

3/12/86

Exam. Code : 206703

Subject Code : 3679

M.Sc. Computer Science 3rd Semester

SYSTEM SOFTWARE

Paper : MCS-302

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt any **five** questions in all. All questions carry equal marks.

1. (a) What is Software ? When it is called system software ? Explain the components of system software in detail. 2+2+6
(b) Write notes on Translators and Interpreters. 5+5
2. (a) Define assembler. How assembler process is carried-out ? Explain with example. 2+8
(b) Explain the working of two pass assembler. 10
3. (a) What are macro parameters ? How are they defined and implemented ? Explain the concatenation operation of parameters with example. 2+2+6
(b) Why macro expansion is required ? How conditional and recursive macro expansion is carried out ? 2+4+4

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4. (a) How logical analysis and Parsing is done by Compilers ? Explain. 5+5
- (b) Why storage management and optimization is important for compilation ? Explain. 10
5. (a) Write the salient features of Linkage editors in detail. 10
- (b) Define loader. Explain its basic functions with their importance. 10
6. (a) Draw comparison between program linking and dynamic linking. 10
- (b) What is the significance of bootstrap leader ? Explain its working in detail. 10
7. (a) Write the importance and working of Interactive debugging systems. 10
- (b) Write a note on DBMS. 10
8. Write detailed notes on :
 - (a) Cross and P-Code compilers.
 - (b) Text editors. 10×2

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Exam. Code : 206703

Subject Code : 3680

M.Sc. Computer Science 3rd Semester

DATA MINING AND WAREHOUSING

Paper : MCS-303

Time Allowed—3 Hours]

[Maximum Marks—100

Note :— Attempt any **five** questions. All questions carry equal marks.

1. (a) Explain structure of the data warehouse. Discuss in detail all the steps involved in making a data warehouse. 10
- (b) It is always said that the data warehouse should be built separate. Justify. 10
2. (a) Explain OLTP and OLAP and also discuss differences between them. 10
- (b) Draw and explain 4-dimensional data cube with an example. 10
3. (a) Discuss various problems with Data Warehousing. Map the Data Warehouse to multiprocessor architecture. 10
- (b) Explain cluster analysis. 10

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4. Explain MOLAP and ROLAP. Explain the following OLAP operations in the multidimensional data model with the diagram and an example :
 - (i) Dice for
 - (ii) Slice for
 - (iii) Drill down
 - (iv) Roll up
 - (v) Pivot. 20
5. (a) Is it necessary that every small or big company should have a data warehouse ? Justify your answer. 10
- (b) Explain the three-tier data warehouse architecture. 10
6. (a) Explain various steps involved in Data Mining Process. 10
- (b) Discuss major classifications of Data Mining Systems. 10
7. Discuss in detail the application of Data Mining for Financial Data Analysis. Give suitable data flow diagram. 20
8. (a) Write short notes on :
 - (i) Predictive Modelling.
 - (ii) Database Segmentation. $2 \times 5 = 10$
- (b) Discuss any two applications of Data Mining. 10

Exam. Code : 206703

Subject Code : 3681

M.Sc. Computer Science 3rd Semester

CONCEPT OF CORE AND ADVANCED JAVA

Paper : MCS-304

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt any **five** questions. All questions carry equal marks.

1. What are Java Beans ? Explain Bean writing process. Discuss how to build an application with beans.
2. Explain Inheritance and Exception handling in Java with suitable examples.
3. Describe applet architecture. Write Applet program to handle mouse events.
4. What are the different Control statements in JAVA ? Explain with suitable examples.
5. Describe the Life Cycle of Thread. Explain with an example how Java performs Thread Synchronization.
6. What is polymorphism in Java ? How will you implement polymorphism with suitable example ? Also write the use of interfaces.

7. What is difference between multithreading and multitasking ? Explain life cycle of a thread in Java.
8. Write short notes on :
 - (a) Parameter Passing
 - (b) Object Oriented Programming
 - (c) Java Virtual Machine
 - (d) Telnet in Java.

Exam. Code : 206703

Subject Code : 3682

M.Sc. Computer Science 3rd Semester

NETWORKING PROGRAMMING

Paper : MCS-305

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt five questions in all. All questions carry equal marks.

1. Draw and explain Internet socket address structure in respect to UNIX Network Operating System. 20
2. Discuss following concepts :
 - (a) Protocol independence and its programming. 10
 - (b) Super servers, their functions and implementation. 10
3. (a) Discuss the process of TCP connection establishment and termination.
(b) Overview of OSI model. 20
4. Discuss following :
 - (a) TCP port numbers and corresponding services. 10
 - (b) Wrapper functions and error handling. 10

5. Discuss the concept of concurrent servers and need/role of signal handling in concurrent service provisions. 20
6. Discuss following topics :
 - (a) TCP socket system calls and their functions. 10
 - (b) Protocol usage by common Internet applications. 10
7. What do you understand by following :
 - (a) TCP client-server communication. 10
 - (b) Socket options ? 10
8. (a) Describe interoperability of IPv4 and IPv6. 10
(b) Write and explain basic name and addressing conventions in socket/network programming. 10