DEC - 2008

[3463] – 244

SYSTEM SOFTWARE

Branch : T.E. (Information Technology)

(2003 Course)

Time: 3 Hours Max. Marks: 100

Instructions: *1) Answer **any 3** questions from **each** Section.*

*2) Answers to the **two** Sections should be written in **separate** books.*

*3) Neat diagrams must be drawn **wherever** necessary.*

*4) Figures to the **right** indicate **full** marks.*

*5) Assume suitable data, if **necessary**.*

SECTION I

1. a) Define the following terms :

   i) Compiler ii) Debug Monitor

   iii) Language Processor iv) Linker **4**

   b) Explain the pass structure of a typical Language Processor. **8**

   c) Differentiate between line and screen editor. **4**

   OR

2. a) Explain the concept of cross compiler. **4**

   b) Explain the following language processor tools : **8**

   i) LEX

   ii) YACC

   c) Write the significance of debug monitor. **4**

3. a) Explain the term forward reference with a suitable example. **4**

   b) Enlist and explain various data structures required for design of a two pass assembler. **8**

   c) Briefly describe the advanced micro facilities. **4**

   OR

4. For the following assembly language code show the contents of symbol table, literal table and also generate intermediate and target code. [Assume suitable op-codes and instruction length and clearly indicate the assumptions made]

```
        START 1000
        READ N
        MOVER B, = "1"
        MOVEM B, TERM
AGAIN   MULT B, TERM
        MOVER C, TERM
        ADD C, = "1"
        MOVEM C, TERM
        COMP C, N
        BC LE, AGAIN
        MOVEM B, RESULT
        LTORG
        PRINT RESULT
        STOP
        N DS 1
        RESULT DS 20
        TERM DS 1
END
```

16

5. a) For the following sample C program, show various databases and tables used/ created by all the phases of compiler :

```
#include < stdio.h>
 void main ()
  {
     int i, j;
     float k = 10.25;
     printf ("k=%f ", k);
     scanf ("%d %d", &i, %j);
     i = j + k;
     printf ("i = 5d", i);
  }
```

10

b) Differentiate between shift reduce and recursive descent parser with example. **8**

OR

6. a) Explain the term bootstrapping of compiler. **4**

b) Parse the following statement using shift reduce parser

Grammer = (N, T, P, S)

N = {E}

T = {+, *, –, /, (,), id}

P = {E → E +E / E*E / E / E/ (E) / id}

S = {E}

String to be parsed = (id + id) * id **10**

c) Explain problem of left factoring in Top-Down Parser. **4**

SECTION – II

7. a) Differentiate between machine dependant and machine independent optimization techniques in compiler. **4**

b) Generate intermediate codes for the given assignment statement. (At least 3 forms) Cost = rate * (start-finish) + 2* (start-finish-100) **8**

c) Explain in brief the various back end activities of compiler. **4**

OR

8. a) For the statement given below generate intermediate code in the format

i) Quadraple ii) Triple

iii) Parse tree iv) Postfix Notation **8**

S = (A + B) / (C – D)

b) Discuss various issues involved in code generation phase of compiler. **8**

9. a) Enlist and explain basic tasks performed by loader. **4**

b) Draw a Flowchart for Pass-I of a two pass direct linking loader. **6**

c) With the help of an example, explain the concept of relocation. **6**

OR

10. a) Explain the significance of transfer vector. **4**

b) With the help of an example explain the concept of dynamic linking. **8**

c) Differentiate between absolute loader and relocating loader. **4**

11. a) Explain the use of Clipboard in Windows Programming. **8**

b) With the help of a suitable example explain the term OLE. **8**

c) What is the class library ? **2**

OR

12. Write short notes on : **18**

a) Dynamic linking with and without import.

b) Dynamic link library

c) Call back functions.

COMPUTER NETWORK TECHNOLOGY
(2003 Course)

Time : 3 Hours | Total Marks : 100

Instructions : *1) Attempt **any three** questions from Section **I** and **three** questions from Section **II**.*
*2) Answers to the both Sections should be written in **separate** answer sheets.*
*3) **Neat** diagrams must be drawn **wherever** necessary.*
*4) Figures to the **right** indicate **full** marks.*

SECTION – I

1. a) How packet switching makes the more use of bandwidth over circuit switching ? Explain with suitable example. **8**
   b) What is the need of load shading ? Explain the procedure for load shading. **8**

   OR

2. a) Why is the need of multicast routing ? How it can be implemented ? **8**
   b) Explain any two congestion prevention policies with suitable example. **8**

3. a) How will you differentiate a stream socket from a datagram socket ? How data transmissions happen in a datagram mode without acknowledgment ? **8**
   b) List and discuss the performance issues of the transport layer. **8**

   OR

4. a) What do you mean by flow control ? What are the different methods to achieve it ? **8**
   b) Give two functions of four different timers used in TCP. **8**

5. a) In SMTP, if we send a one line message between two users, how many lines of commands and responses are exchanged ? Give the example. **10**
   b) Explain how DNS service works. **8**

   OR

6. a) Why Common Gateway Interface (CGI) is required in dynamic web pages ? **10**
   b) Compare between FTP and TFTP. **8**

SECTION – II

7. a) What do you mean by the integrated services ? Explain with suitable example. **8**

   b) Give any two policing methods used in multimedia communications. **8**

OR

8. a) What is the essence of RSVP ? Why this protocol is needed ? **8**

   b) What is the need of RCTP protocol along with RTP protocol in multimedia communication ? **8**

9. a) Explain the MIB along with its structure. **8**

   b) Describe M/M/1 model of queuing theory. How it can be used in the network planning ? **8**

OR

10. a) How DHCP protocol assigns the addresses dynamically ? Explain stepwise procedure carried out by DHCP server and DHCP client. **8**

    b) Discuss the role of SMI in SNMP. Give the data types supported by SMI. **8**

11. Write short notes on : **18**

    a) Bluetooth

    b) SMDS

    c) Frame Relay.

OR

12. Write short notes on : **18**

    a) ISDN

    b) ATM Architecture

    c) X.25.

MANAGEMENT INFORMATION SYSTEMS
Branch : T.E. (I.T.)
(2003 Course)

Time : 3 Hours Max. Marks : 100

Instructions : *1) Answers to the **two** Sections should be written in **separate** sheet.*
*2) Use of logarithmic tables, Slide rules and electronic pocket calculator is **allowed**.*
*3) Neat diagram must be drawn **wherever** necessary.*
*4) Black figures to the **right** indicates **full** marks.*
*5) Assume suitable data, **if necessary**.*

SECTION – I

1. a) What is the need of information system in any organization ? Explain components of IS with suitable diagram. **9**

   b) MIS creates an impact on the organizational function, performance and productivity. Justify with suitable example. **9**

   OR

2. a) What is planning ? Explain planning function of a manager. Also explain various types of plans. **9**

   b) Briefly explain :

      i) Organization behaviour

      ii) Long - range strategic planning. **9**

3. a) Explain material management. What information systems are required for material management ? **8**

   b) Explain role and application of MIS in Airline industry. **8**

   OR

4. a) What is production system ? Explain the information systems supporting to detail working of the operation, allocation and planning of production management. **8**

   b) Explain role and application of MIS in Hotel Industry. **8**

5. a) Define ERP. Explain tangible and intangible benefits of ERP. **8**

   b) Explain hardware and software architecture. **8**

OR

6. a) Explain Business process outsourcing. Why many companies are moving towards BPO business ? Comment on challenges in BPO management. **8**

   b) With suitable diagram explain Enterprise Management System. **8**

SECTION – II

7. a) What is CRM ? List advantages and disadvantages of CRM. **10**

   b) What is organization change ? Explain why there is resistance from end users for adoption to change. **8**

OR

8. a) What is e-commerce ? Explain essential e-commerce processes. **10**

   b) Explain secure electronic payment processes. **8**

9. a) Describe the relationship between TPS, MIS, DSS and ESS. **8**

   b) Explain major activities of Geographic Information System. Also explain how GIS is used for DSS. **8**

OR

10. a) What is a data warehouse ? Write the usage of data warehouse in decision making process. **8**

    b) Explain the importance of knowledge management systems in an organization. Also comment on the advantages of knowledge management portals. **8**

11. a) Explain the distinction between computer crime versus computer abuse. Use examples to make your point. **8**

b) Describe several instances where the internet is raising ethical issues. Clearly state the ethical issue. **8**

OR

12. a) A growing organisation has been advised to write a corporate information systems security policy. What is the role of such a policy ? Sate four topics that should be covered in a security policy. **8**

b) Explain the following (**any two**) : **8**

i) Fault tolerant systems

ii) Contingency plan

iii) Auditing E-business systems.

[3463] – 247

HUMAN COMPUTER INTERFACE
Branch : T.E. (Information Technology)
(2003 Course)

Time: 3 Hours Max. Marks: 100

*Note : 1) Answer **any three** questions from **each** Section.*
*2) Answers to the **two** Sections should be written in **separate** books.*
*3) Neat diagrams must be drawn **wherever** necessary.*
*4) Figures to the **right** indicate **full** marks.*
*5) Assume suitable data, **if necessary**.*

SECTION – I

1. a) With the help of Norman's Model of interaction explain the process of execution evaluation cycle. What is meant by gulf of execution and gulf of evaluation with respect to this model ? 8

   b) What is meant by chunking ? How does it affect GUI design ? 8

   OR

1. a) How does the physical, cognitive and perceptual abilities affect interface design ? 8

   b) Compare life critical system against commercial computer systems with reference to goals of user interface design. 8

2. a) Explain eight golden rules of interface design with example. 8

   b) Explain GOMS and keystroke level model. 8

   OR

2. a) Express your opinion : "A design should be user - centric". 8

   b) Explain OAI model. 8

3. a) Explain three pillars of interface design. 9

   b) Explain participatory design with the help of example. 9

   OR

P.T.O.

Write short note on (**any three**) : **18**

a) Navigation design

b) LUCID

c) User centered design

d) Metaphors in GUI.

SECTION – II

4. a) Should menus be narrow and deep or broad and shallow. Why ? **8**

b) Describe different techniques of evaluating an user interface during its active use. **8**

OR

4. a) Explain different dialog design notations. **8**

b) Write a note on : **8**

i) Issues in designing multiple window interface

ii) Command organization strategies.

5. a) You are supposed to design an interface for your college web site. Discuss important design issues that need to be considered in designing a web page. **8**

b) Compare and contrast online help with offline help. **8**

OR

5. a) How CSCW can be applied to education ? **8**

b) Enumerate any four error messages encountered by you in GUI based interactive system. What guidelines can you suggest for presenting these error messages in an effective style ? **8**

6. Write a short note on (**any three**) : **18**

a) Information visualization

b) Different interactive devices

c) Organization design to support usability

d) Multimedia document searches.

SOFTWARE ENGINEERING
Branch : T.E. (Information Technology)
(2003 Course)

Time: 3 Hours Max. Marks: 100

Instructions : *1) Answers to the **two sections** should be written in **separate** book.*
*2) Black figures to the **right** indicate **full** marks.*
*3) From **Section I**, Answer (**Q. 1 or Q. 2**) and (**Q. 3 or Q. 4**) and (**Q. 5 or Q. 6**).*
*4) From **Section II**, Answer (**Q. 7 or Q. 8**) and (**Q. 9 or Q. 10**) and (**Q. 11 or Q. 12**).*
*5) Neat diagrams must be drawn **wherever** necessary.*

SECTION – I

1. A) What are the characteristics of Software ? What are the elements of Waterfall process Model ? What are the demerits of Waterfall Model ? **8**

   B) What is the purpose of CMMI ? List and explain Generic goals and practices for Project Planning process area. **9**

   OR

2. A) List and explain Practitioner's myths. What is the importance of documentation in successful solution development and maintenance ? **8**

   B) What are the elements of Prototyping process model ? What are the merits and demerits of Prototyping process model ? **9**

3. A) What is the importance of Communication Practices ? What are the principles of Communication Practices ? **8**

   B) What is importance of Testing Practices ? What are the principles of Testing Practices ? **9**

   OR

4. A) What is the importance of Modeling Practices ? What are the principles of Modeling Practices ? **8**

   B) What restraining factors an engineer should consider while constructing System Model ? What is the relationship between Domain View and Element View in System Hierarchy ? **9**

5. A) Why Requirement Elicitation is difficult ? What is meant by Requirement Negotiation ? Why Requirements need to stable and correct ? **8**

   B) What are Use Cases ? What is the relation between Requirements and Use Cases ? What questions should be answered while developing Use Cases ? **8**

OR

6. A) What is the purpose of Requirement Validation ? What are the elements of Requirement Management ? **8**

   B) What are the elements of Data Flow model ? What is Control Specification ? What is Process Specification ? **8**

SECTION – II

7. A) What are the guidelines for achieving Design Quality ? What is Abstraction ? What is the importance of Modularity ? **8**

   B) What is Design Pattern ? How Patterns can be used in Design ? What is meant by Frameworks ? **9**

OR

8. A) What is Information Hiding ? What is Stepwise Refinement ? What is Refactoring ? **8**

   B) Explain in detail following Architectural Styles : **9**

   a) Data-Centered Architecture

   b) Data-Flow Architecture

   c) Call and Return Architecture.

9. A) What factors should be considered when planning the structure of Software Engineering teams ? What are the organizational paradigms for Software Engineering Teams ? **8**

   B) What are the objectives of Measurement ? Explain in detail Object Oriented Metrics. **9**

OR

10. A) What is the difference between Problem Decomposition and Process Decomposition ? What is five-part common-sense approach to Software Projects ? **8**

    B) What is the importance Correctness and Integrity as Software Quality Indicators ? How baselines are established ? How metrics are evaluated ? **9**

11. A) What is the need for Software Configuration Management ? What are SCM features ? **8**

    B) What is Software Reengineering ? Explain in detail Software Reengineering Process Model. **8**

OR

12. A) What is Configuration Audit ? What is Status Reporting ? **8**

    B) What is Software Restructuring ? What is Code and Data Restructuring ? **8**
