**101**

DE-3329

DISTANCE EDUCATION

M.C.A. (Non-Semester) DEGREE EXAMINATION, MAY 2008.

First Year

DIGITAL COMPUTER ORGANIZATION

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the various complement systems in binary numbers.
   1. (b) Discuss about gray code and BCD code.
2. (a) Explain multiplexer with suitable diagram.
   1. (b) Describe half adder with neat diagram.
3. (a) Explain the working principle of JK flip-flop.
   1. (b) Describe the working of BCD counter.
4. (a) Explain the shift registers.
   1. (b) Write detail note on Half subtractor.
5. (a) Simplify the following Boolean function in sum of product form by means of 4 variable map. Draw the logic diagram with NAND gates

(0, 2, 8, 9, 10, 11, 14, 15)

* 1. (b) Write about encoder.

1. (a) Explain the design of accumulator logic with control of AC registers, adder and logic unit.
   1. (b) Describe the need for secondary storage devices.
2. (a) Explain various interrupts and their priorities in micro processors.
   1. (b) Describe the different types of RAM.
3. (a) What is I/O interface? Why we need I/O interface? Explain with an example. (10)
   1. (b) Explain the DMA transfer with the necessary diagrams. (10)

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**102**

DE –3330

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

PRINCIPLES OF INFORMATION TECHNOLOGY

(2001 and 2002 Batches)

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All question carry equal marks.

1. (a) Explain the developments in computer Technology with suitable examples. (10)
   1. (b) Explain about connectivity and Interactivity. (10)
2. (a) What are the different types of Application software? Explain. (10)
   1. (b) Explain about GUI. (10)
3. (a) Explain speciality software in detail. (10)
   1. (b) What are the advantages of spread sheets?   
      Explain. (10)
4. (a) What is an Internet? Mention the various features of Internet. (10)
   1. (b) Explain the usage of online information services.   
       (10)
5. (a) What are the various types of communication channels? Explain. (10)
   1. (b) Write notes on :
   2. (i) Modulator and Demodulator. (4)
   3. (ii) Tele commuting. (3)
   4. (iii) Picture phone. (3)
6. (a) Explain about secondary storage devices. (10)
   1. (b) What are the different types of files? Explain. (10)
7. (a) What are the advantages and disadvantages of DBMS? Explain. (10)
   1. (b) Explain about Hard disks and their features. (10)
8. (a) Explain about the five generations of programming languages. (10)
   1. (b) Explain about security issues in detail. (10)

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102

DE–3331

DISTANCE EDUCATION

M.C.A. (Non-Semester) DEGREE EXAMINATION, MAY 2008.

PRINCIPLES OF INFORMATION TECHNOLOGY

(2001–2003 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the evolution in computers and communications.
   1. (b) Explain the six elements of a computer and communication system.
2. (a) Discuss the areas where the application software are used.
   1. (b) Explain in detail about any one of the   
      application s/w.
3. Explain the following :
   1. (a) Video conferencing and picture phones
   2. (b) Online information services.
4. How communication take place by using
   1. (a) Modems and Datacomm software
   2. (b) ISDN lines and cable modems.
5. (a) Explain the following :
   1. (i) C characters. (1)
   2. (ii) Identifiers and keywords. (2)
   3. (iii) Library functions. (3)
   4. (iv) Operators. (5)
   5. (v) Input/output streams. (6)
   6. (b) Discuss about IF and IF...ELSE construction. (3)
6. (a) Explain vectors and points.
   1. (b) Define arrays. Explain the types of arrays in detail.
7. (a) Write a ‘C’ program to add and multiply two given matrices.
   1. (b) Write a ‘‘C’’ program to arrange the numbers in ascending order.
8. Explain the following :
   1. (a) Macros and inline functions.
   2. (b) Pass by value, pass-by-reference.

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**103**

DE–3332 DE–2856

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

C AND DATA STRUCTURES

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

Each question carries equals marks.

1. (a) Explain different data types available in C.
   1. (b) Define Expression. Also discuss any three types of expression with examples.
2. (a) What is recursion? Write a C program to find N! using recursion.
   1. (b) Explain the concept of stack data structures with a programming example.
3. (a) Explain the method of representing two dimensional array in memory. Write a C program to find matrix multiplication.
   1. (b) Explain the procedure for inserting and deleting an item in a QUEUE.
4. (a) Explain the applications of STACK data structures.
   1. (b) Write an algorithm to insert and delete a node in a singular linked list.
5. (a) Discuss :
   1. (i) Sequential Representation of Binary Tree.
   2. (ii) Linked Representation of Binary Tree.
   3. (b) Explain Huffman Algorithm.
6. (a) Explain the terms with examples :
   1. (i) Distinguish between Graph and Tree. (2)
   2. (ii) Complete Binary Tree. (2)
   3. (iii) Binary Search Tree. (6)
   4. (b) What is a game Tree? Explain it with an example.   
       (10)
7. Discuss the following with examples :
   1. (a) Insertion Sort.
   2. (b) Radix Sort.
8. (a) Write an algorithm for the traversal.
   1. (b) Write short notes on Hashing.

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**104**

DE–3333

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

OFFICE AUTOMATION

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the icons of the following : (10)
2. Status bar, Title bar, Menu bar and Tool bar.
   1. (b) Explain the following document operations : (10)
   2. Copy, Un delete, Move and Find.
3. (a) Explain the following picture operations in WORD.   
    Inserting, Moving and Resizing. (6)
   1. (b) (i) Explain the process of page numbering and indenting in WORD. (7)
   2. (ii) Explain various operations on fonts in WORD.   
       (7)
4. (a) How you improve the appearance of worksheet by using functions? (4)
   1. (b) (i) How will you format the texts and numbers in EXCEL. (8)
   2. (ii) How will you create and enhance the chart? (8)
5. (a) How will you change the column width in EXCEL?   
    (6)
   1. (b) Write short notes on the following : Spellchecking in EXCEL and Chart Wizard. (14)
6. (a) How will you create and save a table and also?  
   How will you create a new database? (15)
   1. (b) How will you change the formats of the fields? (5)
7. (a) Describe the following :
8. Autoform and printing reports (10)
   1. (b) Explain in detail about query table. (10)
9. (a) Explain the following operations with suitable examples :
10. Hiding columns, Finding records and sorting records (15)
    1. (b) How will you adjust the column widths? (5)
11. (a) Give any five applications of Office Automation. (5)
    1. (b) Develop a power point presentation to explain about various course offered by your university in details. (15)

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**105**

DE–3334

DISTANCE EDUCATION

M.C.A (NS) DEGREE EXAMINATION, MAY 2008.

DISCRETE MATHEMATICS

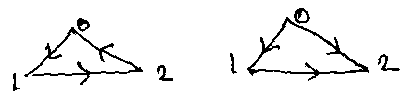
(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Construct the truth table for  Also show that  
2. (b) Obtain the principle disjunctive normal form of  .
3. (a) Show that SVR is tautologically implied by .
4. (b) Symbolize the expression ‘All the world loves a lover’. Also show that 
5. (a) Show that .
6. (b) Let  and
7.  show that *R* is an equivalence relation on *X*. Also draw the graph of R.1 Find  and.
8. (a) Define characteristic function and hence show that
   1. (i)  and
   2. (ii) .
   3. (b) For any commutative monoid , prove that set of idem potent elements of *M* forms a submonoid.
   4. (c) Define semi group Homomorphism and monoid homomorphism.
9. (a) Let  be a finite cyclic group generated by an element  If  is of order *n*, then P.T  so that . Furthermore , *n* is the least positive integer for which .
10. (b) State and prove Lagrange’s theorem
11. (a) Show that every finite group of order *n* is isomorphic to a permutation of degree *n*.
12. (b) Let *g* be a homomorphism from a group  to a group  and let *K* be the kernel of *g* and be the image set of *g* in *H*.P.T  is isomorphic to .
13. (a) Define kernel of a homomorphism and show that kernel of a homomorphism *g* from a group  to  is a subgroup of .
    1. (b) Show that the intersection of two normal subgroups is a normal subgroup.
14. (a) Define isomorphism between graphs and test the isomorphism property between the two graphs:



* 1. (b) Show that the sum of indegrees of all the nodes of a simple digraph is equal to the sum of out degrees of all its nodes and this sum is equal to the number of edges of the graph.
  2. (c) In a simple graph *G*, show that every node of the digraph lies in exactly one strong component.

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**108**

DE–3335

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

OBJECT ORIENTED PROGRAMMING AND C++

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the following.
   1. (i) Objects, classes and
   2. (ii) Polymorphism
   3. (b) List out the features of object oriented programming. (10)
2. (a) Explain the use of Cin and Count with examples.
   1. (b) Discuss in detail the role of the constructor and brief to about dynamic initialization of objects.
3. (a) Describe about the various control structures in C++. Give examples. (10)
   1. (b) State the unique features of C++ function and differentiate call by value and call by reference. (10)
4. (a) Define a class matrix and implement the matrix addition, subtraction and multiplication by using operator overloading. (15)
   1. (b) Write a note on variable pointers. (5)
5. (a) What is type conversion? Explain.
   1. (b) Explain about unformatted I/O operations used in C++ Programs.
6. Define Inheritance. Explain how inheritance can be used in reusing code. (20)
7. (a) Discuss how binary operators are overloaded in C++. (10)
   1. (b) Discuss in detail the various class access specifiers.   
       (10)
8. Write a brief note on the following
   1. (a) Streams
   2. (b) Virtual functions
   3. (c) Reference variables and
   4. (d) Super class. (5+5+5+5)

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**109**

DE–3336

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

First Year

COMPUTER GRAPHICS

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the functions of input used in computer graphics system. (10)
   1. (b) Explain any two output devices used in computer graphics system. (10)
2. (a) Explain the Brsenhaum’s circle generation algorithm. (10)
   1. (b) Discuss region filling technique. (10)
3. (a) Discuss the two dimensional transformation principles and their matrix representations. (10)
   1. (b) Explain briefly about the SUTHERLAND Hodgeman algorithm. (10)
4. (a) Derive the window to viewport transformation. (10)
   1. (b) Discuss convex ploygon clipping algorithm. (10)
5. (a) Explain the transformation matrices for all possible transformation in 3D graphics. (10)
   1. (b) Explain briefly the HIDDEN Surface algorithm. (10)
6. (a) Discuss the three dimensional clipping. (10)
   1. (b) Explain the Z–buffer algorithm. (10)
7. (a) What are the components of user interface? (10)
   1. (b) Explain the style of command language. (10)
8. Explain about the following. (2 × 10 = 20)
   1. (a) Windows
   2. (b) Viewports

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**110**

DE–3337

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

DESIGN AND ANALYSIS OF ALGORITHM

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) How will you determine the space and time complexity of an Algorithm? Also explain program testing methods. (10)
   1. (b) Discuss the different models of Networks. (10)
2. (a) Explain the program correctness using the knight’s four in chess game. (10)
   1. (b) Explain the structured programming by defining flow chart. (10)
3. (a) Explain the concept of Recursion and how it greatly simplify the logical structure of many algorithm. (10)
   1. (b) Discuss the probalistic model and performance analysis of stright insertion sort with example. (10)
4. (a) Explain the properties of Heuristic Algorithm with an example. (10)
   1. (b) Discuss the backtrack programming technique by Bicycle lock problem. (10)
5. (a) How do you formulate Branch and bound algorithm for the problem of travelling sales man for five city network.  
    (10)
   1. (b) Design a recursive procedure for fibonacci series and analyse your algorithm. (10)
6. (a) Explain the role of Ackermann’s function in Recursion with example. (10)
   1. (b) Discuss the Breadth – first searching – algorithm in detail. (10)
7. (a) Discuss the single queue – single server problem in detail.
   1. (b) Explain quick sort performance algorithm.
8. (a) Write a note on :
   1. (i) Binary tree search and
   2. (ii) Adjacency list. (13)
   3. (b) Discuss about isomorphism. (7)

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111

DE–3338

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

ACCOUNTING AND FINANCIAL MANAGEMENT

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Discuss the various ways of classification of costs.
2. What is budget? Explain briefly the salient features of sales budget and productions budget.
3. The following transactions occur in the purchase and issue of a material :

|  |  |
| --- | --- |
| 2005 Jan. 1 | Opening balance 500 units @ Rs. 4 |
| Jan. 4 | Issued 200 units |
| Jan. 5 | Received 200 units @ Rs. 4.25 |
| Jan. 12 | Received 150 units @ Rs. 4.10 |
| Jan. 15 | Issued100 units |
| Jan. 19 | Issued 100 units |
| Jan. 20 | Received 300 units @ Rs. 4.50 |
| Jan. 26 | Issued 200 units |
| Jan. 30 | Issued 250 units |

* 1. From the above, prepare stores ledger account by adopting FIFO method.

1. With the following ratios and further information given below, prepare the balance sheet of X Ltd. which has only one class of share capital.
   1. (a) Sales for the year — Rs. 20,00,000
   2. (b) Gross profit ratio — 25%
   3. (c) Current ratio — 1.5
   4. (d) Quick assets (cash and debtors) ratio — 1.25
   5. (e) Stock turnover ratio — 15 times
   6. (f) Debts collection period — 1 months
   7. (g) Turnover to fixed assets — 1.5
   8. (h) Ratio of Reserve the Share Capital — 0.33 (i.e. 1/3)
   9. (i) Fixed assets to Net worth — 0.83 (i.e., 5/6).
   10. (The term ‘‘turnover’’ refers to cost of sales and the term ‘‘stock’’ to closing stock).
2. From the following balance sheet of A Ltd. on 31st December 2002 and 2003 you are required to prepare a fund flow statement :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Liabilities | 2002 |  | 2003 | Assts | 2002 |  | 2003 |
|  | Rs. |  | Rs. |  | Rs. |  | Rs. |
| Share capital | 1,00,000 |  | 1,00,000 | Goodwill | 12,000 |  | 12,000 |
| General reserve | 14,000 |  | 18,000 | Buildings | 40,000 |  | 36,000 |
| Profit and loss a/c | 16,000 |  | 13,000 | Plant | 37,000 |  | 36,000 |
| Sundry creditors | 8,000 |  | 5,400 | Investments | 10,000 |  | 11,000 |
| Bills payable | 1,200 |  | 800 | Stock | 30,000 |  | 23,400 |
| Provision for |  |  |  | Bills receivable | 2,000 |  | 3,200 |
| taxation | 16,000 |  | 18,000 | Debtors | 18,000 |  | 19,000 |
| Provision for |  |  |  | Cash | 6,600 |  | 15,200 |
| doubtful debts | 400 |  | 600 |  |  |  |  |
|  | 1,55,600 |  | 1,55,800 |  | 1,55,600 |  | 1,55,800 |

* 1. The following additional information are also given :
  2. (a) Depreciation charged on plant was Rs. 4,000 and on building Rs. 4,000.
  3. (b) Provision for taxation of Rs. 19,000 was made during the year 2003.
  4. (c) Interim dividend of Rs. 8,000 was paid during the year 2003.

1. From the following particulars of Mr. Kannan, prepare trading and profit and loss Account and balance sheet for the year ended 31st March 2004 :

|  |  |  |  |
| --- | --- | --- | --- |
| Particulars | Rs. | Particulars | Rs. |
| Capital | 1,50,000 | Sales | 1,50,000 |
| Cash | 8,000 | Carriage | 1,000 |
| Building | 80,000 | Fuel, gas | 3,800 |
| Wages | 12,000 | Sundry debtors | 50,000 |
| Salary | 10,000 | Sundry creditors | 23,200 |
| Rent and taxes | 1,600 | Sales return | 3,600 |
| Printing and stationery | 1,400 | Purchase return | 3,000 |
| Stock 1.4.2003 | 24,000 | Bills receivable | 4,000 |
| Insurance premium | 1,200 | Advertisement | 3,200 |
| Machinery | 24,000 | Dividend | 1,600 |
| Drawings | 8,000 | Furniture | 4,000 |
| Purchases | 1,00,000 | Loan (Cr.) | 12,000 |

* 1. Adjustments :
  2. (a) Closing stock was valued at Rs. 28,000.
  3. (b) Write off Rs. 2,000 as bad debts, provide 5% for bad and doubtful debts. Make provisions for discount on debtors   
     at 2%.
  4. (c) Provision for discount on creditors at 2%.

1. Larsen Ltd., plans to sell 1,10,000 units of a certain product line in the first fiscal quarter, 1,20,000 units in the second quarter, 1,30,000 unit in the third quarter and 1,50,000 units in the fourth quarter and 1,40,000 units in the first quarter of the following year. At the beginning of the first quarter of the current year, there are 14,000 units of product in stock. At the end of each quarter, the company plans to have an inventory equal to one-fifth of sales for the next fiscal quarter.
   1. How many units must be manufactured in each quarter of the current year?
2. Assuming that the cost structure and selling prices remain the same in Period I and Period II :

|  |  |  |
| --- | --- | --- |
| Period | Sales | Profit |
|  | Rs. | Rs. |
| I | 1,20,000 | 9,000 |
| II | 1,40,000 | 13,000 |

* 1. Calculate :
  2. (a) P/V ratio
  3. (b) B.E. sales
  4. (c) Profit when sales are Rs. 1,00,000
  5. (d) Sales required to earn a profit of Rs. 20,000
  6. (e) Margin of safety in II period.

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**112**

DE–3339

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

COMMUNICATION SKILLS

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Distinguish between inter personal and intra personal communication.
2. How can you develop your reading skills?
3. How can you plan for interviews? How can you communicate effectively during interviews?
4. Write an essay on the art of guiding and controlling discussion.
5. Write an essay on ‘body language’.
6. What are the different types of negotiation techniques?
7. What is the importance of convening meetings? How can you lead and participate in meetings?
8. Write short notes on the following :
   1. (a) Seminars
   2. (b) Mock Group Discussion
   3. (c) Mock Negotiation

(d) Lateral thinking.

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**201**

DE-3340

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

RESOURCE MANAGEMENT TECHNIQUES

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) A firm manufactures 3 products A, B and C. The profits per unit sold of each product are Rs. 3, Rs. 2 and Rs. 4 respectively. The time required to manufacture one unit of each of the three products and the daily capacity of two machines D and E is given below :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Time per unit (minutes) | | | Machine capacity | |
|  | Product | | | (Minutes/day) | |
|  |  | A | B | C |  |
|  | D | 4 | 3 | 5 | 2000 |
| Machine | E | 2 | 2 | 4 | 2500 |

* 1. It is required to determine the daily number of units to be manufactured for each product. However the firm must manufacture at least 100 A's 200 B's and 50' C's but not more than 150 A's. It is assumed that all the amounts produced are consumed in the market.
  2. (b) Solve graphically the following L.P.P. :
  3. Maximize 
  4. 

1. (a) Explain ‘‘the principal characteristics of queue’’.
   1. (b) A T.V. repairman finds that the time spent on his job has an exponential distribution with mean 30 minutes. If he repairs sets in the order in which they come in, and if the arrival of sets is approximately Poisson with an average rate of 10 per 8 hour day, how many jobs are ahead of the average set just bought in.
2. (a) What do you meant by ‘Monte Carlo Simulation’? Explain its applications and uses.
   1. (b) The following data is observed in a Tea Serving Counter. The arrival is for one minute interval :

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. of person arriving : | 0 | 1 | 2 | 3 | 4 | 5 |
| Probability : | 5% | 15% | 40% | 20% | 15% | 5% |

* 1. The service is taken as 2 persons for one minute. Using the following random numbers simulate for 15 minutes.
  2. Period : 09, 54, 94, 01, 80, 20, 73, 26, 90, 76, 25, 48, 99, 25, 03.
  3. Also calculate the average number of persons waiting in the queue.

1. (a) What are various inventory costs involved in inventory problem. Explain.
   1. (b) The manufacturer has to supply his customer 600 units of his product per year. Shortages are not allowed and the inventory carrying cost amounts to Rs. 0.60 per unit per year. The set up cost per run is Rs. 80. Find
   2. (i) E.O.Q.
   3. (ii) The minimum average yearly cost
   4. (iii) The optimum number of orders per year
   5. (iv) The optimum period of supply per optimum order.
2. (a) Write a detail note on ‘‘Fulkerson's rule’’.
   1. (b) A project schedule has the following :

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Activity : | 1–2 | 1–4 | 1–7 | 2–3 | 3–6 | 4–5 | 4–8 | 5–6 | 6–9 | 7–8 | 8–9 |
| Time : | 2 | 2 | 1 | 4 | 1 | 5 | 8 | 4 | 3 | 3 | 5 |

* 1. Construct a Network and find critical path and total slack for each activity.

1. (a) Discuss briefly the various types of replacement problems.
   1. (b) The cost of a machine is Rs. 6,100 and its scrap value is only Rs. 100. The maintenance cost are found from experience to be :

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Maintenance cost : | 100 | 250 | 400 | 600 | 900 | 1250 | 1600 | 2000 |

* 1. When the machine should be replaced?

1. (a) Determine an initial basic feasible solution (IBFS) to the following by Vogel's approximation method (VAM)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Destination | | | | | |
| Origin | A1 | B1 | C1 | D1 | E1 | Supply |
| A | 2 | 11 | 10 | 3 | 7 | 4 |
| B | 1 | 4 | 7 | 2 | 1 | 8 |
| C | 3 | 9 | 4 | 8 | 12 | 9 |
| Demand | 3 | 3 | 4 | 5 | 6 | 21 |

* 1. (b) Write a brief note on ‘‘M/M/I-queue’’ and its parameters.

1. (a) Explain a detail procedure on ‘‘Generation of random variables by using uniform distribution’’.
   1. (b) Explain the iterative procedure of determining the critical path and the slack with an example.

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**202**

DE–3341

DISTANCE EDUCATION

M.C.A.(NS) DEGREE EXAMINATION, MAY 2008.

OPERATING SYSTEMS

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

(5 × 20 = 100)

1. (a) Discuss briefly the major functions of an operating system? (10)
   1. (b) Discuss the various proposals for achieving mutual exclusion with busy waiting. (10)
2. (a) Discuss the various process states. (5)
   1. (b) Discuss the scheduling techniques adopted in two level scheduling shortest job first and Round ROBIN CPU scheduling algorithms. (15)
3. (a) Discuss the Banker's algorithm to avoid dead locks.   
    (10)
   1. (b) Discuss the various functions of device independent I/O software. (10)
4. (a) Discuss the way to manage memory using linked list. (8)
   1. (b) Discuss any five page replacement algorithms. (12)
5. (a) A computer system has enough room to hold four programs in its main memory. These programs are idle waiting for I/O half the time. What fraction of the CPU time is wasted?   
   Also compare segmentation and paging. (10)
   1. (b) What do you mean by Belady's anomaly? Discuss page replacement algorithm will never suffer from Belady's anomaly. (10)
6. (a) Explain the contents of page table. (8)
   1. (b) Write short notes on
   2. (i) Thrashing.
   3. (ii) Virtual memory.
   4. (iii) Critical sections.
   5. (iv) File system reliability. (12)
7. (a) Discuss single and multiple partitions memory allocation schemes and their advantages and disadvantages.   
    (10)
   1. (b) Discuss 'Deadlock prevention'. (10)
8. (a) Write short notes on
   1. (i) Viruses.
   2. (ii) File types.
   3. (iii) File Attributes. (10)
   4. (b) Discuss any two file protection mechanism. (10)

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**203**

DE–3342

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

RDBMS

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

1. (a) Write short notes on schema and subschema. (10)
   1. (b) What are the advantages of Database systems compared to file processing systems? (10)
2. (a) Explain the operations of DML. (10)
   1. (b) Explain the concept of Normalisation with examples. (10)
3. (a) Explain the concepts of a relational model. (10)
   1. (b) Explain various mapping operations with proper illustrations. (10)
4. (a) Explain different types of Databases. (10)
   1. (b) What is Client/Server system? Explain its advantages over traditional architectures. (10)
5. (a) Explain Data manipulation facilities and Data control facilities in Relational model. (10)
   1. (b) Explain the Database objects with example. (10)
6. (a) Explain unions and Multiple-Part queries, subqueries with example. (10)
   1. (b) Explain the concept of joining multiple tables in a query. (10)
7. (a) Explain the advantages of Database objects. (10)
   1. (b) Explain briefly on Embedded SQL statements. (10)
8. (a) Discuss briefly on the Data types used in ORACLE.   
    (10)
   1. (b) Explain STORAGE clause and other storage parameters used with CREATE TABLE statement. (10)

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**204**

DE–3343

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

UNIX AND SHELL PROGRAMMING

(2001 onwards)

Time : Three hours Maximum : 100 marks

All questions carry equal marks.

Answer any FIVE questions.

1. (a) Explain the structure of Inode table for the unix file system. (10)
   1. (b) Discuss the use of I/O redirection and pipes in unix.  
       (10)
2. (a) Discuss about the Unix command line arguments.   
    (5)
   1. (b) Explain the ‘‘awk’’ with all its functions. (15)
3. (a) Write a shell program to get the month by name and convert into numbers using case statement in Unix and Explain. (10)
   1. (b) Discuss the different loop statements in Unix. (10)
4. (a) Explain in detail the use of various standard I/O function. (10)
   1. (b) How will you set permissions for owner group? (10)
5. (a) Discuss the implementation of a four function calculator in Unix. (10)
   1. (b) Discuss the process of defining variables for a program and error recovery. (10)
6. (a) Explain the text file manipulation in Unix. (10)
   1. (b) Explain any two document preparation tool. (10)
7. (a) Explain the procedure of handling signals and interrupts. (10)
   1. (b) Write a note on ;
   2. (i) get and put (5)
   3. (ii) standard string function. (5)
8. (a) Explain the feature of ‘Tbl’ and ‘eqn’ preprocessor.  
    (10)
   1. (b) Explain the ‘mail’ and ‘write’ commands with its different flags. (10)

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**205**

DE–3344

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

COMPUTER NETWORKS

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. (a) Describe the uses of a computer network.
   1. (b) Describe the different types of transmission media.
2. (a) Describe the design issues of data link layer.
   1. (b) Write about SLIP and PPP.
3. (a) Explain the congestion control algorithm.
   1. (b) Discuss about fragmentation.
4. (a) Describe the network layer in ATM Networks.
   1. (b) Describe the address resolution protocol.
5. (a) Describe the elements of Transport protocol.
   1. (b) Explain the protocols for Gigabit Networks.
6. (a) Explain the need for cryptography.
   1. (b) Give a note on Electronic mail privacy.
7. (a) Discuss about MPEG standards.
   1. (b) How can you measure the performance of Network? Explain.
8. (a) Describe the OSI Reference model with neat diagram.
   1. (b) Write short notes on :
   2. (i) Crash Recovery.
   3. (ii) DNS.
9. ————————

DE–3345

**208**

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

SIMULATION AND MODELING

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) What is meant by aircraft system? Also how the factory system responds to environmental changes. (6)
   1. (b) What is the use of guiding principle? Explain any three of them. (2 + 12)
2. (a) What do you mean by continuous and discrete system? (4)
   1. (b) Describe in detail the types of system simulation models. (16)
3. (a) Explain continuous system and describe the attribute changes for a model consists of differential equation.
   1. (b) Discuss about Real time simulation.
4. (a) Discuss about modified Exponential Growth models.
   1. (b) Explain briefly about the Logistic curves.
5. (a) Explain about Pseudo-random number generator.
   1. (b) Discuss about the method for generating rejection method using probability density function.
6. (a) What is delay distribution?
   1. (b) Describe the various queuing disciplines and measuring factors of queuing.
7. (a) Write the features of simulation languages.
   1. (b) What is meant by delayed calls?
8. (a) What do you mean by facilities and storages?
   1. (b) Explain the SIMSCRIPT system concepts in detail.

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**209**

DE–3346

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

OBJECT ORIENTED ANALYSIS AND DESIGN

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Describe in detail the evolution of object model. (10)
   1. (b) Explain the elements of object model. (10)
2. (a) Explain the key abstraction mechanism.
   1. (b) Describe the various ways of identifying proper classes and objects. (10)
3. (a) What are usecases? What are the guidelines for finding and naming usecases? (10)
   1. (b) Explain the features of VML model. (10)
4. (a) State the purpose of analysis and design. (10)
   1. (b) Give an overview of the view process. (10)
5. Explain the various aspects of VML class diagram. (20)
6. Explain the following interaction diagrams
   1. (a) Sequence diagram (10)
   2. (b) Collaboration diagram. (10)
7. (a) What are patterns? (5)
   1. (b) Explain how classes are identified using common class patterns. (15)
8. Explain with example :
   1. (a) Package diagram (10)
   2. (b) Interaction diagram. (10)

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**210**

DE–3347

DISTANCE EDUCATION

M.C.A.(N.S) DEGREE EXAMINATION, MAY 2008.

INTERNET PROGRAMMING

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) What is WWW? What are the design issues of WWW?

(b) What is meant by Encryption? Explain the role of encryption in Internet applications.

1. (a) What is CGI? Explain GET and POST request methods.

(b) Explain the features of JAVA.

1. (a) Explain the method of creating and using packages in Java.

(b) Explain system defined functions in JavaScript.

1. (a) Explain the method of creating user interface using AWT.

(b) Explain any two browsers available.

1. (a) Explain the relationship between SGML and HTML.

(b) Discuss VDOLive technology.

1. (a) Explain the method of creating a custom integrated application with multiple protocols.

(b) Explain HTML tags used for table creation with example.

1. (a) Write a HTML Script to perform image animation.
   1. (b) What is the significance of using <DIV> tag? Explain with example.
2. (a) Explain the elements of web page in detail.
   1. (b) Explain the method of creating Netscape Navigator Plug–Ins.

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**211**

DE–3348

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

SOFTWARE ENGINEERING

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain linear sequential model, prototyping model. (10)
   1. (b) Discuss briefly about real model and software process model. (10)
2. (a) Explain various project metric in detail. (10)
   1. (b) How to estimate software scope and resources? (10)
3. (a) Explain empirical estimation model. (10)
   1. (b) Explain how to identify software risks. (10)
4. (a) Explain about software quality assurance. (10)
   1. (b) Discuss about software reviews. (10)
5. (a) What is requirements analysis? Explain. (10)
   1. (b) Explain about various communication technique.   
       (10)
6. (a) Explain architectural design. (10)
   1. (b) Explain about interface design. (10)
7. Explain about :
   1. (a) White box testing and Black box testing. (10)
   2. (b) Client server testing and GUI testing. (10)
8. (a) Explain various testing strategies. (10)
   1. (b) Discuss about validation techniques. (10)

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**212**

DE–3349

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

VISUAL PROGRAMMING

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Write short notes on windows programming. (5)
   1. (b) Explain briefly about windows messages also explain document interfaces and DLL in windows. (15)
2. (a) Bring out the advantages of Event-driven programming. (5)
   1. (b) Write any five properties of data control also explain various decision making facility available in Visual Basic. (15)
3. (a) Write and explain any ten controls available in Toolbox. (10)
   1. (b) Write a VB program to retrieve data from student table using a Data control. Explain. (10)
4. (a) Explain briefly about the document view architecture. (10)
   1. (b) Discuss MFC file handling in detail. (10)
5. (a) Write short notes on the following.
   1. Dialog boxes and Record set objects. (10)
   2. (b) Explain VC ++ components. (10)
6. (a) What is an exception? How it is handled in VC++?   
    (10)
   1. (b) Explain in detail about serialization in VC++. (10)
7. (a) Discuss briefly about the importing of VBX controls. (10)
   1. (b) Explain about database application in VC++. (10)
8. Write short notes on :
   1. (a) Software Development Kit (SDK) and VC++ Resources. (5)
   2. (b) Multiple Document Interface (MDI) and OLE in   
      VC ++. (15)

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**301**

DE–3350

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

SOFTWARE PROJECT MANAGEMENT

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) What is a project?
   1. (b) Explain in detail about the software development process.
2. (a) Explain the attributes of successful leader.
   1. (b) Explain the types of Activity relationship.
3. (a) Explain about the bottom-up planning.
   1. (b) Discuss about the initial project schedule plan.
4. (a) Discuss the rules for tracking meetings.
   1. (b) Discuss about the recovery plans.
5. (a) Explain about function testing?
   1. (b) Discuss about the product requirements.
6. Discuss about project progress and the role of escalation.
7. (a) Who is a vendor? Explain about the vendor relationships.
   1. (b) Describe the performance – incentives.
8. (a) Explain about the post project review?
   1. (b) Discuss about
   2. (i) Legal considerations
   3. (ii) Product certification.

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**302**

DE–3351

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

CLIENT SERVER TECHNOLOGY

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain about centric client/server computing. (10)
   1. (b) What are the advantages of client/server computing? Explain. (10)
2. (a) What are the tools used to build-up client/server systems? Explain. (10)
   1. (b) Explain Windows NT Operating System used for servers. (10)
3. (a) Discuss any three services provided by client-server technology. (10)
   1. (b) Describe communication interface technology. (10)
4. (a) Describe the components of client/server architecture. (10)
   1. (b) Discuss about LAN manager. (10)
5. (a) What do you mean by reengineering of existing systems? Discuss. (10)
   1. (b) Explain the various issues in the development of client/server software. (10)
6. (a) Describe the evolution of Web Client/server systems. (14)
   1. (b) Describe the importance of distributed object. (6)
7. (a) Explain about distributed objects and components.   
    (10)
   1. (b) Discuss on workbench architecture. (10)
8. (a) Write short notes on SQL Tool set and power builder. (10)
   1. (b) Describe the GUI front end tools. (10)

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DE–3352

**303**

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

PATTERN RECOGNITION AND IMAGE PROCESSING

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the Human vision system.
   1. (b) How is image captured using video capture?
2. (a) Explain how image is presented using Raster screen and Printers.
   1. (b) How is an image transformed into Grey level image? Explain with an example.
3. (a) Define the term morphology. Explain opening and closing morphology operations.
   1. (b) Explain about Basic edge detection and Crack edge detection.
4. (a) What is Image compression? Explain Spatial compression.
   1. (b) Describe Image standards.
5. (a) Explain the basic concept of pattern recognition.
   1. (b) Write note on a methodology of pattern recognition.
6. (a) Explain decision functions with suitable examples.
   1. (b) Describe the implementation procedure for Generalised decision functions.
7. (a) Write note on :
   1. (i) Pattern classification by distance function.
   2. (ii) Minimum distance pattern classification.
   3. (b) Explain :
   4. (i) Unsupervised pattern recognition.
   5. (ii) Pattern classification by likelihood functions.
8. (a) Explain formal language with suitable example.
   1. (b) Explain application of Baye’s theorem to syntactic pattern.

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**304**

DE–3353

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

COMPILER DESIGN

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the structure of a compiler. (10)
   1. (b) Explain context and ambiguous grammer with an example. (10)
2. (a) Construct the minimal DFA for the regular expression . (10)
   1. (b) Define parse trees and derive . (10)
3. (a) Explain the ambiguity with proper examples. (10)
   1. (b) Write a short note on the data structures of symbol tables. (10)
4. (a) Write the algorithm for operator precedence parsing. (10)
   1. (b) Explain the storage allocation in unstructured languages. (10)
5. (a) Define syntax tree. Explain construction of syntax tree with example. (10)
   1. (b) Explain the linear list hash table and symbol table mechanism with examples. (10)
6. (a) How can you classify errors? Discuss any four errors in detail with example. (12)
   1. (b) Explain error recovery mechanisms. (8)
7. (a) Explain the translation of assignment statements.   
    (17)
   1. (b) What do you mean postfix translations? (3)
8. (a) Explain in detail about the principal source of optimizaiton. (10)
   1. (b) Discuss the problems in code generation. Also discuss about peephole optimization. (10)

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**305**

DE–3354

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

MULTIMEDIA SYSTEMS

(2001 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.  
 (5 × 20 = 100)

1. (a) What is Multimedia? Explain its advantages.
   1. (b) Explain Multimedia standards.
2. (a) Explain the Graphics, Animation.
   1. (b) Write down various real world media applications.
3. (a) Explain how a compression system can be evaluated.
   1. (b) Explain MPEG file format.
4. (a) Explain video compression techniques.
   1. (b) JPEG format of a image.
5. (a) Explain Image compression standards.
   1. (b) Explain the audio and its prints.
6. (a) What are the hardware components required for Multimedia? Explain.
   1. (b) Discuss media classes, transform classes in object oriented multimedia.
7. (a) Write short notes on Speech Audio.
   1. (b) Write short notes on Media organization.
8. (a) Explain the CD family in detail.
   1. (b) Discuss the advantages of Object Oriented Multimedia.

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**106**

DE–3636

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

LAB – I : DATA STRUCTURES USING ‘C’

(2001 and 2002 Batches)

(Up to 2004)

Time : Three hours Maximum : 100 marks

Examiners has to choose and give ONE question for each candidate by LOT system.

Each question carries 100 marks.

Cut here

1. Write a C program to perform the following operations in Linear Array
   1. (a) To Insert an element at a specific position.
   2. (b) To Delete an element
   3. (c) To Traverse the elements.
2. Write a menu driven C program to perform the following operations in a STACK

Cut here

* 1. (a) To add an element
  2. (b) To delete an elements
  3. (c) To display the contents of STACK
  4. (d) To check the OVERFLOW condition
  5. (e) To check the UNDERFLOW condition

1. (a) Write a C program to read the values for the elements of one dimensional array of integers of size N and then use binary search technique to locate a particular number.
   1. (b) Write a C program to sort the elements using Selection Sort Technique.

Cut here

1. (a) Write a C program to search an element using binary search method. (Use recursive function)
   1. (b) Write a C program to sort the numbers using Bubble Sort Technique.
2. Write a C program to convert the given Infix Expression into Postfix Expression.

Cut here

* 1. (Input : A + B / C Output : ABC/+ )

1. Write a C program to create a binary tree and print the pre-order binary tree traversal.

Cut here

Cut here

1. Write a C program to perform the following operations in a Singly Linked List :
   1. (a) To insert a node at the beginning of the list.
   2. (b) To delete the last node from a list.

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**107**

DE–3637

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB II — MS-OFFICE

(2001 and 2002 Batches)

(upto 2004)

Time : Three hours Maximum : 100 marks

* 1. Instruction : Examiner should select and give   
      ONE question to each candidate by a lot   
      system.

Cut here

1. (a) MS-Word : Prepare the first page of MCA practical record note book with picture insertion and alignment.
   1. (b) Create the following Inventory work sheet is   
      MS-Excel :
   2. Item No.| Name| Price| Quantity| Stock| Reorder| Purchased | Issued | Quantity on hand
   3. (i) Enter all the data items except quantity on hand for 10 items.
   4. (ii) Find quantity on hand using
   5. Stock = Quantity on hand + Quantity purchased – Quantity issued
   6. Find total stock value is inventory as a product of total quantity hand and total price . Display all the items in red color whose quantity in hand is below reorder level.
2. (a) MS-Word : Prepare a news report using two columns, insert a picture in the first column and make the text flow around it.
   1. (b) Create a work sheet is MS-Excel with following columns :
   2. Employee No., Name, Designation, Basic pay, HRA, DA, LIC, PF, Gross pay, Net pay.
   3. (i) Type data for emp no., name, designation, basic pay and LIC, PF
   4. (ii) Calculate : HRA – 20% of basic pay
   5. DA – 30% of basic pay
   6. Gross pay – Basic + HRA + DA
   7. Net pay – Gross pay – (LIC + PF)
   8. (iii) Draw the bar chart between emp. name and net pay
   9. (iv) Sort the designation column and employee column name at a time.

Cut here

1. (a) MS-Word : Type lecture notes and prepare audio explanation with the help of sound files.
   1. (b) Create a work sheet is MS-Excel with the following columns :
   2. Sales man no., Name, City, Product­\_name,   
      Sale amount
   3. Add three records for 5 different salesmen who have carried out sales of different products is different cities.   
      Find the following :
   4. (i) City wise total sales
   5. (ii) Salesman wise total sales
   6. (iii) Product wise total sales
   7. (iv) Grand total sales.
2. (a) MS-Word : Prepare an initiation for a function to be conducted in your institution. Use different text orientation and pictures to make it attractive.
   1. (b) MS–Access : Create employee table with fields,   
      emp. no, name, age, sex, address, city, pin, salary.
   2. (i) Add data for 20 employees.
   3. (ii) Write a query to display all the male employees whose salary is between 1000 and 5000 and living in city ‘‘CHENNAI’’.
   4. (iii) Write a query to display all the female employees whose ages are in the range 30 to 40.
   5. (iv) Show all the records in the table for the city ‘‘ERODE’’ by filtering.

Cut here

1. (a) MS-Word :
   1. Create a form letter that informs the customer about the date of maturity of a deposit amount in a commercial bank and request the customer for renewal. Mail merge it with a database containing all the customer data. Prepare letters for customers whose due date falls in a specific range of dates.
   2. (b) MS-Access :
   3. Create student table with the following fields :
   4. Reg. No., Name, Mark 1, Mark 2, Mark 3 create address table with fields :
   5. Reg. No., street, city, pin.
   6. (i) Write a query to display reg. no., name and total of all the three subject marks.
   7. (ii) Write a query to display reg. no., name, street, city, pin and total of all the three subject marks.
2. (a) MS-Word :
   1. Create a table of student data that contains   
      Reg. no., Name, English, Tamil, and Maths marks. Add a new column named total and find the row total for each student.
   2. Add two rows named total, average. Find the total and average values for each subject mark. Convert the table to text.
   3. (b) MS-Access :
   4. Create inventory table with fields item no., name, quantity on hand, reorder level.
   5. (i) Create a form in custom format
   6. (ii) Create a query reorder to show all the items
   7. (iii) Create a macro that executes Reorder query automatically.

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**113**

DE–3638

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB III — GRAPHICS USING C++

(2001 and 2002 Batches)

(upto 2004)

Time : Three hours Maximum : 100 marks

Select ONE question from EIGHT.

Each question carries 2 subdivisions.

Cut here

1. (a) Write a C++ program to display a line segment using Bresenham's method. Compare the result with true line.
   1. (b) Write a C++ program to display a quadrant of an ellipse.

Cut here

1. (a) Write a C++ program to display a circle using polar co-ordinates.
   1. (b) Write a C++ program to display a triangle and reflect it on X–axis.

Cut here

1. (a) Write a C++ program to clip a line segment with windows transformations.
   1. (b) Write a C++ program to draw a ball. Apply animation as it.
2. (a) Write a C++ program to project a cube on   
    plane.
   1. (b) Write a C++ program to rotate a square 45° to the left direction.

Cut here

1. (a) Write a C++ program to model a computer system. Use readymade commands to sketch the object.
   1. (b) Write a C++ program to sketch the arc of   
      3rd quadrant of a circle.

Cut here

1. (a) Write a C++ program to clip a line segment with windows. Show the effect before and after clipping.
   1. (b) Write a C++ program to project a cylindrical object on  plane.

Cut here

1. (a) Write a C++ program to display the portais of an object which is out of window capturing the image.
   1. (b) Write a C++ program to display line segment which pass through . Given 10 pairs of points.

Cut here

1. (a) Write a C++ program to implement scaling as an object.
   1. (b) Write a C++ program to rotate an object   
      180° clockwise.

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**114**

DE–3639

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

LAB IV — ALGORITHMS

(2001 and 2002 Batches)

(upto 2004)

Time : Three hours Maximum : 100 marks

Answer ONE question (Subdivisions (a) and (b)).

Each division carries 50 marks.

Algorithms, Flow chart and C code are to be written.

Cut here

1. (a) Write a C program to solve 8-Queen problem.
   1. (b) Write a program in C to search a string in a set of strings.

Cut here

1. (a) Write a C program to create a sorted circular singly linked list with a healer node.
   1. (b) Write a C program to solve Towers of Hanoi problem.

Cut here

1. (a) Write a C program to build a binary search tree and delete a node from it.
   1. (b) Write a C program to search an element from an array using linear search technique.
2. (a) Write a C program to sort the given set of numbers using exchange sort.
   1. (b) Write a program in C to create a doubly linked list and perform the insertion operation.

Cut here

1. (a) Write a C program to perform linear search technique.
   1. (b) Write a C program to find all possible roots of a quadratic equation .

Cut here

1. (a) Write a C program to implement stack and perform push, pop operations.
   1. (b) Write a C program to implement queue using   
      linked list.

Cut here

1. (a) Write a program to create a linked list and insert a node in the middle.
   1. (b) Write a C program to find the transpose of an  matrix.

Cut here

1. (a) Write a C program to solve a set of simultaneous linear equations.
   1. (b) Write a C program to implement merge sort algorithm.

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**106**

DE–3640

DISTANCE EDUCATION

M.C.A (N.S) DEGREE EXAMINATION, MAY 2008.

LAB I — DATA STRUCTURES USING C AND MS–OFFICE

(2003 and 2004 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Answer any TWO questions, choosing ONE from DATA STRUCTURE and another from MS–OFFICE

DATA STRUCTURE

1. Write a C program to create a magic square.
2. Write a C program to implement linked stack operations.
3. Write a C program to convert the given infix expression to postfix expression.
4. Write a C program to sort the given numbers using quick sort method.
5. Write a C program to implement binary tree using linked list

MS – OFFICE

1. Add following data for 10 salesmans and create different charts in Excel.

sales in

Emp.No Name 2001 2002 2003 2004

1. Create the following table of figures [for 10 years] and find total for each column in word.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Sales | Expenses | Profit |
| 1990 | 20,000 | 10,000 | 10,000 |
| . |  |  |  |
| . |  |  |  |
| 1999 | ... | .... | ..... |

1. Create a table as shown below, in Excel for simple interest calculation, varying years from 1to 10. & rate of interest from 20% to 8%. Keeping the principal amount at   
   Rs 10,000/-

Interest table for Rs. 10,000

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2% | 3% | 4% | 5% | 6% | 7% | 8% |
| 1 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| 2 | 400 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |
| . |  |  |  |  |  |  |  |
| . |  |  |  |  |  |  |  |
| . |  |  |  |  |  |  |  |
| 10 | ... | ... | ... | ... | .... | ... | ... |

1. Create a student with following tables.

Personal- Reg.No., Name, Dob, Address, sex, Age.

Mark - Reg.No., Mark1, Mark2, Mark3, Mark4.

* 1. (a) Write a query to display the details of the male candidates with age is greater than 20.
  2. (b) Create a report to display the Mark statement for all candidates in a suitable format.

1. Create a power point presentation that shows the details of the products manufactured by a company with its features. Use suitable pictures, animation and slide transition effects. Slides must be displayed automatically one after another.

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**113**

DE–3641

DISTANCE EDUCATION

M.C.A (N.S) DEGREE EXAMINATION, MAY 2008.

LAB II – GRAPHICS USING C++ AND ALGORITHMS

(2003 and 2004 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiners should select and give ONE question to each candidate from lot.

Cut here

1. Write a program in C++ to generating a line and a circle using Bresenham’s algorithm.

Cut here

1. Write a procedure and a C++ program to draw nonlinear object ellipse.

Cut here

1. Write a program in C++ for implementing the 2D transformation, scalling and Rotation.

Cut here

1. Write a program in C++ to draw non–linear objects arcs and curve.

Cut here

1. Write a program for defining a window on the screen contents of the window should be displayed in the specified view port.
2. Write a program in C++ to implementing   
   cohen–sutherland line clipping algorithm.

Cut here

1. Write a program to implement polygon clipping algorithm using C++ graphics mode graphics functions.

Cut here

1. Develop a program in C++ to perform two dimensional transformations with respect to the object to a triangle. (Assume your own points). Transformations should include scaling, rotation and translation.

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**206**

DE–3642

DISTANCE EDUCATION

M.C.A (NS) DEGREE EXAMINATION, MAY 2008.

Non–Semester

LAB V – RDBMS

(2001 and 2002 batches)

(upto 2004)

Time : Three hours Maximum : 100 marks

Each question carries 100 marks.

Examiner has to choose and give ONE question for each candidate by lot system.

1. The MCA course contains the following data:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | NAME | FACULTY | NO OF STUDENT | TIME |
|  |  |  |  |  |

Room

|  |  |  |
| --- | --- | --- |
| NO | CAPACITY | COURSE ID |
|  |  |  |

Faculty

|  |  |  |  |
| --- | --- | --- | --- |
| ID | NAME | COURSE NAME | ROOM NO. |
|  |  |  |  |

* 1. Depending on the course strength the rooms have to be allotted. Populate the faculty table giving them their individual timetable. No faculty should take more than 3 hours/day.

1. A cable TV operator charges the following. The users can pay in terms of monthly, daily, yearly subscriptions.

|  |  |  |
| --- | --- | --- |
| STAR SPORTS | 12 | |
| ESPN | 18 | |
| SUN TV | 5 | |
| RAJ | 5 | |
| HBO | 8 | |
| STAR MOVIES | 6 | |
|  |  | |
| USER ID | NAME | CHANNELS SUBSCRIBED | | FROM | TO | COST |
|  |  |  | |  |  |  |

* 1. Design a database for users paying the amount. There must be a validation that ensures the user does not pay twice, the time period must not overlap, channels already subscribed cannot be subscribed again before end of time period. Also the amount must have a monthly roll over done. For eg. even if amount is paid on 28 July if can be only for july and not carried over to August.
  2. Find Daily, collection in the operator, most popular least popular. Use 15 users channels, no of users who have their subscription for more than 6 months. Also give a months extension for those users tree.

1. SRMC hospital maintains a blood donors information. The data are Donor id, name, sex, address, date of birth, blood group (A, B, A–ve, B–ve, AB, O). The operation theatre also maintains a database contain.
   1. Patient name, id, blood group, date of birth, phone number, Match the two databases. Find a similarity match based on a parameter list. First blood group, closest age, same sex. Find out how many records are similar and how many records are similar and how many records never match. Also find groups for which there are no donors. Also find records where the patients are less than 3 years in age. Use atleast 10 records for patient and donors.
2. Write a program to compute phone charges with following charges.
   1. Domestic – Rs. 0.60 per unit
   2. – Rs. 1.20 if it exceeds 200 units
   3. – Rs. 2.50 if it exceeds 500 units.
   4. Create a table having following data
   5. (a) Subscriber id,
   6. (b) Current reading
   7. (c) Previous reading
   8. Calculate phone bill for subscribers. Find out subscribers who have not paid bill by due date and prepare report for the same. Also record a fine of Rs. 10/day for   
      non–payment of bill. Calculate the bill for those subscribers. Calculate the daily collection containing
   9. (i) Bill amount
   10. (ii) Fine amount
   11. The bills will have a 2 months cycle and payment date of 5 of the month.
3. (a) Write a program in SQL to prepare a mark list for the students of students of a class. The mark list contains.   
   Reg. Number, Name, Mark 1, Mark 2, Mark 3, Mark 4, Total and Grade. Minimum pass for a subject is 50. Assume the average score of grading system.
   1. (b) Create two tables named volley ball and kabadi to store players details. Find the union values to find players in both games.
4. (a) Create a table called STUDENT with the fields Name, Roll Number, Major, Date of Birth, Height and Weight.
   1. Write queries to view the following
   2. (i) All the students in a neat format.
   3. (ii) List the students Major wise.
   4. (b) Write a p1 – sql program to accept the table name and display the selective columns in it.
5. A company rX private Ltd. States monthly salary to its employee. It consists of basic salary, allowance, deduction.
   1. D.A. – 43% of basic salary
   2. H.R.A – 7% of (basic salary + D.A)
   3. Deductions : –
   4. P.F – subscribed by an capital
   5. LIC premium – payable by an employee, the salary saving scheme.
   6. Loan Recovery – If any payable by an employee.
   7. Create a main table with 10 records which named as master which contains.
   8. Employee number, Name, Designation , Basic salary, HRA, DA, Bank a/c number, LIC premium No.
   9. A transaction file contains:
   10. Employee number , P.F. subscription, LIC premium amount, Loan Recovery.
   11. Write a program in SQL to prepare a report with the following information. Serial number, Employee number,   
       Bank a/c number, Name, Basic salary, Total Allowance, Gross pay, Total deductions, Net pay.
6. Write a PL/SQL program to prepare a mark statement of a student using student table and mark table. Assume your own data.

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DE–3643

**207**

DISTANCE EDUCATION

M.C.A (N.S) DEGREE EXAMINATION, MAY 2008.

COMPUTER LAB VI — SHELL PROGRAMMING

(2001 and 2002 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiner should select and give TWO questions to   
each candidate by lot system.

cut here

1. Write a shell program to display the result PASS or FAIL using the information given below.
   1. Student Name, Student Reg. No., Mark 1, Mark 2,  
      Mark 3, Mark 4. The minimum pass for each subject is 50.

cut here

1. Write a menu driven shell program to copy, edit, rename, delete a file.

cut here

1. Write a shell program to prepare electric bill for domestic customers.
   1. For first 100 units – Rs. 0.75/unit.
   2. For next 100 units – Rs. 1.50/unit.
   3. Above 200 units – Rs. 3.00/unit.
   4. Prepare the bill for the following format :
   5. Customer No. \_\_\_\_\_\_\_\_\_\_\_
   6. Customer Name \_\_\_\_\_\_\_\_\_\_\_
   7. Previous reading \_\_\_\_\_\_\_\_\_\_\_
   8. Current reading \_\_\_\_\_\_\_\_\_\_\_
   9. Units consumed \_\_\_\_\_\_\_\_\_\_\_
   10. Charge \_\_\_\_\_\_\_\_\_\_\_
   11. Signature.
2. Write a shell script which will receive either the file on the filename with its full path during execution. This should obtain information about this file as given by is –1 and display it in proper format.

cut here

1. Write a shell program to sum up the series ;
   1. 

cut here

1. Suppose a user has renamed some files in current directory using a command like my file name $$. Write a shell script to search all such files and rename them such that they do not contain the shell PID.

cut here

1. Write a shell program which accept the name of a file from the standard input and then perform the following tests on it.
   1. (a) File existence.
   2. (b) File readable.
   3. (c) File writable.
   4. (d) Both readable and writeable.

cut here

1. Write a menu driven shell program to perform the following tasks :
   1. (a) Enter the sentences in file.
   2. (b) Search a given whole word in an existing file.
   3. (c) Quit.

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DE–3644

**213**

DISTANCE EDUCATION

M.C.A (N.S) DEGREE EXAMINATION, MAY 2008.

LAB VII — INTERNET PROGRAMMING

(2001 and 2002 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiner has to choose the question for   
each candidate by lot system.

Do the following practical problems.

cut here

1. Create a HTML form that displays dishes menu in a fast food restaurant and allows the user to select item and quantity from list boxes. Write javascript code that prepares the total bill for items selected by the customer.

cut here

1. Write VB script code that displays calendar for the year and month chosen by the user.

cut here

1. Write Java Applet code and embed it in html page that displays a hand–calculator and allows the user to perform arithmetic operation.

cut here

1. Write Java Applet code using JDBC that displays the train schedule in table format on an html page using a database table.
2. Create an HTML page that displays a page with any content of your choice and allows the user to change the foreground and background colors to his/her choice. Display the color names in list boxes.

cut here

1. Writ a VB script to do the following :
   1. (a) Check the given password.
   2. (b) Change the existing password.

cut here

1. Write a swing program to create the Jabbed Panels.

cut here

1. Write a menu drive Java program to do data base functions using database connectivity :
   1. The functions include insert, delete, edit and display the records from a table.

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DE–3645

**214**

DISTANCE EDUCATION

M.C.A (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB VIII — VISUAL PROGRAMING

(2001 and 2002 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiner should select and give ONE question to   
each candidate from list.

cut here

1. (a) Write event procedure to perform the following :
   1. (i) To change the case of letters typed in a text box from lowercase to upper case and vice versa.
   2. (ii) To change the back ground color of a text box using command buttons.
   3. (iii) To generate the prime numbers.
   4. (b) Write a visual C++ program to design a simple Menu Editor like Notepad.

cut here

1. (a) A departmental store presently has 4 brands of soaps. It proposes to add a few more brands to the existing list. Write an event procedure to add items to the list as well as delete items from the list.
   1. (b) Write a visual C++ program to generate the status bar and show the status of caps lock, Num lock and Scroll lock in it.
2. (a) Write a program to create mini Quiz application using timer control.
   1. (b) Write a visual C++ program to get the status of Shift and Toggle keys.

cut here

1. (a) Write a program to form a Magic Square using a Grid control.
   1. Example : 3  3 magic square constructed with this rule.
   2. 
   3. (b) Write a Visual C++ program to design an application for drawing different shapes in a window.

cut here

1. (a) Write a program to design a simple Menu Editor like Notepad.
   1. (b) Write a visual C++ program to draw a line by using mouse.

cut here

1. (a) Write a program to design a scientific calculator.
   1. (b) Write a VC++ program to fill back ground of the client area with a bitmap.
2. (a) Write a program to design an application for accessing file using dialog boxes.
   1. (b) Write a VC++ program to find out whether a mouse is attached or not; and if attached how many buttons are present.

cut here

1. (a) Develop a data report using Employee table to do the following : The employee table contains the fields :
   1. Empno, Emp Name, Address, Designation, Basic pay, Allowance and Net pay (You should calculate Net Pay)
   2. (i) Insert a record into the table.
   3. (ii) Search a record.
   4. (iii) Delete a record.
   5. (iv) Modify a record.
   6. (b) Write a VC++ program to draw the following :
   7. (i) Line.
   8. (ii) Circle.
   9. (iii) Rectangle.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_



DE–3646

**206**

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB III — RDBMS AND SHELL PROGRAMMING

(2003 and 2004 Batches)

(upto 2004)

Time : Three hours Maximum : 100 marks

Examiner has to choose and give ONE question for   
each candidate by LOT system.

cut here

1. (a) Write a program in SQL to compute Electric bill with the following conditions
   1. 0–100 units – no charge
   2. 101 to 200 units – 1.50/unit
   3. 201 to 400 units – 2.50/unit
   4. >400–3.00/unit
   5. Create a table having the structure Service number, Previous reading and Current reading and Payable amount.
   6. (b) Implement the following in shell programming
   7. (i) Merge the contents of the files file1, file2, and file3, sort them and display the sorted output on the screen page by page.
   8. (ii) Display the list of last 10 files present in the current directory. Also store this list in a file profile.
2. (a) Write a program in SQL to prepare a pay-roll for a company. The pay roll contains the following informations. Name, id, Basic-pay, DA, HRA, Deductions like PF, LIC premium, Loan, Gross pay, Deduction and Net pay. (Assume necessary data and fields)
   1. (b) Write a menu driven shell program to copy, edit, rename and delete a file.

cut here

1. (a) Write a program in SQL to prepare a Mark statement for the students of a class. The mark statement contains Reg. Number, Name, Mark1, Mark2, Mark3, Mark4, Total and Grade. Minimum pass for a subject is 50. Assume the average score for Grading System.
   1. (b) Write a menu driven shell program to perform the following tasks :
   2. (i) Enter a sentence in a File.
   3. (ii) Search a given word in an existing File.

cut here

1. (a) A purchase table contains the following fields.   
   Shop number, Item Code, Data, Quantity Purchased and price for each item.
   1. Write a program-using oracle to find the item purchased in a particular Date and Amount.
   2. The output contains itemcode and amount.
   3. (b) Write a shell program for a file contains records with each record containing name of city, name of country. How will you sort this file with country as the primary sort key and state as secondary sort key.
2. (a) An Railway reservation Table contains the following fields, Train Number, Name of Passenger, Age, Berth Number, Coach number, starting and Destination stations.
   1. Write a program in Oracle to prepare the following reports
   2. (i) List of passengers in Particular Coach.
   3. (ii) List of passengers Destination station wise.
   4. (iii) List of passengers between the age 50 and 60.
   5. (b) Write a menu driven shell program to perform the following tasks :
   6. (i) Enter a sentence in a File.
   7. (ii) Search a given word in an existing File.
   8. (iii) Quit.

cut here

1. (a) Create a table called STUDENT with the fields Name, Roll Number, Major, Date of Birth, Hieght and Weight
   1. Write queries to view the following
   2. (i) All the students in a neat format.
   3. (ii) List the students Major wise.
   4. (iii) List the students for a given course.
   5. (iv) List of students between the ages 19 and 21.
   6. (b) Implement the following in shell programming.
   7. (i) Merge the contents of the files file1, file2, and file3, sort them and display the sorted output on the screen page by page.
   8. (ii) Display the list of last 10 files present in the current directory. Also store this list in a file profile.
2. (a) A Blood Bank maintains blood donors record information in a record file. The items are Donor number, Name, Age, Address, Pin, Place and Blood Group. Write a program to print the Donor Number, Name and Address of the Donor for the following categories.
   1. (i) List of Blood donors having the blood   
      group O+ve
   2. (ii) List of Blood donors in the age group between 20 to 25.
   3. (b) Write a menu driven shell program to copy, edit, rename and delete a file.

cut here

1. (a) Write a program in SQL for Hospital Billing system with the following fields :
   1. patient number, patient name, age, attending doctor, patient type (IN/OUT), charge : Prepare report for the patients who belong to IN-patient category. The report should contain patient name, number, age and charges.
   2. (b) Write a menu driven shell program for the   
      following :
   3. (i) List of files.
   4. (ii) Users of the system.

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DE–3647

**213**

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB IV — INTERNET AND VISUAL PROGRAMMING

(2003 and 2004 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiner has to choose and give ONE question for   
each candidate by LOT system.

Each question carries 100 marks.

cut here

1. (a) Write a Visual C++ program to handle windows messages in MFC program.
   1. (b) Write a Java Script to create a color pallet and display the background in the color chosen from the pallet.

cut here

1. (a) Write a visual C++ program to create a listbox in a window.
   1. (b) Develop a web page for Job recruitment agency in an IT Industry.
2. (a) Write a Java script to create a window by using the confirm message.
   1. (b) Write a VB script to do the following :
   2. (i) To find the factorial of a number. (number = 5)
   3. (ii) To find the Prime numbers between   
      100 and 200.

cut here

1. (a) Write a Visual C++ program to get the status of the shift and toggle keys using MFC.
   1. (b) Write a Java script to create a Scrolling banner to display the text in your windows status bar.

cut here

1. (a) Write a Java program using Applet to display the dialogue and menn in applet.
   1. (b) Write a VB program to perform the following operation in a record of random Access file
   2. (i) Insert
   3. (ii) Delete
   4. (iii) Search
2. (a) Write a Java Script to create a order form to select the house articles.
   1. (b) Create an employee with Emp.No, Emp Name, basicpay, HRA, DA, PF, LIC, GP and NP with the following calculation
   2. 
   3. 
   4. PF = 3% of BP
   5. LIC = 5% of BP
   6. GP = BP + DA + HRA
   7. NP = GP – (PF + LIC)
   8. Using VB program, the database operations includes insert, delete, edit and display records.

cut here

1. (a) Write a Visual C++ program to fill background of the client area with a bitmap.
   1. (b) Write a Java Script to create a window by using the confirm message.
2. (a) Write a Java program using applet to display the different colors and fonts.
   1. (b) Write a VB script to do the following :
   2. (i) Find the difference between the two dates.
   3. (ii) To find the factorial of a given number.

————————



DE–3648

**306**

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB IX — MULTIMEDIA SYSTEMS

(2001 and 2002 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiner has to choose and give ONE question for   
each candidate by lot system.

Each subdivision carries 50 marks.

cut here

1. (a) Write a C++ program for grey level transformation using Bunching.
   1. (b) Design animated presentation to show New Year crackers exploding on mouse clicks.

cut here

1. (a) Write a C++ program to read a bitmap color image and apply Green filtering.
   1. (b) Design animated presentation in Flash to display various courses offered by Alagappa University.
2. (a) Write a C++ program to compress an image using Contour coding method.
   1. (b) Design a sales advertisement for a software product using Flash.

cut here

1. (a) Write a C++ program to find edges of thresholded binary image.
   1. (b) Design a moving car using Flash.

cut here

1. (a) Write a C++ program to find the edges of an image using Sobel edge detection method.
   1. (b) Design animated presentation for birthday gift. The gift box should open on mouse click.

cut here

1. (a) Write a C++ program to compress an image using Run-length encoding method.
   1. (b) Do the image animation using Flash.
2. (a) Write a C++ program for grey level transformation using Histogram equalization.
   1. (b) Design animated doll using Flash.

cut here

1. (a) Write a C++ program for setting up a pattern for multi-level images on bilevel display using limbs algorithm with the matrix 2 × 2 matrix.
   1. (b) Design a moving ball using Flash, with color change.

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DE–3649

**307**

DISTANCE EDUCATION

M.C.A. (N.S.) DEGREE EXAMINATION, MAY 2008.

LAB X — COMPILER DESIGN

(2001 and 2002 Batch onwards)

(Upto 2004)

Time : Three hours Maximum : 100 marks

Examiner has to choose the questions for   
each candidates by lot system.

Each question carries 100 marks.

cut here

1. Write a C program to implement stack allocation with Dynamic Binding.

cut here

1. Write a C program for constructing on NFA from a Regular expression.

cut here

1. Write a C program to implement CLR parsing with a parsing table.
2. Write a C program to construct quadruples, Triples, and Indirect triples for the following expression
   1. 

cut here

1. Write a C Program to develop du-and-ud chains and producing a partition to the webs.

cut here

1. Write a C program to accept a string and check whether it satisfies the following production rule (by using shift reduce parsing)



cut here

1. Write a C program to draw the transition diagram for DFA by accepting the following regular expression
   1. (a) 
   2. (b) 
2. Write a C program to check the production rule whether it is an operator, grammer or not.
   1. (a) 
   2. 
   3. (b) 
   4. (c) 
   5. 
   6. 

———————



DE–3650

**306**

DISTANCE EDUCATION

M.C.A. (NS) DEGREE EXAMINATION, MAY 2008.

LAB V — MULTIMEDIA SYSTEMS AND COMPILER DESIGN

(2003 and 2004 Batches)

(Upto 2004)

Time : Three hours Maximum : 100 marks

One question should be given to each candidate by lot system

Answer BOTH subdivision (a) and (b).

1. (a) To create any one animation and animated it using flash.

cut here

* 1. (b) To convert infix to post fix notation using C.

cut here

1. (a) Write a C ++ program for grey-level transformation techniques
   1. (i) Thresholding
   2. (ii) Bunching.
   3. (b) Write a C program which accepts (1/0)1 +.10 (1/0)\* draw the transition diagram for DFA.
2. (a) Write a C ++ program to creating an image from the give image using automatic selection of grey level for splitting technique.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 7 | 4 | 3 | 6 | 2 | 5 | 2 | 8 | 4 | 6 | 2 |
|  | 5 |  |  |  |  |  |  |  |  |  |  |
| 0 | 3 | 8 | 3 | 4 | 5 | 4 | 0 | 3 | 5 | 3 | 8 |
|  | 7 |  |  |  |  |  |  |  |  |  |  |
| 0 | 8 | 9 | 0 | 5 | 4 | 8 | 5 | 9 | 2 | 7 | 4 |
|  | 9 |  |  |  |  |  |  |  |  |  |  |

* 1. (b) Construct a C program to accept a string and check whether it satisfies the following production rule
  2. (By using Operator Precedence Grammar)
  3. (i) S  AbB
  4. (ii) A  aBb
  5. (iii) B  aBba.

cut here

1. (a) Write a C ++ program to create a second image array model using grey level, transformation bunching.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 1 | 5 | 6 | 7 | 8 | 9 |
| 0 | 2 | 7 | 3 | 6 | 5 | 4 | 0 | 3 |
| 0 | 8 | 7 | 0 | 5 | 3 | 8 | 9 | 4 |

* 1. Draw histograms for first and second images.
  2. (b) To recognize constant in the given source code using C.

1. (a) Write a C ++ program for setting up a pattern for multi-grey-level images on bilevel display using limbs algorithm with the following 2 × 2 matrix
   1. (i) 2
   2. (ii) 3
   3. Also print the dot pattern produced on a 16 grey- level system for a pixel.
   4. (b) To remove spaces, comment lines, new lines and produce line numbers listing using C (Preliminary Scanning).

cut here

1. (a) Draw a human image and walk it using flash.
   1. (b) To convert infix to post fix notation using C.

cut here

1. (a) Draw a car and moving it using flash.
   1. (b) Write a C program which accepts (a/b)\* abb draw the transition diagram for DFA.

cut here

1. (a) Prepare slides show for the courses offered by an your university using power point presentation.
   1. (b) Construct a C Program to check the production rule whether it is operator grammar or not
   2. (i) S  aBc
   3. (ii) S  Sa.

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