Chapter-wise Guess Paper

Computer Science (2nd Year)

Chapter	Question No	Short Questions	Question No	Long Questions
1	**Data Basics**		**Data Basics**	
	1	Explain Data.	**1**	Describe Operations on Data, Manipulation and all steps.
	2	Explain Information.	**2**	Explain the three Database Models with Diagrams.
	3	Describe Operations on Data.	**3**	Describe Objectives of DBMS, its advantages and disadvantages.
	4	Describe Data Capturing.	**4**	Describe six Features of Database Management System (DBMS).
	5	Describe Data Manipulation on gathered data and its step Classifying.		

6	Describe Data Manipulation on gathered data and its step Calculation.
7	Describe Data Manipulation on gathered data and its step Sorting.
8	Describe Data Manipulation on gathered data and its step Summarizing.
9	Explain two steps of Management of Results Output after Manipulation.
10	Explain Traditional File System, including Record & File.
11	Explain File Types from Usage point of view.
12	Explain File Types from Functional point of view.
13	Explain File Types from Storage (File Organization) point of view.
14	Explain Database System with Diagram.
15	Describe Main Components of Database System.
16	Describe three Database Objectives.
17	Explain Hierarchical Database Model with Diagram.
18	Explain Network Database Model with Diagram.

	19	Explain Relational Database Model with Diagram.
	20	Explain Database Management System.
	21	Describe Objectives of Database Management System.
	22	Describe five Advantages of Database System.
	23	Describe five Disadvantages of Database System.
	24	Describe Features of Database Management System (DBMS).

2	**Basic Concepts and Terminology of Databases**	**Basic Concepts and Terminology of Databases**
	1 Explain Field, Record and File with all their names.	**1** Explain Relation with example and Properties of Relation.
	2 Explain RELATION or TABLE.	**2** Describe Keys with examples and Types of Keys.
	3 Explain Entity, with example and database modeling.	
	4 Describe four Properties of Relation.	

		5	Describe The Database User.	
		6	Describe The Data Administrator.	
		7	Describe The Database Administrator.	
3	**Database Design Process**			**Database Design Process**
		1	Describe four aspects of Practical Scenario of owning a Database.	**1** Describe Data Modeling, its Ingredients, Cardinality and Modelity.
		2	Explain three Ingredients of Data Modeling.	**2** Describe Database Design and explain Logical Database Design.
		3	Explain Cadinality and Modality with Diagram.	**3** Describe Database Design and explain Physical Database Design.
		4	Explain Entity-Relationship (ER) Diagram with example.	
		5	Draw Dtabase Development Process Diagram.	
		6	Explain Conceptual (Logical) Database Design with Diagram.	
		7	Explain Physical Database Design with Diagram.	
		8	Describe Components of Physical Database Design.	

		9	Describe Basic Data Distribution Strategies.	
		10	Describe Database Implementation.	
4	**Data Integrity and Normalization**			**Data Integrity and Normalization**
		1	Explain Data Integrity along with the two constraints.	**1** Describe Data Integrity, explain Normalization in detail with its problems.
		2	Explain Normalization.	**2** Describe Normalization steps with diagram and explain 1NF.
		3	Explain Functional Dependency.	**3** Describe Normalization steps with diagram and explain 2NF.
		4	Differentiate between Synonyms & Homonyms in Normalization.	**4** Describe Normalization steps with diagram and explain 3NF.
		5	Explain Redundant Information.	
		6	Explain Mutually Exclusive Data.	
		7	Graphically express Normalization Steps with appropriate remarks.	
		8	Describe First Normal Form (1NF).	
		9	Describe Second Normal Form (2NF).	

	10	Describe Third Normal Form (3NF).	
	11	Explain Transitive Dependency.	
5	**Introduction To Microsoft Access**		**Introduction To Microsoft Access**
	1	Describe benefits of MS Access.	
	2	How do you create a new database in MS Access?	
	3	Describe Database Objects in MS Access.	
	4	Describe Queries in MS Access.	
	5	Describe Forms in MS Access.	
	6	Describe Reports in MS Access.	
6	**Table And Query**		**Table And Query**
	1	Describe Characteristics of Tables in a Relational Database.	
	2	Explain Degree & Cardinality of a Relation.	
	3	Explain MS Access IDE.	

	4	Explain Field Properties in Database Design View.	
	5	Explain Number Formats in MS Access.	
	6	Explain Date Formats in MS Access.	
	7	Explain Primary Key in MS Access.	
	8	Explain Table Relationships in MS Access.	
	9	Explain Referential Integrity in MS Access.	
	10	Explain Sorting & Filtering in MS Access.	
	11	Describe Types of Queries in MS Access.	
	12	Explain use of Wildcards in MS Access.	
	13	Explain the process of Performing Calculations in MS Access Queries.	
7	**Microsoft Access-Forms And Reports**		**Microsoft Access-Forms And Reports**

		1	Explain Form in MS Access.	
		2	Explain Report in MS Access.	
		3	Differentiate between Form & Report in MS Access.	
		4	Explain Form Creation in MS Access.	
		5	Explain List & Combo Boxes in MS Access Forms.	
		6	Explain Check Boxes and Radio Buttons in MS Access Forms.	
		7	Explain SubForm in MS Access Forms.	
		8	Explain Reports in MS Access.	
		9	Explain printing Reports in MS Access.	
8	**Getting Started With C**			**Getting Started With C**
		1	What is a Computer Program?	**1** Explain complete process of C Program development with diagram.
		2	Brief History of C.	**2** Explain Low Level, High Level Languages and their Characteristics.
		3	Describe Steps in writing a C Program.	

4	Draw C Program Development Process Diagram.	
5	Write a complete C program Hello Word ! That pauses at the end.	
6	Explain Processor Directives.	
7	Explain function main with example.	
8	Explain delimiters in C language.	
9	Explain statement terminator in C language.	
10	Explain the function printf in C language.	
11	Explain Common Programming Errors.	
12	Explain Low Level Languages.	
13	Explain High Level Languages.	
14	Describe Common Characteristics of High Level Languages.	

9	**Elements of C**		**Elements of C**	
	1	Identifiers in C.	**1**	Describe Declaring, Defining, Initializing and Rules for Naming Variables.
	2	Standard Identifiers in C.	**2**	Explain Data Types for Integers, Floating Point Numbers & Characters.

3	User-Defined Identifiers in C.
4	Keywords or Reserved Words in C.
5	Variables and declaration in C.
6	Declaring vs Defining a Variable in C.
7	Initialising a Variable in C.
8	Rules for naming variables in C.
9	Constants and the two types in C.
10	Data Type.
11	Data Types for Integers in C.
12	Data Types for Floating Point numbers in C.
13	Data Type for Characters in C.
14	Arithmetic Operators in C with a table.
15	Relational Operators in C with a table.
16	Logical Operators in C with a table.
17	Assignment Operator in C.
18	Increment & Decrement Operator in C.
19	Operator Precedence in C.
20	Expression in C.
21	Explain working with Division Operator in C.

3	Explain Arithmetic, Relational and Logical Operators in C with Tables.
4	Explain Assignment, Increment, Decrement and Compound Assignment Operators.
5	Explain Operator Precedence in C with complete Table.
6	Explain Expression, its Data Type, Division and Comments with example program.

	22	Explain comments in C with an example program.		
10	**Input / Output**		**Input / Output**	
	1	Explain printf Function in C with an example program.	**1**	Explain printf function, Format & Field-Width Specifiers.
	2	Explain Format Specifiers in printf Function in C, using a program.	**2**	Explain escape sequences, its table and example program.
	3	Explain Field Width Specifier in printf Function in C, using a program.	**3**	Explain scanf function, with an example program.
	4	Explain Escape Sequence in printf Function in C, using a program.	**4**	Explain Assignment, Increment, Decrement and Compound Assignment Operators.
	5	Explain scanf Function in C, using a program.	**5**	Explain Operator Precedence in C with complete Table.
	6	Differentiate between Character Input functions getch() and getche() in C.	**6**	Explain Expression, its Data Type, Division and Comments with example program.
11	**Decision Constructs**		**Decision Constructs**	

1	Describe Control Structures in C.	**1**	Write a complete program in C, that locates a point in Coordinate Plane.
2	Explain if statement in C using an example diagram & program.	**2**	Explain if statement, its form, diagram and an example program.
3	Explain if-else statement in C using an example diagram & program.	**3**	Explain if-else statement, its form, diagram and an example program.
4	Explain nested if statement in C using an example diagram & program.	**4**	Explain nested if statement, its form, diagram and an example program.
5	Explain nested if and sequence of ifs in C using an example program.	**5**	Explain if-else-if statement, its form, diagram and an example program.
6	Explain if-else-if statement in C using an example diagram & program.	**6**	Explain use of logical operators with an example program.
7	Explain logical operators in C using an example program.	**7**	Explain switch statement, its form and an example program.
8	Explain switch statement in C using an example program.	**8**	Explain conditional operators with an example program.
9	Explain conditional operator in C using an example program.	**9**	Write a complete program in C, that locates a point in Coordinate Plane.
		10	A program that calculates the square root of a number input by user using if-else.
		11	A program that accepts three numbers from the user and displays the largest number.

12	A program that inputs a number from the user and determines whether it is positive, negative or zero.
13	Write a program that inputs a character from the user and checks whether it is a vowel or a consonant.
14	A program that accepts TWO numbers x and y from the user and determines / displays the quadrant on which the point (x, y) lies.
15	A year is a leap year if it is divisible by four, except that any year divisible by 100 is a leap year only if it is divisible by 400. Write a program that inputs a year such as 1996, 1800, and 2010, and displays "Leap Year" if it is a leap year, otherwise displays "Not a Leap Year".
16	Write a program that inputs obtained marks of a student, calculates percentage (assume total marks are 1100 or may get input from user), and displays his / her grade.

Loop Constructs

1	Explain while loop in C using an example diagram & program.
2	Explain do-while loop in C using an example diagram & program.
3	Differentiate between while and do-while loops in C.
4	Explain nested loop in C using an example program.
5	Write a program in C to find the average marks of students.
6	Explain goto statement in C using an example program.

1	Write a complete program in C, that locates a point in Coordinate Plane.
2	Explain while statement, its form, diagram and an example program.
3	Explain do-while statement, its form, diagram and an example program.
4	Explain nested loop statement, its form, diagram and an example program.
5	Explain for loop statement, its form, diagram and an example program.
6	Explain goto statement, its form, diagram and an example program.
7	Write a program to calculate the square root of a positive number (handle negative numbers properly).
8	Write a program that inputs a number and displays the message "Prime Number" if it is a prime number, otherwise displays "Not a Prime Number".
9	Write a program that displays the first 15 even numbers.
10	Write a program that inputs a number, and displays its table.

			11	Write a program using do-while loop that repeatedly prompts for and takes input until a value in the range 0 through 15 inclusive is input. The program should add all the values before exiting the loop and displays their sum at the end.
13	**Functions In C**		**Functions In C**	
	1	Differentiate between unstructured and structured programming language.	**1**	Explain a function, function header, function body and return statement with example program.
	2	Explain importance of functions in C.	**2**	Explain local variables of a function and their scope with example program.
	3	Explain types of functions in C.	**3**	Explain global variables and their scope with example program.
	4	Explain function format in C using an example.	**4**	Explain functions without arguments with example program.
	5	Write a C function and use it in an example program.	**5**	Explain functions that accept arguments and return value with example program.

6	Explain local variables and their scope in C using an example.	**6**	Write a function named Print_Asterisks that will print asterisks (*) according to the pattern shown and invoke a function call from the function main to print the asterisks. ****** … * in six rows.
7	Explain global variables and their scope in C using an example.	**7**	Write a program that calls two functions Draw_Horizontal and Draw_Vertical to construct a rectangle.
8	Explain functions without arguments in C using an example.	**8**	Write a program that prompts the user for the Cartesian coordinates of two points P1 (x1, y1) and P2 (x2, y2) and displays the distance between them.
9	Explain functions with arguments & return value in C using an example.	**9**	Write a program that prompts the user to enter a number and then reverses it. Write a function Reverse to reverse the number.
		10	Write a function named Draw_Asterisks that will print asterisks (*) according to the pattern shown and make a function call from the function main to print the asterisks pattern.
		11	Write a function Is_Prime that has an input parameter i.e num, and returns a value of 1 if num is prime, otherwise returns a value of 0.

12	Write a complete C program that inputs two integers and then prompts the user to enter his / her choice. If the user enters 1 the numbers are added, for the choice of 2 the numbers are divided, for the choice of 3 the numbers are multiplied, for the choice of 4 the numbers are divided (divide the larger number by the smaller number, if the denominator is zero display an error message), and for the choice of 5 the program should EXIT (terminate). Write four functions Add( ), Subtract( ), Multiply( ) and Divide( ) to complete the task.
13	Write a program that prompts the user to enter a number and calls a function Factorial( ) to compute its factorial. Write the function Factorial() that has one input parameter and returns the factorial of the number passed to it.

	14	Write a function GCD that has two input parameters and returns the greatest common divisor of the two numbers passed to it. Write a complete C program that inputs two numbers and calls the function GCD to compute the greatest common divisor of the numbers entered.

14	**File Handling In C**		**File Handling In C**
	1	Explain Stream, Text Stream and Binary stream in C.	**1** Explain String Handling in C with an example program.
	2	Explain Newline and EOF marker in C.	**2** Explain File Handling in C with an example program.
	3	Explain File Opening & Its Modes in C.	**3** Explain reading and writing characters to a file using C program example.
	4	Explain the File Pointer in C using an example program.	**4** Write a program that reads a file and then writes its contents to another file (copy file).
	5	Explain reading and writing characters in a file using an example program.	**5** Write a program that accepts name and telephone numbers of your friends and write them in a file “Contacts.txt”.

6	Explain string handling in C using an example program.	**6**	Write a program that reads the contacts.txt file, and displays its contents on the screen.
7	Explain string assignment in C using an example program.	**7**	Write a program that will append records in contacts.txt file.
8	Explain string handling in text files using a C example program.	**8**	Write a program (using Formatted I/O) that accepts name and telephone numbers of your friends and write them in a file "Contacts.txt".
9	Explain formatted I/O in text files using a C example program.	**9**	Write a program that counts the total number of characters in a text file.
		10	Write a program that counts the number of words in a text files and display the count on the screen.

15	**BISE Practicals**	**BISE Practicals**	
		1	Write a program in C Language to Convert Fahrenheit into Celsius by using formula C = 5 / 9 (F – 32).
		2	Write a program in C Language to Convert Celsius into Fahrenheit by using formula F = C * (9 / 5) + 32.

3	Write a program in C Language which displays the Maximum and Minimum from N numbers (three numbers taken from user), also show its output.
4	Write a program in C Language to Print The Output as shown below by using goto and Nested Loop statement. 1 2 3 4 5 6 7 8 9
5	Write a program in C Language to Calculate The Product of First 20 Odd Numbers.
6	Write a program in C Language to Calculate and Print The Area of a Geometrical Figure (Square, Rectangle, Right-Angle Triangle, Circle with appropriate formula).
7	Write a program in C Language to Print Following Output with the Help of Nested Loop statement.