

**University of Calicut**  
**Information Technology Mission**  
**Diploma in Information Technology**  
**First Semester Examination, August 2008**  
**Paper I : Computer Programming and Problem Solving (C and C++)**

***Time : 2<sup>1</sup>/<sub>2</sub> hours***

***Max.Marks:100***

**Section A**

*(Answer any 10 questions. Each carries 3 marks)*

1. What is system software?
2. Convert the given octal numbers into binary numbers  
(a) 546            (b) 742            (c) 111
3. Write a program to find the given operation  
 $2 + 4 + 6 + \dots + 2n$
4. What are the fundamental data types in 'C'?
5. What is the output for the following C code  
....  
....  
Value = 1;  
Switch (value)  
{  
case 1:            printf("Good");  
case 2:            printf("morning");  
case 3:            printf("Cprogram")  
}  
.....  
.....
6. Differentiate between structure and union data types?
7. How do you measure the performance of a program?
8. What is an operating system?
9. Differentiate high level and low level programming language with examples.
10. What are pointers? Discuss its advantages
11. Explain basic principles of OOP?
12. How do you differentiate structure and class?
13. Explain bit-wise operators with example?
14. Discuss about supercomputers
15. Discuss top-down and bottom-up approach for software design.

**Section B**

*(Answer any 10 questions. Each carries 5 marks)*

16. Explain different generations of computers.
17. Write an algorithm to generate Fibnocci series.

18. What is inheritance? What are the various types of inheritance?
19. Explain the concept of polymorphism.
20. Explain the classification of software.
21. What is dynamic memory allocation?
22. What are arrays? Write a program to store N numbers and find a biggest number among them.
23. Explain *simple if*, *nested if* and *else..if* ladder with suitable examples.
24. What is the difference between *while loop* and *do-while loop*?
25. Write a C program to generate the following pattern:

```

1
2  2
3  3  3
4  4  4  4
5  5  5  5  5

```

.....  
 ..... up to a given “n”

26. Write a C program to check a given string is a palindrome or not.
27. Write a C program to convert decimal numbers to binary numbers.
28. Discuss constructors and destructors with example.
29. While compiling a C program it is showing that “Unable to open STDIO.H”. What is the reason?
30. Discuss the advantages of C++ programming over C programming with justification.

### Section C

*(Answer any 2 questions, Each carries 10 marks)*

31. Write an algorithm and flowchart to check the nature of roots of a quadratic equation
32. Write a C++ program to explain how to add two matrices using operator overloading.
33. Explain the basic functional parts of a computer with a neat diagram
34. Write a C++ program to count and print the number of objects created of the class types in main or sub functions. (Hint: use static variables)

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**Information Technology Mission**  
**University of Calicut**  
**Diploma in Information Technology**  
**First Semester Examination, August 2008**  
**Paper II : Principles of Database Management Systems**

*Time: 2<sup>1</sup>/<sub>2</sub> hours*

*Max. Marks: 100*

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**Part A**

*Answer any 10 questions. Each carries 3 marks*

1. What is a database management system?
2. What is normalization?
3. Name three popular database management systems
4. What is view? Explain with an example.
5. What are the ACID Properties of database?
6. What is metadata?
7. Write query for the given sentence:  
“Display all the students who secured marks above 70”
8. What is ER diagram?
9. What is foreign key?
10. Explain UPDATE command with example
11. What is schema?
12. What do you mean by key constrains?
13. What are functional dependencies?
14. What is BCNF?
15. Explain briefly different join operations in MySQL
16. Write MySQL. Statement for creating table.

**Part B**

*Answer any 10 questions. Each carries 5 marks*

17. What are the advantages of database management system over conventional file system?
18. Explain various notational conventions used in ER diagram
19. What is relational database systems?
20. Write SQL query for List Name, Designation and Age of all Employees whose basic salary is above 6500 and they are working for Accounts section (Field of tables are EID, NAME, DESIGNATION, DEPARTMENT, BASIC, AGE)
21. Explain the various levels of data independence
22. What is UML class diagrams?
23. Explain INSERT and DELETE statement with example
24. Discuss about a memory hierarchies and storage devices.
25. Explain the difference between record based logical model and object based logical model.
26. How is data stored in hashed file organization?
27. What is heap file organization?
28. What are the various protection and recovery mechanisms in MySQL?

29. How are variable length records stored in a database?
30. How will you check whether decomposition is lossy or lossless?
31. Describe the following:  
(a) Macro      (b) DDL      (c) DML      (d) Forms      (e) Report

**Part C**

*Answer any 2 questions. Each carries 10 marks*

32. Explain the three schema architecture of DBMS.
33. Discuss about the first three normal forms with example.
34. Explain functional dependency and Armstrong's axioms.
35. With a diagram explain component modules of DBMS.

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**University of Calicut**  
**Information Technology Mission**  
**Diploma in Information Technology**  
**Second Semester Examination, September 2008**  
**Paper I: Windows Programming Through Visual Basic**

*Time 2½ Hours*

*Max. Marks: 100*

**Section A**

*(Answer any 10 questions. Each carries 3 marks)*

1. What is the purpose of creating a short cut on desktop?
2. What is task bar?
3. “I want to run an anti virus program **automatically** on every Friday at 5.30PM”  
How do I perform the task?”
4. Discuss various windows GUI programming languages
5. Explain both CUI and GUI with examples?
6. What do you mean by event driven programs?
7. Explain the properties of window in visual basic IDE
8. Discuss various Visual Basic file extensions.
9. Discuss various elements of visual basic tool box.
10. What are the advantages of using functions?
11. What are the rules for naming the visual basic variables?
12. Write visual basic code for the following expression  $I=P*N*R$
13. Discuss the Load and Unload statements
14. What is message box? What is its use? Explain with suitable example
15. Discuss various mouse events.

**Section B**

*(Answer any 10 questions . Each carries 5 marks)*

16. Explain any five keyboard short cuts of windows operating systems.
17. Write visual basic steps and code for select an item from the dropdown list and add to list-box.
18. What are the various ways to declare variables?
19. Discuss global and local scope of a variable with example
20. Design a simple arithmetic calculator. (write your steps and code)
21. Write visual basic program to display various colors using button.
22. What is Active X control? Explain any three Active X control
23. Explain the use of data controls
24. Explains runtime error, logical error, and syntax error with examples.
25. What is OLE?
26. Compare visual basic program with other popular programming languages
27. Write a program to create an interactive window

**Section C**

*(Answer and 2 questions each carries 10 marks)*

28. Explain the various data types in visual basic programming environment with examples
29. Describe various elements in Visual Basic IDE
30. Explain the various conditional looping structures of visual basic
31. Explain any five mathematical functions of visual basic with example

**University of Calicut**  
**Information Technology Mission**  
**Diploma in Information Technology**  
**Second Semester Examination, September 2008**  
**Paper II : Internet Concepts and Web Page Making**

*Time: 2½ Hours*

*Max. Marks: 100*

**Section A**

*(Answer any 10 questions. Each carries 3 marks)*

1. What are the basic components of a data communication system?
2. Discuss the simplex and the duplex communications
3. Why the normal cables used by cable TV operators are not useful for internet usage?
4. What is e-commerce?
5. What is DNS?
6. What are search engines? What are the popular search engines?
7. What are web browsers? Name any three popular web browsers?
8. What is URL?
9. What is Telnet?
10. What is digital signature?
11. What is HTML? Where is it used?
12. What is dream waver?
13. Describe "href" tag of HTML with examples
14. Discuss the following domain extensions:  
(a) .com          (b) .per          (c) .edu          (d) .gov          (e) .in
15. What is client server computing?

**Section B**

*(Answer any 5 questions. Each carries 10 marks)*

16. Discuss various communications medias.
17. Differentiate between analog and digital signals
18. What is MODEM? Explain its functionalities.
19. Discuss communication protocols
20. Design the following table using HTML

<b>Roll No.</b>	<b>Name</b>	<b>Marks</b>	<b>Result</b>
CUDIT01	Ranjan	378	First
CUDIT02	Aslam	492	Dist.
CUDIT03	Thomas	305	Second
CUDIT04	Jeevan	200	Fail

21. How do define frames using HTML? Explain with suitable example?
22. What are the difference between chatting and e-mail?
23. What is remote login? What are its advantages?

### **Section C**

*(Answer any 2 questions. Each carries 10 marks)*

24. Explain the classifications of computer networks
25. Explain different network topologies.
26. Discuss the impact of internet over society
27. Design a simple static web page for your computer center.

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**B20101**

**Name:**  
**Reg. No.**

**UNIVERSITY OF CALICUT**  
**Information Technology Mission**

*Diploma in Information Technology*  
*First Semester Examination, April / May 2010*  
*Paper I : Computer Programming and Problem solving (C and C++)*

**Time: Two and half Hours**

**Max. Marks : 100**

**Part A**

**(Answer any 10 questions. Each carries 3 marks)**

1. Differentiate compiler, assembler and interpreter?
2. What is an operating system? Explain different types of operating systems?
3. Briefly explain any three salient features of GNU / Linux operating system?
4. Explain basic data types of C language and its memory requirements?
5. What is an Array? How is it declared?
6. Write a C program to check whether a given number is even or odd?
7. Differentiate local and global variables?
8. What are pointers? Explain its significance in C?
9. What are file modes? Explain different file modes in C?
10. Briefly explain the conditional operator in C++ with an example?
11. Explain the different access specifiers in C++?
12. What is containership? How is it implemented in C++?
13. Differentiate static and dynamic memory allocation in C++?
14. What are templates in C++?
15. Differentiate default, copy and parameterized constructors in C++?

**Part B**

**(Answer any 10 questions, each carries 5 marks)**

16. Briefly explain the different generations of Computers?
17. Differentiate Digital, Analog and Hybrid Computers?
18. Explain the directory structure of DOS? Differentiate internal and external commands of DOS?
19. What is an algorithm? Explain the characteristics of a good algorithm?
20. Explain the important types of programming errors?
21. What is Debugging? Explain popular debugging Techniques?
22. What is documentation? Differentiate Internal and External documentation?
23. What is time Complexity? How is it estimated?
24. Write a C Program to reverse a given integer number and find sum of digits?
25. What is recursion? Write a recursive program in C to find factorial of a given number?
26. Differentiate call by value and Call by reference of functions in C with an example?



27. Write a C program to find transpose of a given matrix?

**(P.T.O.)**

28. Explain different storage class specifiers in C++?

29. What is Inheritance? Differentiate multiple and multilevel Inheritance in C++ with an example?

30. Write a C++ program to create a class called person

(Data members – Name, sex, Age)

[Member Functions – read ( ), display ( )]

Derive a class called student from person

(Data members – standard, school name)

[Member functions – read ( ), display ( )]

**Part C**

**(Answer any 2 questions. Each carries 10 marks)**

31. With the help of a block diagram explain the different Components of a Computer system?

32. What is a flow chart? Explain different symbols used in it? Draw a flow chart to find the greatest of given 3 numbers?

33. Briefly explain different types of operators used in C language?

34. Explain file handling in C++? Explain different file stream classes and its member functions?



B20102

Name:  
Reg. No.

**UNIVERSITY OF CALICUT**  
**Information Technology Mission**

*Diploma in Information Technology*  
*First Semester Examination, April / May 2010*  
*Paper II : Principles of database Management Systems*

**Time: Two and half Hours**

**Max. Marks : 100**

**Part A**

**(Answer any 10 questions. Each carries 3 marks)**

1. Differentiate logical and physical data?
2. What is Entity relationship model?
3. Briefly explain different file operations?
4. What is a Heap file organization?
5. Define Degree, Cardinality and Domain of a relation?
6. What is file activity ratio? Explain its significance?
7. What are views? Explain its advantages?
8. What is meant by BCNF?
9. Briefly explain general features of MySQL?
10. Explain different join operations in MySQL?
11. Explain any 3 Date and Time functions in MySQL?
12. Differentiate DDL and DML with example?
13. Explain different types of primary keys that can be defined in MS – Access?
14. Define virtual records?
15. Explain the components of a DBMS?

**Part B**

**(Answer any 10 questions, each carries 5 marks)**

16. Briefly explain different levels of abstraction of data?
17. Explain different types of database users?
18. Briefly explain Hierarchical model?
19. Briefly explain any 5 SQL data types?
20. Explain any five SQL aggregate functions?
21. Explain different types of anomalies that may happen due to bad database design?
22. Explain Armstrong's Axioms?
23. What is multi-valued dependency?
24. Briefly explain different methods used for storing files with variable length records?
25. Explain different column constraints of SQL?
26. Explain various protection and security settings in MySQL?
27. Explain any 5 string functions in MySQL?
28. Differentiate object based logical model and record based logical model?

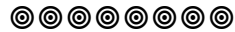
29. Write short notes on (a) Primary Key (b) Foreign Key (c) Super Key (d) candidate Key?  
30. Briefly explain the concepts of RDBMS?

**(P.T.O.)**

**Part C**

**(Answer any 2 questions. Each carries 10 marks)**

31. Briefly explain the advantages of DBMS over conventional file keeping system?  
32. What is normal form? Explain first three normal forms with suitable examples?  
33. Briefly explain different file organizations? Write the advantages and disadvantages of each?  
34. What is relational algebra? Explain different operations in relational algebra with suitable examples?



**B20103**

**Name:**  
**Reg. No.**

**UNIVERSITY OF CALICUT**  
**Information Technology Mission**

*Diploma in Information Technology*  
*Second Semester Examination, April / May 2010*  
*Paper III : Windows Programming Through Visual Basic*

**Time: Two and half Hours**

**Max. Marks : 100**

**Part A**

**(Answer any 10 questions. Each carries 3 marks)**

1. Explain any three salient features of MS Windows operating system?
2. What is Event driven Programming?
3. Differentiate properties, events and methods?
4. Write a Visual Basic Program to print multiplication table of a given number?
5. Briefly explain MDI forms in Visual Basic?
6. Write a Visual Basic Program to find compound interest if principal, No. of years and rate of interest are given?
7. Briefly explain the rules to be followed while naming a variable in Visual Basic?
8. Discuss the different values of border style property of a form in Visual Basic?
9. Distinguish between load and Activate events of a form?
10. What is meant by implicit and explicit variable declaration in Visual Basic?
11. Write a Visual basic Program to find the sum of squares of first N natural numbers?
12. What is the use of Timer control? Explain its important properties?
13. Differentiate procedures and functions in Visual Basic?
14. What is the use of BOF and EOF properties of ADO?
15. Differentiate Check Box and Option Button Controls in Visual Basic?

**Part B**

**(Answer any 10 questions. Each carries 5 marks)**

16. What is Desktop? Explain different Desktop items of MS Windows?
17. Differentiate MsgBox ( ) and Input Box ( ) functions in Visual Basic with syntax?
18. Write the steps involved in creating a simple calculator in Visual Basic with code?
19. Explain different data types in Visual Basic with their memory allocation?
20. Write a Visual Basic program to find the sum of digits and reverse of a given integer number?
21. Explain the working of select case structure with the example?
22. Explain the different cursor types defined in ADO object?
23. What is parameter passing? Explain default parameter in Visual Basic?
24. Briefly explain the elements of menu Designer in Visual Basic
25. Explain any five mathematical functions available in Visual Basic

26. Differentiate List Box and Combo Box controls in Visual Basic. Write any 3 methods of List Box Control?
27. Describe the different forms of if conditional statements in VB with example?

**(P.T.O.)**

28. What is a project? Explain its components?
29. Write a Visual Basic program to check whether a given number is prime or not?
30. Write a Visual Basic program to find the greatest of N given Numbers using Array?

**Part C**

**(Answer any 2 questions. Each carries 10 marks)**

31. What is Visual Basic IDE? Explain the components of Visual Basic IDE?
32. What is Data Report Designer? Explain its components and general features?
33. Briefly explain different types of operators used in Visual Basic with example
34. How is Data base connectivity established in Visual Basic? Briefly explain the steps in creating a database and connecting it to Visual Basic Environment?



B20104

Name:  
Reg. No.

**UNIVERSITY OF CALICUT**  
**Information Technology Mission**

*Diploma in Information Technology*  
*Second Semester Examination, April / May 2010*  
*Paper IV : Internet Concepts and Web Page Making*

**Time: Two and half Hours**

**Max. Marks : 100**

**Part A**

**(Answer any 10 questions. Each carries 3 marks)**

1. What is data communication? Explain basic elements of communication system?
2. Differentiate simplex, half duplex and full duplex communication modes?
3. What is Bandwidth? Explain its significance in data transmission?
4. Differentiate Amplitude, frequency and phase modulation?
5. What is Internet? What is its use?
6. What is a browser? Give any 3 examples?
7. What is IP address? Explain its significance?
8. What is E-mail? Explain its advantages?
9. What is (a) URL (b) WWW (c) Hyperlink
10. What is digital money?
11. Differentiate container and empty tag in HTML? Give 2 examples for both?
12. Briefly explain different views in Dream weaver?
13. Differentiate GIF, JPEG and PNG formats?
14. What is Telnet?
15. What is DNS?

**Part B**

**(Answer any 10 questions. Each carries 5 marks)**

16. Differentiate Digital and Analog Transmission?
17. Differentiate Time Division multiplexing and frequency division multiplexing?
18. Write short notes on (a) Concentrator (b) Front end processor?
19. Differentiate Synchronous and Asynchronous transmission?
20. Explain the difference between LAN and WAN?
21. Write a short note on Internet Protocol Version 6?
22. Explain the major reasons for bounce of E-mail?
23. What is a search engine? Explain the functions of search engine?
24. What is a Protocol? Explain any two communication Protocols?
25. What is MODEM? What is its use?
26. Explain Different types of lists in HTML? Also mention the tags used for creating lists?

27. Differentiate Circuit switching and Message switching technique?

(P.T.O.)

28. What is Internet News Group? Explain News Group Hierarchies?

29. What is firewall? Explain it's functioning?

30. Write HTML code to create a simple web page as shown below?

<p style="text-align: center;"><b>Department of Tourism</b> <b>Kerala State</b></p> <p><u>Tourist attractions in Kerala</u></p> <ol style="list-style-type: none"><li>1. Kovalam Beach</li><li>2. Sri.Padmanabha Swami Temple</li><li>3. Museum</li></ol>
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**Part C**

**(Answer any 2 questions. Each carries 10 marks)**

31. Briefly explain ISO /OSI layered approach of network architecture?

32. What is a topology? Explain different topologies used in Networking? Mention advantages and disadvantages of each?

33. Briefly explain the different communication channels used for Networking? Mention advantages and disadvantages of each?

34. Write HTML code for creating the following output

State Bank of Travancore	Interest Rate		
	Less than Rs.50,000	Between Rs.50,000 And 1 lakh	Above Rs.1 lakh
Less than 5 years	8	8.5	9
Between 5 to 10 years	8.5	9	9.5
Above 10 years	9	9.5	10