

Roll No

2401

M. Sc. (Computer Sc.)/MCA 3rd Semester
Examination January, 2008

B. D. B. M. S.

Paper : MSC-11/MCA-11

Time : Three hours] [Maximum Marks : 75

Before answering the question, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

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

1. (a) What is DBMS ? What are main facilities that every DBMS should provide ? Explain. 6
- (b) Explain the three-scheme architecture of a DBMS. Why do we need mappings between different scheme levels ? Discuss. 9
2. (a) Define term E-R-diagram. Explain the various types of relationship in a E-R-diagram. Draw an E-R diagram for taking your own problem. 9

2401-3150-(P-3)(Q-8)(08)

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- (b) Explain the following operations of relational algebra with examples : 6
Selection, Projection, Join.
3. (a) What is Query Processing ? Discuss the basic algorithms for executing query processing operations with examples. 8
(b) Discuss the various query optimization techniques using heuristics with examples. 7
4. (a) What is Normalization ? Explain successive normalization in designing a relational database by taking a suitable example. 10
(b) What is the difference between DBMS and DDBMS ? Also discuss the advantages and disadvantages of DDBMS. 5
5. What do you understand by concurrency in database ? Discuss the various concurrency control methods in databases with the help of examples. 15
6. (a) Explain the replication and allocation techniques in query processing in distributed databases with examples. 8
(b) What do you mean by Data Fragmentation ? Discuss the database model involving fragments & also illustrate few queries involving fragments. 7
7. (a) Explain, how the performance of the database is affected by the following : 8
(i) Data migration,
(ii) Tuning of database.

(b) What is SQL ? Discuss basic structure of an SQL expression with the help of examples. Also explain the purpose and use of SQL in RDBMS. 7

8. Write short notes on the following: 15

- (a) Database security in RDBMS,
- (b) Client-Server Architecture,
- (c) Full/Partial/Transitive dependencies,
- (d) DDL & DML.

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2402

M. Sc. (Computer Sc.)/MCA 3rd Semester
Examination January, 2008

SOFTWARE ENGINEERING

Paper : MSC-12/MCA-12

Time : Three hours] [Maximum Marks : 75

Before answering the question, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

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

1. (a) What is the aim of Software Engineering ? Discuss it and also explain the discipline of it in brief.
(b) Find the Mc Cabe's cyclometric complexity in a program written in 'C' for finding the roots of a quadratic equation.
2. (a) What is software development life cycle ? Explain the various phases in it and also discuss their purposes.

2402336(P-3)(Q-8)(08)

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- (b) Discuss in detail the role and importance of management in software development.
3. (a) Explain the constructive cost model (COCOMO) used for determining the cost estimate.
(b) Write a short note on project scheduling.
4. (a) What do you know about effective modular design? Discuss coupling and cohesion in detail.
(b) What is Structured Programming and why it is important? Discuss it.
5. (a) Do we design software when we write a program? What makes software design different from coding?
(b) Write a note on Programming Pranalices.
6. (a) Discuss the necessities of testing and also explain in brief the various methods used for it.
(b) Discuss the various test plan activities during testing.
7. (a) Name the various reliability models and also discuss their limitations in brief.
(b) What are the necessary and sufficient conditions that a fault will cause a failure? Discuss it with suitable examples.

8. Write short notes on the following :

- (i) Halsted theory,
- (ii) Unit testing,
- (iii) Musa Markov Model.

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2405

M. Sc. (Computer Sc.)/MCA 3rd Semester

Examination January, 2008

INTERNET, WEB PROGRAMMING & JAVA

Paper : MSC/MCA-14

Time : Three hours]

[Maximum Marks : 75

Before answering the question, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

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

(a) Discuss e-mail architecture in brief and also explain its main components and uses.

(b) What do you mean by search engines ? Discuss the technology used in it.

2. (a) What is the difference between home page and effective home page ? Discuss the salient features of effective home page.

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- (b) Explain in brief the various web-publishing technologies.
3. (a) Discuss the various formats available for alternative home page design.
(b) What are the different techniques for searching from Web? Explain them.
4. (a) Describe the structure of a typical Java program.
(b) Describe the syntax of single inheritance in Java.
5. (a) Compare and contrast overloading and overriding methods.
(b) Discuss the importance, utilities and features of Java.
- (a) What is an Applet class? How is it used to create an applet? Explain it.
(b) Discuss the life cycle of an applet.
7. (a) What is CORBA? Discuss its main component.
(b) Discuss the architecture of RMI.
8. Write short notes on the following :
(i) Java Beans,
(ii) CGI Programming.