Clustering methods. 10
(b) Explain the Page Rank algorithm 10

4. (a) Describe the following OLAP operations using an example: 10
(1) Slice
(2) Dice
(3) Rollup
(4) Drill Down
(5) Pivot

- (b) Consider the following transaction database: 10

TID	Items
01	A,B,C,D
02	A,B,C,D,E,G
03	A,C,G,H,K
04	B,C,D,E,K
05	D,E,F,H,L
06	A,B,C,D,L
07	B,I,E,K,L
08	A,B,D,E,K
09	A,E,F,H,L
10	B,C,D,F

[TURN OVER

- Apply the Apriori algorithm with minimum support of 30% and minimum confidence of 70% and find all the association rule in the data set. 10
5. (a) Explain Classification Algorithms 10
(b) Explain the ETL (Exptract, Trausform Load) cycle. 10
6. (a) Define multidimensional and multilevel association mining. 10
(b) Explain the role of Meta data in a data warehouse. 10
7. (a) Write detailed notes on 20
(a) Data Warehouse Architecture
(b) K-Means Clustering
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