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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION,
MAY 2018.

PRINCIPLES OF INFORMATION TECHNOLOGY

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL questions.

1.   Define : Application software. Give examples.

2.   What are six elements of a computer and communication system?

3.   What is a MODEM? State its uses.

4.   Distinguish internet from intranet.

5.   Write about analog and digital signals.

6.   What is an ISDN? Write its role in communication world.

7.   Write down the syntax of "Syntax-case" statement with diagrammatic representations.

8.   What are keywords? List any ten keywords.

9.   Define : Macros.

10.   What are different categories of functions?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Give a note on word processing features.

12. List down various internet web browsers and explain.

13. Discuss on various telephone related communication services.

14. Explain the concept of local area network in detail.

15. What are string handling functions? Explain with syntax and examples.

16. Write a C program to find the factorial of a given number using recursion function.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Give a detailed description on electronic data interchange.

18. With flowchart, example and syntax explain the "IF-ELSE" construct. Also develop a C program to find whether the read number is odd or even.

19. Develop a C program, using function, to read "*n*" numbers and find the mean and standard deviation.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

OPERATING SYSTEMS

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL the questions.

1. List out the tasks of OS.

2. Define the term Kernel.

3. What does PCB contain?

4. What are the types of scheduler?

5. What are the conditions under which a deadlock situation may arise?

6. Write the goals of I/O software.

7. What is Virtual Memory?

8. Define the term Contiguous memory Allocation.

9. List the various File Attributes.

10. What is meant by Directory?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Describe the components and their functions of operating system.

12. Explain round robin scheduling and priority scheduling algorithms.

13. What is the important feature of critical section? State the dining philosopher's problem and show how to allocate several resources among several processes in a deadlock and starvation free manner.

14. Explain Multiprogramming without swapping or paging.

15. Discuss the basic concepts of paging.

16. Brief on file operations, types and structure.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. With the help of examples, explain FIFO and LRU, optical page replacement algorithms with example reference string. Mention the merits and demerits of each of the above algorithm.

18. Write short notes on critical regions, Event counters and monitors.

19. Discuss on File protection Mechanisms.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION,
MAY 2018.

OBJECT ORIENTED PROGRAMMING AND C++

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL the questions.

1.   What is meant by an object?

2.   Write any two applications of OOPS.

3.   What is meant by an identifier?

4.   Define the term function.

5.   Write down the syntax of class.

6.   Mention the symbol for scope resolution operator.

7.   What is meant by Base Class?

8.   Define the term pointer.

9.   What do you mean by the term template?

10. Define the term "List".

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Write a C++ program to print your name 20 times.

12. Mention the properties of OOPS and explain any two of
     them.

13. Explain the concept of Formatted and Unformatted Input/Output.

14. Write a C++ program for friend function.

15. Explain the concept of Exception Handling in C++.

16. Write a C++ Program to find the biggest number among the given three numbers.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Write a C++ program to explain the concept of Constructor.

18. Explain the types of Functions with examples.

19. Write a C++ program to explain the concept of Function overloading.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

DATA STRUCTURES AND ALGORITHMS

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL questions.

1. What is meant by Time Complexity?

2. What do you mean by Primitive Data Type?

3. Define Priority Queue.

4. Define Linear List.

5. Write the steps to add two strings.

6. Mention the applications of Tree.

7. Mention the different types of Graphs.

8. What is the use of Quick Sort?

9. Name any three Searching Techniques.

10. Define Hashing.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Describe the primitive data types with examples.

12. Explain about the Singly Linked List and write an algorithm for adding an element in the linked list.

13. Write an algorithm for concatenation of two strings.

14. Explain about the Binary Tree representation.

15. Write an algorithm for Quick Sort.

16. Explain about Binary Search with an algorithm.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Write an algorithm for Reverse Polish Notation with explanation.

18. Write an algorithm for Graph Traversal with an example.

19. Explain about Hashing.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

OBJECT ORIENTED DBMS

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL questions.

1.   What are the advantages of DBMS?

2.   List any two queries in DBMS.

3.   What is meant by Aggregation?

4.   Write about ER model.

5.   Define Trigger.

6.   Define Null Values.

7.   What are the kinds of Dependencies?

8.   Write about Database Security.

9.   What is meant by Discretionary Access Control?

10.   Write about WWW.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11.   What is Relational Model? Explain.

12.   Explain conceptual database design with the ER model.

13. Explain about queries over multiple relations.

14. Explain about Clustering and Indexing.

15. Describe the Architecture for parallel databases.

16. Explain about the Database design for an ORDBMS.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. With suitable example explain about the Multivalued Dependencies.

18. What is ODBC and JDBC? Explain the need of ODBC and JDBC.

19. Explain about the Distributed Query Processing.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

C++ LABORATORY

(2002 Onwards)

Time : Three hours   Maximum : 100 marks

One question should be given to each candidate by
LOT system.

1. (a) Write a temperature conversion program that gives
         the user the option of converting Fahrenheit to
         celcius or celeius to Fahrenheit. Use floating point
         numbers to carry out the conversion.

    (b) Write a program in C++ that emulates the DOS
         copy command.

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2. (a) Create a class called TIME that has integer data
         elements for hours, minutes and seconds. The
         constructors should initialize these data elements to
         specified value, if given, otherwise to O.A member
         function should display it, in 11:50:45 format.

    (b) Write a C++ program to create a four function
         (addition, subtraction, multiplication and division)
         calculator.

3. (a) Assumes you want to generate a table of multiples of any given number. Write a program that allows the user to enter the number and then generates the table, formatting it into ten columns and 20 lines.

   (b) Create a class AINT to overload all five integer arithmetic operators (+, −, *,/ and %) so that they operate on object of type int.

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4. (a) Using pointers to create a class and write a program to get the n names and display them in sorted order.

   (b) Create a C++ class for a stock item. It should have the attributes of stock levels and unit price. Define the methods to return the values of these two attributes and to set them using parameters. And two more methods to allow stock receipts and issues. Write a menu driven program to do the above task.

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5. (a) Imagine a publishing company that makes both books and audio-cassette versions of its works. Create a class publication that stores the title and price of a publication. From this class derive two classes :

   Book – which adds a page count and

   TAPE – Which adds a length count

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Each of these three classes should have a getdata( ) function to get its data from the user and a putdata( ) function to display its data. Write a main( ) program to test the book and tape classes by creating instances of them asking the user to fill in their data with getdata( ) and then displaying the data with putdata( ).

(b) Write a program using friend function frifun( ) which can act on the classes alpha and beta. Using constructors fix the values for alpha and beta.

------------------------ Cut here ------------------------

6. (a) Write a menu driven program to add, subtact and multiply the given matrices of order $n \times n$.

(b) Write a program using polymorphism to calculate the square of any two numbers of type int, float, double and long.

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7. (a) Raising a number n to power p is the same as multiplying by itself P times. Write a function power( ) that takes a double value for n and an int value for P and returns the result as double value. Use default argument of 2 for P, so that if this argument is omitted, the number will be squared. Write a main( ) function that gets values from the user to test this function.

(b) Write a program that reads a group of numbers from the user and places them in array of type float. Once the numbers are sorted in the array, the program should average them and print the result. Use pointer notation whenever possible.

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8. (a) Create a class called EMP that contains a name and an employee number. Include a member function called getdata( ) to get data from the user, another function called putdata( ) to display the data. Write a main( ) program to exercise this class.

    (b) Write a program which will accept a string of 10 characters in length from the key board and count the occurrences of each of the five vowels in the string. The output should be in a neat format.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

DATA STRUCTURES – LABORATORY

(2002 onwards)

Time : Three hours   Maximum : 100 marks

ONE Question should be selected and give it to the student by LOT system.

1. (a) Write a program in C++ to sort the elements using selection sort.

    (b) Write a program in C++ to create a linked list and perform its operations using array.

------------------------ Cut here -------------------------

2. (a) Write a program in C++ to sort the elements using insertion sort.

    (b) Write a program to create a linked list and perform its operations using pointers.

------------------------ Cut here -------------------------

3. (a) Write a program in C++ to sort the elements using bubble sort.

    (b) Write a program to insert and delete an element from the stack.

4. (a) Write a menu driven program to perform addition and subtraction of two matrices of order m × n.

   (b) Write a program in C++ to sort the elements using Quick sort.

------------------------- Cut here -------------------------

5. (a) Write a C++ program to search the given element using binary search.

   (b) Write a C++ program to implement the stack operations using linked list.

------------------------- Cut here -------------------------

6. (a) Write a C++ program to search the given element using linear search.

   (b) Write a C++ program to implement the queue structure and its operations using array.

------------------------- Cut here -------------------------

7. (a) Write a menu driven program to perform multiplication and transpose of a matrix.

   (b) Write a program in C++ to sort the elements using Heap sort.

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8. (a) Write a C++ program to copy the contents of one file to another file.

   (b) Write a C++ program to implement the queue.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

INTERNET PROGRAMMING AND WEB DESIGN

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL the questions.

1. What are the tools used to get different services from the Internet?

2. Brief the basic design elements for developing intranet applications.

3. Write about 'String' object in Java.

4. What is CGI?

5. When to use java script?

6. List VBScript supported operators.

7. Give a note on <BGSOUND> tag.

8. What is Afterburner? How sit used for authorware?

9. Write a note on PCN (PointCast Network).

10. How is framing useful in web graphics?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Explain how email is working as a connectionless protocol.

12. Explain the benefits of using PERL as a language for writing CGI programs.

13. Explain the built-in objects and functions in javaScript

14. List and explain the essential components of SGML system.

15. Draw and explain the VDOLive system.

16. Discuss about Dynamic graphics.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Discuss the following :

(a) Firewalls;

(b) Public Key encryption.

18. Write about :

(a) Benefits of Java

(b) ActiveX controls

(c) Microsoft's Internet Client/Server Architecture.

19. Describe the ways of pulling information from web.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

COMPUTER NETWORKS

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL questions.

1. Distinguish between peer-to-peer relationship and a primary-secondary relationship.

2. Why are protocols needed?

3. What are the disadvantages of optical fiber as a transmission medium?

4. Give the relationship between propagation speed and propagation time.

5. What is the purpose of hamming code?

6. Describe the three HDLC station types.

7. What are the network support layers and the user support layers?

8. What is the function of SMTP?

9. How is a secret key different from public key?

10. What is a digital signature?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Describe about the network reference model.

12. Discuss about ISDN architecture.

13. Describe the Sliding window protocols with suitable example.

14. With neat diagram describe about the TCP Header.

15. Describe about the address resolution protocols.

16. Explain the various compression techniques.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Describe the carrier sense multiple access protocols.

18. Explain the Internet multicasting.

19. Describe about secret and public key algorithms.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

SOFTWARE ENGINEERING

(2002 Onwards)

Time : Three hours   Maximum : 100 marks

SECTION A — (10 × 3 = 30 marks)

Answer ALL questions.

1. Define linear sequential model.

2. What is meant by prototyping model?

3. Define risk.

4. How can you estimate the software scope?

5. Discuss about scheduling plan.

6. What are the advantages of software reviews?

7. What are the important steps in requirement analysis?

8. What is meant by data design?

9. What is meant by Integration?

10. Write the differences between verification and validation.

SECTION B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Discuss about software process models.

12. Explain about the software risk identification.

13. What do you mean by software quality assurance? Explain.

14. Explain about the communication techniques.

15. Explain the Architectural design.

16. Describe the white box testing.

SECTION C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Explain about the software reliability.

18. Discuss in detail about the software design concepts and principles.

19. Explain about the software testing methods.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

VISUAL PROGRAMMING

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL questions.

1. What do you mean by data type?

2. What is the main difference between procedures and functions in VB?

3. Write short notes on variables.

4. Mention any four looping structures in VB.

5. Discuss any four string handling functions in VB.

6. Discuss the purpose of radio button.

7. What are splitter windows?

8. What is MFC? Also discuss their usage.

9. Discuss the term 'serialization'.

10. What is Debugging?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Write short notes on DLL.

12. Write a program in VB to sort the given 'n' numbers in ascending order.

13. Explain Grid control with example.

14. Explain event handling with respect to VC++.

15. Explain the documents view architecture.

16. Explain in detail about OLE.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Explain the features of Software Development Kit in detail.

18. Write a note on :

    (a) flex grid

    (b) DB grid.

19. Explain how a database can be accessed in a VC++ application with an example program.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

MULTIMEDIA APPLICATIONS

(2002 onwards)

Time : Three hours   Maximum : 100 marks

PART A — (10 × 3 = 30 marks)

Answer ALL the questions.

1.   What are the elements of a multimedia system?

2.   State the need for cross-platform compatibility.

3.   How non-temporal text is represented?

4.   What is pixel aspect ratio?

5.   Write about redundancy in a digital video.

6.   Differentiate JPEG and MPEG.

7.   Demonstrate the concept of objects and classes.

8.   State the need for Transform classes.

9.   Compare CD and CD-I.

10.   What do you mean by just-in-time training?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Explain the features of any five commercial authoring tools for creating multimedia presentations.

12. Describe the operations of non-temporal Graphics media type.

13. Discuss about any two image compression standards.

14. List and explain the generic operations under component classes.

15. Draw and explain the CD-I architecture.

16. Elaborate the role of multimedia in Training.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Discuss the following :

    (a) Benefits of using multimedia;

    (b) Problems with multimedia.

18. Draw and explain the video compression techniques.

19. Explain about multimedia on networks.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

INTERNET PROGRAMMING – LABORATORY

(2002 onwards)

Time : Three hours   Maximum : 100 marks

ONE question should be given to each candidate
by lot system.

1.   (a)   Write a Javascript to create a window by using the confirm message.

     (b)   Design a web page using HTML code that shows your Bio-Data.

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2.   (a)   Write a VB script to create a calendar for the given month and year.

     (b)   Write a Java program using applet to display any three images when three buttons in the border layout are clicked. The image should be displayed at the center.

------------------------ Cut here ------------------------

3.   (a)   Write a program to insert and delete records from a table using database connectivity.

     (b)   Design a web page for your university.

4.　(a)　Write a VB script to do the following :

　　　(i)　Check the given password

　　　(ii)　Change the existing password.

　(b)　Write a Java program using Applet to display the dialogue and menu in applet.

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5.　(a)　Write a Javascript to create an order from for home appliances.

　(b)　Design a web page with a form in it. The form has the following details.

　　　Student Name, Number, Age, Sex, Address, Religion and Nationality.

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6.　(a)　Write a program to display the records in a table using database connectivity.

　(b)　Design a web page with a form in it. The form has the following details :

　　　Employee number, Name, Designation, Basic pay, DA, HRA, PF and Net pay.

　　　Input : Employee number, Name, Designation and Basic pay

　　　Determine other details using the following :

　　　DA = 43% of basic pay

　　　HRA = 15% of basic pay

　　　PF = 32% of basic pay

　　　Net pay = Basic pay + DA + HRA – PF

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7. (a) Write a VB script to do the following :

   (i) Display the current date

   (ii) Find the difference between the two dates

   (iii) Find the age of a person by providing date of birth.

   (b) Write an applet program to draw a filled rectangle and circle. Use graphic controls.

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8. (a) Write a Javascript to create a color pallet and display the background in the color chosen from the pallet.

   (b) Write a Java program using applet to create the frames and its controls.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2018.

VISUAL PROGRAMMING – LABORATORY

(2002 onwards)

Time : Three hours   Maximum : 100 marks

Break-Up marks

Record Note : 10

Program : 50

Algorithm : 10

Debugging : 10

Execution : 10

Result : 10

Total : $\overline{100}$

Examiner has to select a question to each student by
LOT system.

1.   (a)   Display the date and time in the label box during
          run time using visual basic.   (50)

     (b)   Write a VC++ program to fill the background of the
          client area with a bitmap.   (50)

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2.   (a)   Decide whether the given string is a palindrome or
          not, using event procedure in VB.   (50)

     (b)   Write a VC++ Program to find whether the mouse is
          connected or not.   (50)

3. (a) Write a visual basic program to reverse a string.

(50)

(b) Write a VC++ Program to create a list box in a window. (50)

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4. (a) Create a visual Basic form to display the details of available universities in Tamil Nadu. (50)

(b) Write a VC++ Program to create a window of desired size using MFC. (50)

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5. (a) Write a event driven program to find the power of a number. (50)

(b) Write a VC++ Program to get the status of the shift and toggle keys, using MFC. (50)

------------------------ Cut here ------------------------

6. (a) Write a event procedure program to convert the temperature from centigrade to Fahrenheit and vice versa. (50)

(b) Write a VC++ Program to create a list box in a window. (50)

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7. (a) Write a visual basic program using Active X control, create a textbox that shall accept only numeric value with the following properties, (50)

       (i) Background and Foreground colour of the textbox.

       (ii) Resize the text box.

  (b) Write a VC++ program to fill the background of the client area with a bitmap. (50)

------------------------- Cut here -------------------------

8. (a) Write a visual basic program to fill the background colour with red, blue and green. (50)

  (b) Write a VC ++ Program to get the status of the shift and toggle keys using MFC. (50)

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