

NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-I
(Problem Solving and Programming)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. What do you understand by function prototype ? Write a program in 'C' language to generate the first 10 prime numbers.
2. Explain different data types used in "C" Language with an example of each type.
3. Draw a flowchart and write the algorithm for printing the greatest of three numbers input by the user.
4. How switch case statement is different from "for" loop in 'C' language. Also compare the performance of switch case with if else statement. Give an example to explain your answer.
5. Write a program in C, using structures to generate a report card for students which displays Roll No. and Name of student, marks for at least five subjects, total marks and average percentage obtained by the student. Assumptions can be made wherever necessary.
6. Explain how a pointer is different from array declaration with the help of an example. Write a program in 'C' to generate and display first 10 even numbers using arrays.
7. Write a program in 'C' to find the factorial of **n** numbers using function prototype? Explain the use of functions in a program.
8. Explain different I/O functions in 'C' with an example of each type.
9. What are Library functions in 'C'. Explain 10 library functions with an example of each.
10. Write short notes on :—
 - (a) Union
 - (b) Control instructions in C
 - (c) Typedef
 - (d) Bitwise operator



Examination Programme, 2014
Master in Computer Application (MCA), Part-I

Date	Paper	Time	Examination Centre
05.07.2014	Paper-I	3.30 PM to 6.30 PM	Nalanda Open University, Patna
07.07.2014	Paper-II	3.30 PM to 6.30 PM	Nalanda Open University, Patna
09.07.2014	Paper-III	3.30 PM to 6.30 PM	Nalanda Open University, Patna
11.07.2014	Paper-IV	3.30 PM to 6.30 PM	Nalanda Open University, Patna
15.07.2014	Paper-V	3.30 PM to 6.30 PM	Nalanda Open University, Patna
17.07.2014	Paper-VII	3.30 PM to 6.30 PM	Nalanda Open University, Patna
19.07.2014	Paper-VIII	3.30 PM to 6.30 PM	Nalanda Open University, Patna
21.07.2014	Paper-IX	3.30 PM to 6.30 PM	Nalanda Open University, Patna
23.07.2014	Paper-X	3.30 PM to 6.30 PM	Nalanda Open University, Patna
24.07.2014	Paper-VI (Practical)	3.30 PM to 6.30 PM	Nalanda Open University, Patna

NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-II
(Computer Organization and Assembly Language Programming)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Explain the architecture of computer system. How does the CPU know that an interrupt has occurred ? How does the CPU handle the interrupts ?
2. Why memory is required in a Computer system. Explain different types of memories found inside a computer system and compare their performance with cost.
3. Define and draw fundamental gates. Use fundamental gates to draw NAND and NOR gates. Why NAND and NOR gate called universal gates? Draw fundamental gates using universal gates.
4. What is RAID? Why is it used? What are the important performance considerations of RAID technology? Explain briefly.
5. Simplify and draw a circuit diagram for the following Boolean function in SOP form using K-Map :—
 $F(A, B, C, D) = \Sigma(0, 2, 4, 5, 6, 9, 12, 14, 15)$
6. What types of circuits are used to build counters? Explain different types of counters with circuit diagram.
7. Write short notes on :—
 - (a) Programmable Logic Array
 - (b) RISC and CISC processors
 - (c) Don't Care condition
8. What is the difference between combinational circuit and sequential circuit. Explain. Draw the logic diagram of a half adder and full adder.
9. Write an Assembly Language program to convert a binary number to octal number. Write explanation for each step.
10. Explain the following terms :—
 - (a) Cache coherence.
 - (b) Addressing modes.
 - (c) Multiplexer and Demultiplexer.

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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-III
(Discrete Mathematics)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. (a) Define Proposition, Conditional and Biconditional with its truth table.
(b) Prove that $(p \wedge q) \rightarrow (p \vee q)$ is a tautology.
2. Use Mathematical Induction to prove that $1 + \frac{1}{4} + \frac{1}{9} + \dots + \frac{1}{n^2} \leq 2 - \frac{1}{n} \forall n \in N$.
3. Construct the logic circuit and obtain the logic table for the Expression $x_1 \vee (x_2^1 \wedge x_3)$.
4. Explain the following with examples :—
 - (a) Universal set.
 - (b) Equivalence Relation.
 - (c) Proper Subset.
 - (d) Bijection map
5. A die is rolled once. What are the probabilities of the following events.
 - (a) Getting an even number
 - (b) Getting at least 2
 - (c) Getting at most 2
 - (d) Getting at least 10
6. (a) Find the power set of the set $A = \{a, e, i, o\}$.
(b) If $x = \{a, b, c\}$ and $y = \{1, 2, 3\}$ find, (i) $x \times x$, (ii) $x \times y$, (iii) $x \times \phi$.
7. How many 3-digit numbers can be formed from the 6 digits 2, 3, 5, 7, 8, 9 if repetitions are not allowed? How many of these numbers are less than 400? How many are even?
8. (a) Evaluate $C(6, 2)$, $C(7, 4)$ and $C(9, 3)$
(b) Find the number of distinct sets of 5 cards that can be dealt from a deck of 52 cards.
9. In how many ways can 20 students be grouped into 3 groups.
10. What are the probabilities that in eight tosses of a fair coin there will be
 - (a) Exactly four heads?
 - (b) At least four heads?

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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-IV
(System Analysis and Design)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Give characteristics of a SRS. Develop a SRS for a Hospital management system. Who are the key persons at all the levels of MIS? Explain their responsibilities. least 6 attributes of a good system analyst.
2. Define Risk? What is Risk Assessment and management? Explain various issues involved in software maintenance, with appropriate examples.
3. Explain database design. Explain different types of Database models with examples of each type. Differentiate between coupling and cohesion.
4. What kind of fact finding techniques would you use for investigating the information requirements for a school, which is presently doing manual registrations ? Which kind of techniques do you think will be more effective ? Also, mention the problems you anticipate in conducting the investigations.
5. What are different types of threat in computer system ? Why security is important in a computer system ? How does an organization prevent its database from security concerns ? Illustrate with an example.
6. Describe the aims of the following testing techniques :—
 - (i) Stress testing.
 - (ii) Performance testing.
 - (iii) Response testing.
 - (iv) Recovery testing.
7. Draw ERD for a Library Information System for a college. Explain the concept of cardinality through it. What do you mean by internal information, external information and turnaround document ?
8. What role does an analyst and end-user play in the system development ? Give examples of SDLC models to support the answer. Categorize system documentation. Give few examples of documentation.
9. What activities are performed during Design phase? Explain the use of CASE tools in System Development.
10. Write short notes on the following with example of each :—
 - (a) Objectives of SDLC
 - (b) Prototype
 - (c) Modularity.
 - (d) Cost-Benefit analysis.



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-VII
(Design and Analysis of Algorithm)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Define algorithm. What are the characteristics of an algorithm. Describe the building blocks of an algorithm. Write an algorithm for Selection sorting.
2. Explain divide and conquer concept with a suitable example. Write an algorithm of quicksort.
3. Write the principle of mathematical Induction. What is a minimum cost spanning tree? Write an algorithm for any one method for finding the minimum cost spanning tree. Also discuss its complexity.
4. Sort the following list in increasing order of numbers 12, 64, 15, 47, 28, 100, 62, 42, 70, 4, 11, 88, 5 using each of the following methods, (i) Merge Sort, (ii) Heap Sort. Further, count the number of operations, by each sorting method.
5. What is recursion. How is it different from simple procedure? Give an example to explain your answer.
6. Explain greedy method based algorithm for job sequencing. Explain basic principle of dynamic programming with examples.
7. Describe Regular Grammar and Regular Language with examples. What are the rules for writing the regular grammar? Explain the difference between Finite automata and Push Down Automata. Give an example for each.
8. Write short note on the following :—
 - (i) Graph coloring.
 - (ii) Hamiltonian cycle.
 - (iii) NP-hard Problem.
 - (iv) Time and Space complexity.
9. Explain different types of Finite Automata giving example for each. Describe the difference between NFA and DFA. What is null NFA?
10. Write short notes on the following :—
 - (i) Dynamic programming.
 - (ii) Context Free Grammar.
 - (iii) Growth rate of a function.



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-VIII
(Advanced Discrete Mathematics)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Define the following with example :—
 - (a) Isomorphism
 - (b) Pseudo Graph
 - (c) Complete Graph
2. Find the order and degree of each of the following recurrences. Also, state whether they are homogeneous or non-homogeneous. (a) $a_n = a_{n-1} + a_{n-2}$ (b) $L_n = L_{n-1} + n$.
3. Determine the number of subsets of a set of n elements, $n \geq 0$.
4. Find the complete solution of the recurrence $a_n = 3a_{n-1} - 4n, n \geq 1$.
5. Use the method of Inspection to solve the recurrence $b_n = b_{n-1} + 4n^3 - 6n^2 + 4n - 1$ for $n \geq 1$ with $b_0 = 0$.
6. Show that $K_{m,n}$ is not Hamiltonian when $m + n$ is odd.
7.
 - (a) Find the edge chromatic number of C_n .
 - (b) Give an edge colouring of the Peterson graph.
8.
 - (a) Show that C_6 is bipartite and K_3 is not bipartite.
 - (b) Is the sub graph of a bipartite graph bipartite ? Give reasons for your answers.
9.
 - (a) Find the number of regions in a tree, a cycle and K_4 .
 - (b) Is a sub graph of a planar graph planar ? Why ?
10.
 - (a) Find the edge connectivity of C_n and K_n for $n \geq 3$.
 - (b) Find $\lambda(G)$ where G is a Peterson graph.



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-IX
(Data Communication and Computer Networks)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Explain the concept of Manchester, Differential Manchester, NRZ-L and NRZ-I with a proper example for each.
2. Differentiate between OSI and TCP/IP model. Explain the function of Physical layer and Network layer of OSI model.
3. Describe the devices used at Datalink layer and Network layer? What happens in congestion avoidance and congestion detection phases of TCP's congestion control mechanism ?
4. Explain the concept of Asynchronous and Synchronous mode of communication with an example. How does statistical TDM try to resolve shortcomings inherent in synchronous TDM ?
5. What is count to infinity problem ? Explain through an example. Show the status of sender's and receiver's window of 8 bit sliding window mechanism. How does it increase utilization of channel bandwidth?
6. What is multiplexing concept at transport layer? Explain upward and downward multiplexing. How transport layer multiplexing different from multiplexing concept in physical layer.
7. Explain the operation of CSMA/CD. What happens when a station detects a collision? What are methods of avoiding collision? Explain.
8. (a) Compare the TCP header and the UDP header. List the fields in the TCP header that are missing from UDP header. Give the reason for their absence.
(b) List and discuss all the fields of IP datagram header which relate to fragmentation.
9. Write short notes on the following:
 - (a) IP Address
 - (b) Switching
 - (c) Digital certificate
10. Describe some protocols of Application layer? Compare Dijkstra and Bellman Ford algorithms for finding the shortest path?



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-X
(Management of Information System)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. (a) Explain in detail why do companies need to implement Business Intelligence (BI).
(b) Explain the knowledge flow using the knowledge model. Also, explain the activities performed in knowledge creation and transfer.
2. Explain, how are the artificial intelligence and neural network techniques used for business forecasting. What is Portfolio Management ? Explain the steps for implementation of portfolio management.
3. What is supply chain ? What is its upstream portion and downstream portion ? Describe the steps involved in business process re-engineering. What are its limitations ?
4. (a) Discuss the term "Knowledge Management". What is the importance of knowledge management in an organization?
(b) Compare and contrast the following :—
 - (i) Hacking and Cracking
 - (ii) Cyber Crime and Computer Crime
 - (iii) Cyber War and Cyber Terrorism.
5. Discuss the importance of business ethics and values for the effective MIS. Describe the various functions of management.
6. What are the features of transaction processing system? What are the different types of transaction processing and its major functions and sub-functions?
7. What is the role of Information Technology (IT) in Risk management of any organization. Explain the role of Decision Support System in an organization.
8. Explain all the important metrics of business performance management?
9. Define genetic algorithms. Explain the advantages and disadvantages of genetic algorithms in business organizations. Explain the basic principles that need to be considered during designing an organization structure.
10. What are the advantages of using the Internet as the Infrastructure for e-commerce and e-business. Discuss the benefits and challenges of implementing enterprise system.



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-VI (Practical)
(C and Assembly Language Programming)
Annual Examination, 2014
SET-I

Time : 3 Hours.

Full Marks : 100 (20+80)

Answer any Four Questions. All questions carry equal marks.

1. Write C program which read two strings and concatenate the largest string to the smallest string (among the two strings). Make necessary assumption. Do not use standard available functions of C.
2. Write a C program which find the length of a given string (Do not use library function for finding string length).
3. Write a C program which finds the largest number from an array of 10 numbers.
4. Write a 8086 assembly program which takes a decimal number as input and find its binary equivalent number.
5. Write a program in 8086 assembly language that will take three decimal input and display smallest among them.

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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-I, PAPER-VI (Practical)
(C and Assembly Language Programming)
Annual Examination, 2014
SET-II

Time : 3 Hours.

Full Marks : 100 (20+80)

Answer any Four Questions. All questions carry equal marks.

1. Write C program which read five strings and prints the largest string among the strings). Make necessary assumption.
2. Write a C program which find the length of a given string (Do not use library Function for finding string length).
3. Write a C program which prints the multiplication of 2x2 matrix using arrays.
4. Write a 8086 assembly program which takes a decimal number as input and Find its octal equivalent number.
5. Write a program in 8086 assembly language that will take two decimal inputs and display smallest among them.

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03.09.2014	Paper-XXX (Tentative)	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-III, PAPER-XXII
(MCS-43 : Advanced Database Design)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. A Car insurance company records the following details about its customer. A customer can own one or more than one car. Each car can be driven by one or more drivers. Each car may meet an accident one or many times. Each accident may be of different types for which the company pays the insurance amount to the customer. Draw an E-R diagram for the Car Insurance company identifying various entities, attributes and cardinality. Show meaningful relationships that exist among the entities. Translate the E-R diagram to schema Relational Model.
2. Explain different protocols for concurrency control in transactions with the help of an example and illustration for each type.
3. What is KDD? With the help of a process diagram, explain the various tasks involved in the Knowledge Discovery in Databases (KDD) process. Give some applications of KDD.
4. Explain Query optimization with the help of an example . Explain Audit and control concept with the help of an example.
5. Define Multi - valued dependencies and Join dependencies. Give an example of each. State fourth and fifth normal form. Consider a relation R (A, B, C, D, E) with functional dependencies, (i) A-> B, (ii) B -> C, (iii) D-> CE, (iv) B-> AE . Decompose the relation R into BCNF relations.
6. Explain the *reference* architecture of Distributed DBMS with the help of a diagram. How is this different from component Architecture of DDBMS ? Explain the following different ways to implement the object - oriented concepts in DBMS.
7. What is a (DW) Data Ware house? What is the need of DW? Explain the basic components of a DW. Consider a Supply Data of an organization having three dimensions as Supplier, Part and Project. Draw a star schema with supply as the fact table. Make suitable assumptions. How DW is different from Data Mining.
8. Explain the following the following terms with examples :—
 - (i) ACID properties of a transaction
 - (ii) Redo log file
 - (iii) Data Dictionary
 - (iv) Multilevel security
9. With reference to special Databases and GIS explain the following :
 - (i) Application of Geographic Databases
 - (ii) Requirements of a GIS
 - (iii) Operations on the data captured in GIS
10. (a) Consider the following query :—

```
SELECT EmpId, EmpName, EmpAddress, DeptName, Designation,  
FROM Employee, Department  
WHERE(SELECT EmpId, DeptName, Designation, Salary, DOJ  
FROM Salary )  
AND Employee. DeptNo = Department.DeptNo  
OR Employee, Salary > 20000
```

Create a query evaluation plan for the query given above. Make suitable assumptions about the relation and statistics.
- (b) What is Embedded SQL? Explain the role of cursors in Embedded SQL with the help of an example.

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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-III, PAPER-XXIV
(MCS-051 : Advanced Internet Technologies)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. List the packages required for using JDBC 3.0 API in an application. Explain the four types of drivers available with JDBC and their use. Explain the different procedure of Recovery after system failure.
2. There is a data base consisting of student academic records having name (last, middle, first), roll no, address (3 lines, city, PIN), subject and grade. Write down the DTD for this and write an application fragment to create an XML document from the student database.
3. Differentiate between the following :—
 - (i) GET vs POST
 - (ii) JSP vs Servlets
 - (iii) Servlet Context vs Servlet Config
 - (iv) Session vs Cookie
 - (v) Data integrity Vs Session integrity
4. Write code for entering data from web based form for a social networking site. User can register with the site using his email id or unique user name. On successful registration, user should be logged in and land on welcome page. You are required to make your assumption for the data fields and to use JSP, Servlets and JDBC.
5. Discuss the layered architecture of EJB and its components briefly. What is DTD ? What is the role of DTD in XML ? Explain different components of DTD.
6. Differentiate between Session beans and Entity beans in terms of object sharing, object state, transactions, container failure and object recovery.
7. Assume that there is student table named as student in MS - Access database with the following fields : STD_ID, NAME, COURSE, EMAIL, MOBILE AND DOB. Write a Java program to insert and then display the records of the table using JDBC.
8. Explain the following JSP objects and their use in web programming :—
 - (i) Config object
 - (ii) Page object
 - (iii) Application object
 - (iv) Session object
 - (v) Exception object
9. What is JNDI authentication ? Explain with the help of suitable example. Compare and contrast SGML, HTML and XML. What is role of Home interface and remote interface in EJB ? Explain with the help of an example.
10. Explain the importance of deployment descriptor in Servlet. Create a custom JSP tag that accepts a name (first name and surname) and converts that into the title case. The conversion should take care of special names such as MC Donald.

INPUT - Indian mc Donald

OUTPUT - INDIAN MC DONALD



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-III, PAPER-XXV
(MCS-053: Computer Graphics and Multimedia)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. What is homogeneous co-ordinate system ? Why is it needed ? Explain this with the help of an example. What are the various parametric continuity conditions in curve drawing ?
2. Differentiate between Random and Raster Scan display devices. Use DDA line generation algorithm to draw a line from (2, 3) to (8,5).
3. Derive a general transformation matrix for 3-D rotation about x-axis. Perform a 180° rotation of a triangle A (1, 2), B (5, 1), C (3, 5) about an arbitrary point (3, 3).
4. Explain any one method of polygon representation with the help of an example. How many key frames does a 45 seconds animation film sequence with no duplications require if there are four in-between frames for each pair of key frames ?
5. What are the merits and demerits of Gourand Shading, constant shading and phong shading ? What will happen if duplication is allowed ? Why file Compression Techniques are beneficial in Computer Graphics ?
6. Differentiate between window and view port. Find the normalized transformation N which uses the rectangle A (1, 4) B(4, 1) C(8, 5) D(5, 8) as a window and the normalized device screen as a view port whose lower left corner is L(0, 0) and upper right corner R(1, 1).
7. (a) Explain the following terms :—
 - (i) Resolution (Screen)
 - (ii) Aspect Ratio
 - (iii) Refresh rate(b) Differentiate between vector graphics and bitmap graphics.
8. Explain all the four cases of Sutherland-Hodgman polygon clipping algorithm. Derive the 2-D transformation matrix for reflection about the line $y = mx + c$, where m and c are constants. Use this transformation matrix to reflect the triangle A (0, 0), B (4, 0) and C (4, 4) about the line $y = 2x + 5$.
9. (a) Explain different types of animation ? What is compression ? Explain the need for video compression.
(b) Explain various video file formats.
(c) Explain any two types of authoring tools.
10. Explain z-buffer algorithm for visible surface detection. Derive a mathematical expression for drawing a cubic Bezier curve. Given four control points P0(1, 1), P1,(2, 3), P2(4, 3) and P3(3, 1), Determine two more points on the same Bezier curve.



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-III, PAPER-XXVII
(MCSE-003: Artificial Intelligence and Knowledge Management)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. (a) Write a recursive program in PROLOG, to find the factorial of a number.
(b) Transform the following into Disjunctive Normal Form (DNF) :—
(P → (¬(Q → R)))
2. (a) How is inference used in deriving conclusions from the facts ? Differentiate between forward chaining and Backward chaining. On what factors does the decision to choose forward or backward chaining depend ?
(b) Enumerate the Various Knowledge representation schemes. Give brief description of each scheme. Identify advantages of representation scheme over the other.
3. Write short notes on the following :—
(a) Mean-End Analysis
(b) A* Algorithm
4. Define the following concepts, each with a suitable example :—
(a) Sound Argument
(b) Interpretation of a formula
(c) Consistent formula
5. Briefly describe the **And-OR** graph. How does it contribute to search and control, strategy of an expert system ? Explain the following logic concepts, using suitable examples :—
(a) Modus ponens
(b) Valid statement
(c) Unification principle in proposition logic
6. (a) Explain the advantages of Prenex Normal Form with an example.
(b) Describe the characteristics of scripts as a model for representing knowledge.
7. (a) Draw a Semantic Network for the representation of the following sentence :—
Albert struck Lucy in the garden with a sharp knife last month.
(b) Construct Truth Table for the following formula :—
(¬(¬P ∨ Q) ∧ (¬Q ∨ R)) ∧ (¬P ∨ (Q ∧ ¬R)), Where P and Q are statement symbols.
8. (a) Transform the following into Conjunctive Normal Form :—
((P ∨ Q) → R) → (P ∧ Q), Where P, Q and R are statement symbols.
(b) Explain the terms Validity and Inconsistency of Propositions with examples.
9. Explain the following with examples :—
(a) Relation on Fuzzy sets
(b) Operations on fuzzy sets.
10. (a) Translate the following statements into First Order Predicate Logic (FOPL) :—
(i) All men are honest.
(ii) Sumeet is a man therefore he is honest.
(b) What are AI Agents ? What are its roles ? How do they relate to an Expert System ? Explain them briefly.

NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-III, PAPER-XXIX
(Application Development with .net Framework)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Explain CTS (Common System Type) of .NET Framework in detail.
2. Explain Common Language Runtime features. Why are they used ?
3. Describe the guidelines for project deployment. Explain how Windows-Client applications are deployed.
4. What type of paradigm does Visual Basic Client /Server applications support? What are the advantages of such paradigm.? Explain.
5. Explain following terms :—
 - (a) ADO Objects
 - (b) ADO Data Control
 - (c) SQL
6. Explain features of ASP.NET . What are additional new features of ASP.NET.
7. Explain stages in web forms processing. What is page life cycle?
8. Explain different types of Looping Statements in VB.NET with examples.
9. Explain different types of Dialog Boxes.
10. Explain the concept of file Access types and functions with examples.



Examination Programme, 2014
MCA, Part-III

Date	Paper	Time	Examination Centre
01.09.2014	Paper-XXIII (Practical)	12.00 Noon to 3.00 PM	Nalanda Open University, 12 th Floor, Biscomaun Tower, Patna
02.09.2014	Paper-XXVI (Practical)	12.00 Noon to 3.00 PM	
03.09.2014	Paper-XXX (Viva Voce)	From 12.00 Noon	

NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-III, PAPER-XXIII
(Unix and Oracle)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer all the Questions. All questions carry equal marks.

SECTION-A

1. Write the UNIX commands for the following :—
 - (a) To print the first difference between any two given files.
 - (b) To show the disk space used by files or directories.
 - (c) To split a file containing 50 lines into two files of 25 lines each.
 - (d) To direct a standard output to any of the line printer.
 - (e) Compare two files and show their differences.
 - (f) To execute some command even after logout.
 - (j) To display the last 20 lines in a given file.
2. Write a shell program to count no. of characters, no. of blank spaces, no. of words and no. of lines in a given file by the user.
3. Write a shell script that print table of 5.

SECTION-B

4. Consider the following employee database schema :—
EMPLOYEE (ESSN, ENAME, DEPT_NO, SALARY)
DEPENDENT (ESSN, DEPEND_NAME, RELATION, DOB)
DEPARTMENT (DEPT_NO, DEPT_NAME, MANAGER)
 - (a) Draw an E-R diagram for the given relation.
 - (b) Write the following queries using SQL command :—
 - (i) Find details of dependents for employee having name AJAY.
 - (ii) Find the name of the manager of the department in which employee with ESSN Code 5078 works.
 - (iii) Find the name of all employees whose age is less than 18 years.
 - (iv) Find the DOB of the son of the employee having employee code ESSN 5078.
 - (v) Find the details of the departments in which the employee having employee code ESSN 5078 has worked.



NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-III, PAPER-XXVI

(MCSL-54 : Advanced Internet Technologies and Computer Graphics)

Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

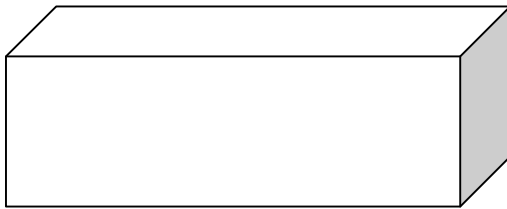
Answer all the Questions. All questions carry equal marks.

SECTION-A

1. Write a Program using Servlet and JDBC for developing online application for displaying Railway reservation ticket. Create appropriate databases.
2. Write a JSP Program, which displays a web page containing the name of the College, program being offered currently, number of students enrolled in each program, new programs to be offered, eligibility criteria for taking admission in each program.
3. Write a Program in JSP that enables any student to submit his/her assignment. Make necessary assumptions.

SECTION-B

4. Write a program in C or C++ demonstrate DDA's Line generation algorithm?
5. Write a program in C/C++ using Open GL that draws the following figure. ?



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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XII
(MCS-032 : Object Oriented Analysis and Design)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. (a) What are the benefits of object oriented development over structure development.
 (b) Create an activity diagram for University Examination system.
2. Microwave oven contains simple control button which is available for the users of the oven. If the oven door is closed and a user pushes the button, the oven will cook for two minutes. If the user pushes the button at any time when the oven is cooking, the user gets an additional minute of cooking time. For example if the user has 30 sec more cooking time to go and he pushes the button twice, the cook time is now for 2 minutes and 30 seconds. If door of oven is open then light is on otherwise off.
 (i) Draw a class diagram. (ii) Draw an instance diagram.
 (iii) Draw use case diagram. (iv) Draw sequence diagram.
 (v) Identify the states and transitions.
3. Explain by giving examples how, Dynamic modeling is different from Functional modeling?
4. Differentiate between the followings with appropriate examples :—
 (a) Static binding and dynamic binding (b) Generalization and aggregation
 (c) Attributes and behaviour (d) Packages and subsystems
5. (a) Explain major features of UML.
 (b) What is inheritance ? How we can incorporate inheritance adjustment in object oriented methodology ? Briefly explain the concept of collaboration diagram.
6. Draw a DFD for Railway Reservation System upto 2 levels. Explain each component used in the diagram and how they are participating in the diagram.
7. What do you mean by concurrency? Which model is perfect enough to describe concurrency in a UML diagram and why, explain giving an example ?
8. What is a sequential diagram? Explain probe in sequential diagram. How are events happening between objects controlled?
9. Write short notes on any **Four** of the following :—
 (a) Meta classes (b) Association class (c) Object constraint language
 (d) Derived attributes (e) Persistency
10. (a) Why do we use integrity constraints in relational database management system. Justify your answer with appropriate example.
 (b) Draw the state diagram for 'Issue of Book'.



आवश्यक सूचना : MCA, Part-II के सभी परीक्षार्थियों को सूचित किया जाता है कि अपरिहार्य कारणों से दिनांक 04.11.2014 को आयोजित होने वाली परीक्षा अब दिनांक 05.11.2014 को दोपहर 12 बजे से 3 बजे के बीच तथा 09.11.2014 को आयोजित होने वाली परीक्षा अब दिनांक 10.11.2014 को दोपहर 12 बजे से 3 बजे के बीच आयोजित होगी । शेष परीक्षाएँ अपने पूर्व निर्धारित तिथि, समय एवं स्थान पर आयोजित होंगी । परीक्षा का आंशिक रूप से संशोधित कार्यक्रम नीचे दिया जा रहा है ।

Revised Examination Programme-2014
Master of Computer Application (Part-II)

Date	Papers	Time	Examination Centre
02.11.2014	Paper-XII	8.00 AM to 11.00 AM	Nalanda Open University, Patna
05.11.2014	Paper-XIII	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
06.11.2014	Paper-XIV	8.00 AM to 11.00 AM	Nalanda Open University, Patna
10.11.2014	Paper-XVI	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
11.11.2014	Paper-XVII	8.00 AM to 11.00 AM	Nalanda Open University, Patna
13.11.2014	Paper-XVIII	8.00 AM to 11.00 AM	Nalanda Open University, Patna
15.11.2014	Paper-XIX	8.00 AM to 11.00 AM	Nalanda Open University, Patna
17.11.2014	Paper-XI	12.00 Noon to 3.00 PM	Nalanda Open University, Patna

18.11.2014	Paper-XV	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
19.11.2014	Paper-XX	12.00 Noon to 3.00 PM	Nalanda Open University, Patna

NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XIII
(MCS-034: Software Engineering)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Describe various problems related with software development. Give a comparative analysis of various types of software process models used in software development.
2. What is the significance of specifying functional requirements in SRS document ? Explain different levels of Capability Maturity Model.
3. Why is User Interface Design an important issue in software design ? What are the types of errors you may anticipate while designing a user interface ? Explain.
4. What is debugging ? Mention the steps in the process of debugging. Explain Cyclomatic complexity in software development.
5. What are the major inputs for software project estimation ? Explain COCOMO model in detail with an example.
6. Explain in detail the factors affecting the task set for the project ? Define the term risk. How is it related to Software engineering ?
7. Explain the concept of Software project Planning. What are the drawbacks of work breakdown structure ? How coupling and cohesion affect the Software structure ?
8. What is Formal Technical Review and why it is required. Explain all the attributes of Quality of software.
9. Explain the concept of Software Change Management and Version Control with an example.
10. Write short notes on any **Three** of the following :—
 - (i) Software Design Issues
 - (ii) Software metrics
 - (iii) CASE Tools
 - (iv) Data Flow Diagram



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XIV
(Accounting and Financial Management)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. The following is the Trading and Profit and Loss A/c and Balance Sheet of a firm :—

			Cr
Dr		Trading and Profit & Loss A/c	
<i>Particulars</i>	<i>Amount (Rs.)</i>	<i>Particulars</i>	<i>Amount (Rs.)</i>
To Opening Stock	10,000	By Sales	1,00,000
" Purchases	55,000	" Closing Stock	15,000
" Gross Profit c/d	50,000		
	1,15,000		1,15,000
To Administration Expenses	15,000	By Gross Profit b/d	50,000
" Interest	3,000		
" Selling Expenses	12,000		
" Net Profit	20,000		
	50,000		50,000

Balance Sheet

<i>Capital & Liabilities</i>	<i>Amount (Rs.)</i>	<i>Assets</i>	<i>Amount (Rs.)</i>
Capital	1,00,000	Land & Building	50,000
Profit & Loss A/c	20,000	Plant & Machinery	30,000
Creditors	25,000	Stock	15,000
Bills Payable	15,000	Debtors	15,000
		Bills Receivable	12,500
		Cash at Bank	17,500
		Furniture	20,000
	1,60,000		1,60,000

Calculate the following ratios :—

- | | |
|------------------------------|-----------------------|
| (i) Inventory turnover ratio | (ii) Current Ratio |
| (iii) Gross profit ratio | (iv) Net profit ratio |
| (v) Operating ratio | (vi) Liquidity ratio |
| (vii) Proprietary ratio | |

2. What is Cash Flow Statement ? How is it prepared ? Give an example.
3. Explain various accounting concepts in brief.
4. What is financial accounting ? How does it differ from management accounting ?
5. What ratios are required to be calculated to test the solvency of a business ? State those ratios.
6. Describe the scope and functions of financial management.
7. Write short notes on any **Two** of the following :—
 - (a) Internal Rate of Return.
 - (b) Capital Rationing.
 - (c) Average Rate of Return
8. Explain the concept of working capital. What is the importance of working capital for a manufacturing firm ?
9. What is Trial Balance ? How is it prepared ? Is it a conclusive proof of arithmetical accuracy ?

10. From the following transactions of M/s Divya Sharma & Co. write up the Journal in proper form, post the ledger and take out a trial balance.

2012	Particulars	Rs.
April 01	Started business with cash	10,00,000
02	Deposited into bank	50,000
03	Furniture purchased for cash	20,000
05	Purchased goods for cash	40,000
07	Old furniture sold for cash	80,000
08	Purchased goods from M/s Sanjeev Tomar on Credit	1,00,000
09	Received cheque from M/s Sanjeev Tomar	1,00,000
12	Deposited the cheque into bank	1,00,000
15	Paid taxes in cash	50,000
16	Goods sold to M/s Ram & Co. for cash	5,60,000
24	Goods sold on credit to Ramesh	2,10,000
28	Received cash from Ramesh	2,10,000
30	Bank Interest Credited	70,000
30	Paid Rent	1,50,000
30	Paid Salary	1,50,000

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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XVI
(MCS-021: Data and File Structure)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Define an algorithm. Explain how efficiency of an algorithm depends on the resources used by the algorithm. What is the trade-off between space and time complexity ?
2. Explain Singly linked lists. Write an algorithm for implementing insertion and deletion operations in a singly linked list using arrays.
3. What are the various operations in a queue ? Explain each of them with an example.
4. Describe the relationship between asymptotic notations with a neat sketch. Explain in detail the algorithmic implementation of multiple stacks.
5. Define a multiway tree of order m. Create a B-Tree of order 5 for the following :—
D, A, C, N, G, H, E, K, M, S, Q, L, W, T, Z, P, R, W, Z
6. Explain Kruskal's and Prim's algorithm with the help of an example. Which graph traversal is recursive by nature.
7. Explain Internal sorting and External sorting. Discuss about the linear search in detail. Apply heap sort for the following unordered elements :—
2, 3, 6, 81, 14, 64, 18, 4, 25, 36, 16, 9, 49,
8. Why file organisation important ? Explain different types of File organisation with their advantages and disadvantages.
9. Explain the depth first search algorithm with example. Write Floyd's algorithm for all-pairs shortest path algorithm.
10. Write short notes on any **Three** of the following :—
 - (i) Red and Black Trees
 - (ii) Quick sort
 - (iii) Binary Tree
 - (iv) AVL Tree



NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-II, PAPER-XVII

(MCS-022: Operating System Concepts and Networking Management)

Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Explain the following with reference to WINDOWS 2000 operating system :—
 - (i) Trust Relationships and Work Groups
 - (ii) Remote Access
 - (iii) User mode
2. List and explain the various Networking topologies. Explain Virtual Networks and Remote Networking.
3. How many built-in groups are there in Windows-2000. Explain the following with reference to "Hardening" in WINDOWS 2000 operating system.
 - (i) Hardening the operating system and application code
 - (ii) Hardening the file system security
 - (iii) Hardening the local security policies
 - (iv) Hardening the services
4. Explain the memory management concepts in LINUX operating system. What are different types of communication in LINUX? Give some commands to carry out these communications in LINUX.
5. Draw a diagram of SNMP architecture and show how it is used to manage network devices. What is the purpose of distributed file system ? List the four computer system vulnerabilities.
6. Discuss the various criteria for selecting a UPS for your system. With the help of an example for each, write the usage and syntax for the following LINUX commands.
 - (i) cat
 - (ii) diff
 - (iii) sort
 - (iv) cmp
7. With help of a diagram, explain the Windows 2000 layered structure. What do you understand by a fault tolerant system ? Explain..
8. Explain the various computer-security classifications. List advantages and limitations of firewall. Describe backup strategies you use for your system.
9. Write the basic purpose and name the OSI layer where the following devices will be operating :—
 - (i) Repeater
 - (ii) Hub
 - (iii) Bridge
 - (iv) Router
 - (v) Gateway
10. Write short notes on any three :—
 - (i) **Transmission media**
 - (ii) **Packet switching**
 - (iii) **Multithreading**
 - (iv) **Cryptography**

NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XVIII
(MCS-023: Database Management Systems)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. Define primary key, candidate key, super key and foreign key. Decompose the relation **R = (A, B, C, D, E)** with the set of functional dependencies: **A → BC, CD → E, B → D** into 3NF relation and identify the primary key of each relation.
2. Differentiate between the following :—
 - (i) Physical data independence and Logical data independence
 - (ii) Object based data models and Record based logical data models
 - (iii) File based system and DBMS
3. Explain the role of the following components of Database Management System.
 - (i) Transaction Manager
 - (ii) Query Processor
 - (iii) Storage Manager
 - (iv) Database Administrator
4. For the following problem definition :—

The book club has members. The book club sells books to its members. The members places orders for books, which the book club fulfils. Each order contains one or more than one books. The books are written by author (s). The publisher publishes the book. An author can write more than one book and a book can have more than one author. A book is published by a publisher, but a publisher publishes many books. A member can place more than one order. The member also can choose not to place an order. The book club sells many books.

 - (i) Draw an E - R Diagram.
 - (ii) Map the E-R Diagram to Relational model.
5. Why is normalization of database done ? Discuss synthesis and decomposition approach of normalization with an example.
6. What are the problems caused by deadlock ? Give a Mechanism to detect deadlock. Explain the purpose of check points in database recovery with an example.
7. What is a fragment of a relation ? What are the main types of fragments ? Why is fragmentation used in distributed Database Design ? Explain with the help of an example.
8. Explain different types of file organization. Why is a B tree a better structure than a binary search tree for implementation of an index ?
9. Discuss the different states of a Transaction with the help of a diagram. What are the problems associated with concurrent transactions?
10. Explain the following with the help of an example each :—
 - (i) Secondary index
 - (ii) Data dictionary
 - (iii) Authorization in databases
 - (iv) Creation of view

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NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XIX
(MCS-024 : Object Oriented Technologies and Java Programming)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 80

Answer any Five Questions. All questions carry equal marks.

1. What is an object oriented paradigm ? Explain two differences between the object oriented paradigm of programming languages and the structured paradigm of programming languages.
2. What is a package in Java ? Explain how package is created in Java. Explain is multithreading ? Explain how does it help Java in its performance ?
3. Explain how exception handling is done in Java, with the help of an example. Differentiate between throw and throws ?
4. What is Inheritance ? Briefly explain importance of super keyword in Java ? What are shift operators? How many types of shift operators are available in Java ?
5. What are the different types of AWT components ? How are these components added to the container?
6. Distinguish between the following terms with examples :—
 - (i) Exception and Error
 - (ii) Final and Finally
 - (iii) Instance variables and class variables.
7. What is constructor ? Explain constructor overloading in Java with an example.
8. What is URL ? Explain how you may connect to a URL in Java. Write an applet that draws circle, a line, and a polygon inside the applet's visible area.
9. What is an event ? Explain different components of an event. What is Border Layout ? Write a Java program which creates Border Layout and adds two text boxes to it.
10. Compare the different layout managers in brief. Write a servlet program that fetches all data from client and stores it in a database successfully.



NALANDA OPEN UNIVERSITY
Master of Computer Application
PART-II, PAPER-XI
(MCSL-016 : Internet Concepts and Web Design)
Annual Examination, 2014

Time : 3 Hours.

Full Marks : 100 (80+20)

SET-I

Answer all the questions. All questions carry equal marks.

1. Create a form containing the following fields and then perform the validation of each field using VB script.
Name and address
Period
Meter readings in kilolitres
Consumption of water in kilolitres
Rate 270/- per month
Amount
Surcharge (15%)
Total
2. Create a log-in page of your university site having field names, name and enrolment number as password. It should have validation checks on both fields. After clicking a log-in button, it should switch over to new page.
3. Create a web page, divide the web page into four frames. In one frame create three links that will display different HTML forms in the remaining three frames respectively.
4. Write a program in Java script to create a simple calculator.

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NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-II, PAPER-XI

(MCSL-016 : Internet Concepts and Web Design)

Annual Examination, 2014

Time : 3 Hours.

Full Marks : 100 (80+20)

SET-II

Answer all the questions. All questions carry equal marks.

1. Create a form containing the following fields and then perform the validation of each field using VB script.:
 - Telephone no.
 - Consumer no.
 - Bill date
 - Pay by date
 - Amount payable
 - Credit Card No.
 - Email ID
2. Design a home page of any organization which must have help menu, menu for different kinds of products being offered and profile of the organization.
3. Design a web page which is like compose page of e-mail. It should have:
 - (a) Text boxes for To, Copy respectively.
 - (b) Text field for message
 - (c) Send Button
 - (d) Option for selecting a file for attachment
 - (e) After clicking a send button a new page should open with display message "message has been sent".
4. Write a program using Java script to generate a fibonacci Series.

NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-II, PAPER-XV

(MCSL-036 : Laboratory Course (for Object Oriented Analysis and Design, Software Engineering and Accountancy And Financial Management)

Annual Examination, 2014

Time : 3 Hours.

SET-I

Full Marks : 100 (80+20)

Answer all the questions. All questions carry equal marks.

SECTION 'A'

1. A study centre keeps track of attendance of the students in theory and practical counselling sessions. A student is allotted to a batch of study in a semester. Every batch has a number of students who are given schedule for every course of that semester of students. The attendance is marked in every session of every course and duly stored in the attendance system. The system keep displaying the status of attendance of every student in every subject. You may make suitable assumptions about the system. Perform the following activities for the description given above :
 - (a) Draw a use case diagram
 - (b) Define all the classes and draw a class diagram.
 - (c) Draw the sequence and collaboration diagram. Make suitable assumptions, if any.

SECTION 'B'

2. Perform the following activities for the description given in "Section-A" (question 1)
 - (a) Draw the DFDs at level 0 and Level 1
 - (b) Write pseudo code for at least two processes defined in Level 1 DFD
 - (c) Draw an E-R diagram and convert ER diagram into relational tables showing the integrity constraints.

SECTION 'C'

3. Post the following transaction after creating a new company "New Software System". Also prepare the journal ledger and trial balance for the company :

September 2014	Transactions Amount	(INR)
5th	The company started its Business.	2,00,000
7th	Opened a new Account in the bank using Cash.	1,00,000
10th	Purchased 10 licenses of Operating system for sale on credit	25,000
10th	Purchased office furniture on Cash	50,000
12th	Sold 5 licenses on Cash	30,000
13th	Paid the company from whom operating systems were purchased by Cash	25,000
15th	Sold 2 more operating system to "A" on credit	10,000
25th	Paid Rent	25,000
27th	Received Cash from "A"	10,000
30th	Paid Salary	50,000

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NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-II, PAPER-XV

(MCSL-036 : Laboratory Course (for Object Oriented Analysis and Design, Software Engineering and Accountancy And Financial Management)

Annual Examination, 2014

Time : 3 Hours.

SET-II

Full Marks : 100 (80+20)

Answer all the questions. All questions carry equal marks.

SECTION 'A'

1. BCA students submit project synopsis in the final semester of BCA. A student can submit only one synopsis in a semester. S/he can submit synopsis only in the final year of BCA not before that. The synopsis includes information about guide, project title, software to be used etc. The synopsis are evaluated at the regional centre and results (approved or not approved) is communicated to the students. Perform the following activities for the description given above :
 - (a) Draw a use case diagram.
 - (b) Define all the classes and draw a class diagram.
 - (c) Draw sequence and collaboration diagram.Make suitable assumptions, if any.

SECTION 'B'

2. Perform the following activities for the description of BCA project synopsis given in the "Section - A" :
 - (a) Draw the DFDs at level 0 and level 1
 - (b) Write pseudo codes for at least two processes defined in level 1 DFD
 - (c) Draw an E-R diagram, - convert the E-R diagram into relational tables showing the integrity constraints.

SECTION 'C'

3. Post the following transactions after creating a new company. Also prepare the journal ledger and trial balance for the company.

September 2014	Transactions Amount	(INR)
1st	Started business with cash	10,000
2nd	Deposit in the bank	1,000
3rd	Purchased goods for cash	2,000
5th	Purchased goods from M/s Singh on credit	2,000
8th	Sold goods to M/s Irfan for cash	5,000
15th	Paid cash to M/s Singh	1,000
20th	Paid Rent	2,000
30th	Paid Salary	3,000

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NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-II, PAPER-XX

(MCSL-025 : Laboratory Course (For Data and File Structures, Networking,
DBMS Lab and Java Programming))

Annual Examination, 2014

Time : 3 Hours.

SET-I

Full Marks : 100 (80+20)

Answer all the questions. All questions carry equal marks.

SECTION-A

1. Write a C program to implement Binary Search Algorithm. Using this program search the value from the following list :
1, 2, 4, 6, 8, 11, 13, 15

SECTION-B

2. Write the uses of each command :
 - (a) who
 - (b) ping
 - (c) pwd
 - (d) sort
3. Perform the following tasks:
 - (a) Create a file My.doc and save it on desktop.
 - (b) Remove a user from a group
 - (c) Show TCP/IP setting of your PC

SECTION-C

4. (a) Create the following table with proper data types for all the fields. The key field is underlined. Insert 10 meaningful records in the table :
ORDER (Order-Number, Item-code, Order-date, Quantity, Customer- Address, cost)
 - (b) (i) List Item -code and Quantity for all the orders received on 02/02/2014, using SQL query on ORDER table.
 - (ii) Write a procedure/trigger to generate Order-Number automatically in ORDER table.

SECTION-D

5. Create an Applet to take radius of a circle as input and draw the circle.



NALANDA OPEN UNIVERSITY

Master of Computer Application

PART-II, PAPER-XX

(MCSL-025 : Laboratory Course (For Data and File Structures, Networking,
DBMS Lab and Java Programming))

Annual Examination, 2014

Time : 3 Hours.

SET-II

Full Marks : 100 (80+20)

Answer all the questions. All questions carry equal marks.

SECTION-A

1. Write a 'C' program to create a Binary Tree. Also Write a function to print this tree in *inorder*.

SECTION-B

2. Write the uses of each command :
 - (a) date
 - (b) grep
 - (c) wc
 - (d) ping
3. Perform the following tasks :
 - (a) Define Ethernet Physical Address.
 - (b) Add two users in a group and set their password.
 - (c) Make a new directory .

SECTION-C

4. Create the following table and perform the necessary task defined below :
 - (a) Create Table : Student(Roll - No., Name, Date - of - Birth, Programme, semester, Address, Year - of - Admission)
 - (b) Enter at least 10 records in the above table and answer the following queries using SQL :
 - (i) Find the name of all the students of MCA program whose date of birth is 02/02/1988
 - (ii) List the name and roll number of all the students who are enrolled in year 2014.

SECTION-D

5. Write a Java program to create a product class, with methods to update and display 20 product details. You may choose a product from the area of sports, Food, and Medicine. Use appropriate **specifier** for data members of your class.

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