Sr. No. 3061

Exam.Code:105704
Subject Code : 1586

B.Sc. Information Technology - 4th Sem.

(2518)

Paper: I

Database Management System

Time allowed: 3 hrs. **Max. Marks: 75**

Note: Attempt any five questions. All questions carry equal marks. The students can use only non-programmable and non-storage type calculator.

Q1.	What do you mean by DBMS? What are various components of DBMS? Discuss in detail.	15
Q2.	Elaborate the three-level architecture of database system? Why we need mappings between the levels? Briefly discuss the components of a DBMS.	15
Q3	Discuss in detail the entity relationship model with the help of suitable examples.	15
Q4.	What is Normalization? Why we need to normalize databases? What are its advantages? Explain giving examples.	15
Q5.	What are the problems arising out of concurrent data access? How concurrency is managed?	15
Q6.	What are various DDL commands available in SQL? Explain any 5 commands in detail with their purpose and syntax.	15
Q7.	What are Cursors? Differentiate between implicit and explicit cursors. Give examples of Implicit and explicit Cursors.	15
Q8	What does trigger mean? What are its uses and explain its working? Compare database triggers and procedures.	15

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B.Sc. (Information Technology) 4th Semester

INTERNET APPLICATIONS

Paper—II

Time Allowed—Three Hours] [Maximum Marks—75

Note :— (1) Attempt any **FIVE** questions. All questions carry equal marks.

(2) Students can use Non-programmable and Non-storage type calculator.

1. What is Internet ? Write briefly on evolution of Internet. Discuss the various services provided on the Internet for business use. 15

2. Explain the following in context of E-mail :
   (i) Advantages and disadvantages of E-mail
   (ii) Structure of an E-mail message
   (iii) Managing E-mails. 15

3. (a) What is the purpose of using Outlook Express ? How implementation of Outlook Express takes place ?
   (b) Explain the following : ISP, DNS, IP Address. 9,6

4. What is a protocol ? Discuss briefly the following : TCP/IP, Gopher, HTTP, Telnet. 15

5. (a) What is a browser ? Discuss its main features.
   (b) Write briefly the working of WWW. 8,7

6. (a) What is the difference between HTML and DHTML ?
   (b) Discuss any 10 different types of tags used for web designing. 5,10

7. Discuss various components of a search engine. Also explain working of a search engine. 15

8. Define : Intranet. Explain various applications of Intranet. Explain its working. How does it differ from Extranet ? 15

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B.Sc. (Information Technology) 4th Semester
JAVA & WEB DESIGNING
Paper—III

Time Allowed—Three Hours] [Maximum Marks—75

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

1. What is a thread in Java ? Describe the Java thread model and properties of a thread. How do you create, extend, suspend, resume and stop a thread ? What was a major reason for giving Java the ability to support multiple threads ?
2. Explain various operators available in Java.
3. Explain the meaning and use of access qualifiers in Java. Give the code segments of each.
4. Write a code using try and catch block, in which each iteration of the for loop obtains two random integers. These two integers are divided by each other, and the result obtained is used to divide any integer value. The final result is put into variable a. If either division operation causes a divide by zero error, it is caught by the catch block. The value of variable a is set to zero and the program continues.

5. Explain various Data types available in Java.

6. Explain the following :

   (a) Super keyword

   (b) Final class

   (c) Abstract class

   (d) Wrapper classes.

7. Define inheritance. Give an example explaining the concept of multilevel inheritance.

8. Explain various features of Java.

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Subject Code : 1590

B.Sc. (Information Technology) 4th Semester

WEB TECHNOLOGIES

Paper—V

Time Allowed—3 Hours] [Maximum Marks—75

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

1. What do you mean by CSS ? Explain the working of Style Sheets. Describe with example to set the page margin, setting white spaces above and below in context of CSS.

2. What is a Web Browser ? What are the functions of a web browser ? Discuss the architecture and working principles of web browsers.

3. Describe the various objects of JSP. What is the scope of those objects ?

4. What is Ajax ? Why do we use Ajax ? How Ajax works ? What are the benefits of using Ajax in a website ?

5. What is a Cookie ? Explain the anatomy of a Cookie. Explain the setcookie( ) function along with all its arguments.

6. Write a PHP script to accept user name and password from user. Create a function check( ) if user name and password is present or not and also assign default value to user as superuser and return those values.

7. Explain in detail the file handling operations in PHP. Also discuss how files are uploaded and downloaded in PHP.

8. Write short notes on the following :

   (a) DOM

   (b) JDBC

   (c) MySQL.

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Subject Code : 9135

B.Sc. (Information Technology) 4th Semester

(Old Syllabus 2017)

COMPILER DESIGN

Paper—V

Time Allowed—Three Hours] [Maximum Marks—75

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

1. What are the main functions of various phases of a typical compiler ? Discuss the factors to be considered in deciding the structure of a compiler.
2. What is the relationship between Lexical Analyzer and Parser ? Explain the role of Lexical Analyzer in detail.
3. Elaborate in detail the different storage management strategies.
4. What is the use of symbol table ? What should be the contents of a symbol table ? Discuss the various operations on symbol tables.
5. Write down the translation scheme to generate code for assignment statement. Use the scheme for generating three address code for the assignment statement g : = a + b – c * d.

6. What are different types of compilers ? Discuss the features of cross-compilers in detail.

7. Explain following code optimization techniques with example :
   (a) Code movement
   (b) Strength reduction
   (c) Dead code elimination.

8. Write short notes on the following :
   (a) Register Descriptor
   (b) Loop optimization
   (c) Preprocessor.