2 SEM TDC GECS (CBCS) 2 (A/B/C)

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(May)

COMPUTER SCIENCE

(Generic Elective)

Paper : GE–2

Full Marks : 53
Pass Marks : 21

Time : 3 hours

The figures in the margin indicate full marks for the questions

Paper : GE–2 (A)

(Introduction to Database System)

1. Answer the following questions : 2×5=10

   (a) Define DBMS. How does DBMS help to describe the traditional file processing?

   (b) Define Relational Database Management Systems.

   (c) How can a database table be created using SQL?

   (d) Define data manipulation language.

   (e) Define entity.

(*Turn Over*)

2. Answer the following questions (any *two*) :

$5 \times 2 = 10$

(a) How can normalization be defined as a factor of a table definition in relation to ER diagram?

(b) Differentiate DDL, DML and DCL.

(c) Explain the three-schema architecture of DBMS.

3. Draw an ER diagram for employee payroll system showing all entity relationships being normalized by elaborating each attribute. 10

4. Write the SQL commands to perform the given tasks : 10

(a) Create a database named as Student.

(b) Create a table named as Entry having attributes :

(i)	Std_id → Primary Key	INT(10)
(ii)	Std_name	VARCHAR(50)	NOT NULL
(iii)	Std_course	VARCHAR(50)	NOT NULL
(iv)	Semester	VARCHAR(50)	NOT NULL
(v)	Email	VARCHAR(50)	NOT NULL
(vi)	Phone	VARCHAR(50)	NOT NULL

Table 2 : Marks-entry having attributes

(i)	Marks_id	INT(10)	Primary key
(ii)	Std_id	Foreign key	INT(10)
(iii)	Marks	VARCHAR(50)	NOT NULL

(c) Insert at least three records in each table.

(d) Display the names of students whose course is BCA and also display the marks.

(e) Display the marks of each students of 2nd semester and course : BCA.

5. Explain the architecture of DBMS. 8

6. Explain the problems that occur when functional dependencies are not well-structured in RDBMS. 5

Or

Write down the advantages of DBMS over traditional file processing.

Paper : GE–2 (B)

(Introduction to Programming)

1. Answer any *seven* of the following questions :

                                                      1×7=7

   (a) What is the use of main() function?

   (b) What is #include called?

   (c) What does "%.2f" in C?

   (d) Write the syntax of for loop.

   (e) Define token in C++.

   (f) What is constructor in C++?

   (g) What is /0 character?

   (h) What is the difference between "=" and "=="?

2. Answer any *eight* of the following questions :

                                                      2×8=16

   (a) Write a short note on type conversion.

   (b) Write two advantages of using object-oriented programming.

   (c) How to declare and initialize an array in C?

   (d) What is the difference between struct and class?

   (e) What are function overloading and operator overloading?

   (f) What is the difference between an array and a list?

   (g) Write the syntax of while and do while loop.

   (h) What does the scope resolution operator do?

   (i) What are the basic data types supported in C programming language?

3. Answer any *five* of the following questions :

                                                      6×5=30

   (a) Discuss the access modifiers in brief.

   (b) What is operator precedence? Explain various types of operator in C.

   (c) What are the various kinds of loop statements supported by C++? Explain the functioning of each one with suitable example.

   (d) Write a C program to find the largest number among three numbers.

   (e) Write a C++ program to find the maximum and minimum of an array.

   (f) Write a C program to print alphabets from A to Z using loop.

(Continued)

(Turn Over)

Paper : GE–2 (C)

(**Computer Network and Internet Technology**)

1. Answer the following as directed : 1×5=5

   (a) What is a hyperlink?

   (b) What is the function of a repeater?

   (c) There are _____ layers in the ISO OSI reference model.

   (Fill in the blank)

   (d) Which LAN topology consists of a single cable (backbone) to which all devices are connected?

   (i) Star

   (ii) Bus

   (iii) Ring

   (iv) Mesh

   (Choose the correct answer)

   (e) What is e-commerce?

2. Answer the following questions (any *five*) : 4×5=20

   (a) What is the function of a router in a network? How does it differ from a switch?

(Continued)

   (b) How to insert an image in an HTML document? Write the syntax.

   (c) What is the use of CSS? Explain briefly.

   (d) What is a tree topology? Write its characteristics.

   (e) What is an internet browser and what is its primary function? Name one commonly used internet browser.

   (f) What are the primitive datatypes in JavaScript? Explain briefly.

3. Answer any *four* of the following : 7×4=28

   (a) What are the components of data communication? Explain.

   (b) Explain the OSI reference model.

   (c) Discuss in detail about guided transmission media with example.

   (d) Define simplex, half-duplex and full-duplex communications with example.

   (e) What is an event in JavaScript? Explain with an example.

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