



SLR-GL – 1

Seat No.	
-------------	--

**M.C.A. I (Semester – I) Examination, 2014
(Commerce) (Old)
COMPUTER ORGANISATION**

Day and Date : Saturday, 3-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

- Instructions :** 1) Q. No. 1 and Q. No. 7 are **compulsory**.
2) Attempt **any two** questions from Q. No. 2, 3 and 4. Solve **any one** question from Q. No. 5 and Q. No. 6.
3) Figures to **right** indicate marks to a question or sub question.

1. a) Choose the correct option and rewrite the sentences. **7**
- 1) A computer adds and compares data in
a) Hard disk b) Floppy disk c) CPU chip d) Memory chip
- 2) A complete microcomputer system consists of
a) microprocessor b) memory
c) peripheral equipment d) all of a,b and c
- 3) CPU performs
a) memory storage b) logic operation
c) non arithmetic operation d) none of these
- 4) A stack is
a) an 8-bit register in the microprocessor
b) a 16-bit register in the microprocessor
c) a set of memory locations in R/W/M reserved for storing information temporarily during the execution of computer
d) a 16-bit memory address stored in the program counter

P.T.O.



- 5) The branch logic that provides decision making capabilities in the control unit is known as
- a) controlled transfer b) conditional transfer
c) unconditional transfer d) none of above
- 6) Interrupts which are initiated by an instruction are
- a) internal b) external
c) hardware d) software
- 7) Processors of all computers, whether micro, mini or mainframe must have
- a) ALU b) Primary Storage
c) Control unit d) All of a, b and c

b) State **true** or **false**.

7

- 1) A collection of 8 bits is called byte.
- 2) Memory access in RISC architecture is limited to instructions STA and LDA.
- 3) A time sharing system imply more than one processor in the system.
- 4) A stack pointer is a 16-bit register in the microprocessor that indicate the beginning of the stack memory.
- 5) Program register is used to keep track of address of the memory location where the next instruction is located.
- 6) The control unit's function in the CPU is to transfer data to primary storage.
- 7) A dedicated computer means assigned to one and only one task.

2. a) Differentiate amongst different types of software.

7

b) Compute ? in the following.

7

i) $(1010101)_2 = (?)_{16}$

ii) $(1AB3)_{16} = (?)_2$



- | | |
|----------------------------------------------------------------------------|-----------|
| 3. a) Write a note on Multiplexer and De Multiplexer. | 7 |
| b) Explain any two types of shift registers. | 7 |
| 4. a) Differentiate between ROM and EPROM. | 7 |
| b) Explain auxiliary, Associate, Cache and Virtual memory. | 7 |
| 5. a) What is interrupt ? Explain various types of interrupts. | 7 |
| b) Differentiate between RISC and CISC. | 7 |
| 6. a) Write a detail note on : 16 Bit (80286) Architecture. | 7 |
| b) Explain the features of Pentium Dual Core Processor's Architecture. | 7 |
| 7. What is parallel processing ? Explain various types of Multiprocessors. | 14 |
-



Seat No.	
-------------	--

**M.C.A. – I (Semester – I) Examination, 2014
(Commerce) (New)
PRINCIPLES OF MANAGEMENT**

Day and Date : Tuesday, 13-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

Instructions : 1) **All questions are compulsory.**
2) **Figure to the right indicates full marks.**

1. A) State **true** or **false**. **5**
- 1) Budgets are standing plans.
 - 2) Management is a continuous process.
 - 3) In Authoritarian Leadership decision making is centralized.
 - 4) Synergetic effects exist in group.
 - 5) In democratic leadership subordinates views are consider in decision making.
- B) Choose the correct option. **5**
- 1) Which one of the following is not a necessary skills set required by the managers
 - a) Technical skills
 - b) Conceptual skills
 - c) Human skills
 - d) Spatial skills
 - 2) The concept of power refers to
 - a) defined authority and responsibility
 - b) a relative hierarchical position in an organization
 - c) the ability to influence the behaviour of others
 - d) the specialized knowledge possessed by an individual



- 3) A major problem with a task force type of management is
 - a) there is no logical basis for task force information
 - b) its status is too inflexible
 - c) accountability
 - d) lack of planning
- 4) Some policies are imposed by external forces, such as
 - a) governmental regulatory agencies
 - b) employee demands
 - c) management decisions
 - d) lack of funding
- 5) Organization structure primarily refers to
 - a) how activities are coordinated and controlled
 - b) how resources are allocated
 - c) the location of departments and office space
 - d) the policy statements developed by the firm

2. Answer in **1-2** sentences.

10

- i) MBO
- ii) Staffing
- iii) Levels of Management
- iv) Responsibility
- v) Team and Group

3. Attempt **any four** from following.

20

- 1) 'Management is an art, science or both' explain with illustration.
- 2) What is meant by delegation of authority ? What are the elements of the process of delegation ?
- 3) Write a note on scientific management.
- 4) Discuss on contribution of C.K. Pralhad.
- 5) Explain Monetary and nonmonetary motivation.
- 6) Discuss types of plans.



4. Attempt **any two** from following. **20**
- 1) Define control. Discuss the importance of control in organisational system. Explain the elements of control.
 - 2) Compare the three leadership styles. Under what situations would each style be effective ? Give examples.
 - 3) What do you mean by organisation behaviour ? Discuss in detail individual behaviour and group behaviour.
5. Decision making is the primary test of management. Discuss this statement and explain the process of decision making. **10**
-



Seat No.	
-------------	--

**M.C.A. – I (Semester – II) Examination, 2014
(Commerce and Management Faculty)
DATABASE MANAGEMENT SYSTEM (Old)**

Day and Date : Wednesday, 7-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

- Instructions :** 1) Q. No. 1 and 7 are **compulsory**.
2) Attempt **any two** questions from Q. 2 to Q. 4.
3) Attempt **any one** questions from Q. 5 to Q. 6.
4) **All** questions carry **equal** marks.

1. A) Choose the correct alternatives from the following : 7
- 1) In an ER diagram ellipse represent
 - a) entity sets
 - b) relationship among entity set
 - c) attribute
 - d) link between attribute and entity set
 - 2) ER modelling technique is
 - a) top-down approach
 - b) bottom-up approach
 - c) left-right approach
 - d) none of these
 - 3) Check constraint is used with
 - a) insert
 - b) delete
 - c) create
 - d) update
 - 4) The employee salary should not greater than 2000 this is
 - a) integrity constraints
 - b) referential constraints
 - c) over defined
 - d) feasible constraints
 - 5) Redundancy is dangerous as it is a potential threats to data
 - a) integrity
 - b) consistency
 - c) both (a) and (b)
 - d) none of these



- 6) The dual table has
- a) one row with many columns
 - b) one column with many rows
 - c) one row one column
 - d) many rows many column
- 7) _____ is memory buffer containing the data and control information for the server process.
- a) SGA
 - b) PGA
 - c) Buffer
 - d) Cache

B) State whether **true** or **false** :

7

- 1) Files and records are data element of hierarchical model.
- 2) In network model relationship among data are represented by links.
- 3) The term cardinality is used to describe the relationship classifications.
- 4) 3NF is based on the concept of full functional dependency.
- 5) DES provides standard based encryption for data privacy.
- 6) For giving all rights to user grant used “all” keyword.
- 7) Logging facilities that enables updates to database that are in progress to be made permanent.

2. Define the term :

14

- 1) Transaction Recovery
- 2) Achieve log file
- 3) W-timestamp and R-timestamp
- 4) Dirty Bit
- 5) Serializability
- 6) DML
- 7) 3NF.

3. Answer the following :

14

- 1) Explain the advantages and disadvantages of DBMS.
- 2) Explain Granting of Privileges.

4. Answer the following :

14

- 1) Explain functional and multivalued dependency.
- 2) What is concurrency control ? Explain 2Phase Locking Protocol.



5. Consider following table and write SQL statement for following : **14**

- 1) warehouse (wh_id, location, no_of_branch, phone).
- 2) cities (city, city_id, state).
- 3) stored (wh_id, item-no, qty).
- 4) items (item_no, description, weight).
- 5) orders (ord_no, ord_date, cust_name).
- 6) item_orders (item_no, ord_no, qty_orderd).
- 7) customer (cust_name, first_ord_date, live_in_city).
 - a) Display the warehouse located in Pune.
 - b) The list of item whose weight less than 10.
 - c) Dates of all orders made by Mr. Shah.
 - d) The warehouse which holds all items in ord_no 9.
 - e) The total quantity held by each warehouse.
 - f) The location of warehouse holding electrode item.
 - g) Displays rows having cust_name begins with letter M.

Solve any 5 queries.

6. What is need of normalization ? Explain its different normal forms. **14**

7. Draw system architecture of DBMS. Explain each component in details. **14**



Seat No.	
-------------	--

M.C.A. – I (Semester – II) (Commerce) Examination, 2014
SOFTWARE ENGINEERING (Old)

Day and Date : Friday, 9-5-2014

Total Marks : 70

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :** 1) Question No. **1** and **7** are **compulsory**.
2) Attempt **any two** questions from question number **2, 3** and **4**.
3) Attempt **any one** question from question number **5** and **6**.
4) **All** questions carry **equal** marks.

1. A) Choose the correct alternative from the given alternatives : **10**
- 1) An SRS is _____ if and only if every requirement stated has one and only one Interpretation.
a) correct b) compete c) consistent d) unambiguous
- 2) The _____ determines whether the project should go forward.
a) feasibility assessment b) opportunity identification
c) system evaluation d) program specification
- 3) Managers in organizations should not design their own systems as _____
a) systems have to interact with other systems
b) they do not have the special skills necessary to design systems
c) it is not their job
d) they are always very busy
- 4) _____ is the process of starting at a high level and dividing entities into smaller parts.
a) Analysis b) Decomposition
c) Designing d) Creating ERD



- 5) _____ is concerned with fixing reported errors in the software.
- a) Corrective maintenance b) Adaptive maintenance
c) Perfective maintenance d) Post maintenance
- 6) Agile software development is a group of software development methodologies based on _____ and incremental development.
- a) interactive b) effective c) iterative d) narrative
- 7) An attribute that uniquely identifies a thing is called a _____
- a) compound attribute b) class
c) key d) attribute
- 8) The modern structured analysis technique uses data flow diagrams (DFDs) and _____
- a) ERDs b) Activity diagrams
c) DSS d) Workflows
- 9) A software _____ can be defined as a partial implementation of a system whose purpose is to learn something about the problem being solved or the solution approach.
- a) analysis b) specification
c) prototype d) requirement
- 10) The Project Management Process consists of three major phases-planning, monitoring and _____
- a) analysis b) design c) control d) maintenance

B) True or false :**4**

- 1) Program Design Language (PDL), also called structured English or Pseudo-code.
- 2) The primary objective of testing is to design the programs, databases and test plan.
- 3) The main objective of analysis is to assess if it is possible to meet the requirements specified subject to Constraints of budget, human resource and hardware.
- 4) CASE helps provide an engineering-type discipline to software development and to the automation of the entire software life cycle process.



- 2. A) Describe agility (for software projects) in your own words. **7**
B) What is the purpose of software testing ? Explain, using examples. **7**
 - 3. Draw 1st level and 2nd level DFD for On-line System railway reservation system. **14**
 - 4. A) Define Output. What are the analyst's objectives in designing output ? **7**
B) What are the attributes of Web applications ? **7**
 - 5. What is the purpose of software testing ? Explain the levels of systems testing ?
Explain, using examples. **14**
 - 6. Describe the components of CASE tools, indicating the function performed by each. **14**
 - 7. Write short notes on. **14**
-



Seat No.	
-------------	--

**M.C.A. (Part – I) (Semester – II) Examination, 2014
(Commerce and Management) (Old)
SOFT SKILLS**

Day and Date : Monday, 12-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

- Instructions :** 1) *Q. 1 and Q. 7 are compulsory.*
2) *Attempt any two questions from Q. 2 to Q. 4.*
3) *Attempt any one questions from Q. 5 to Q. 6.*
4) *Figures to the right indicate full marks.*

1. A) Select the correct alternative. 4
- 1) Minutes are written by
 - a) President
 - b) Vice-President
 - c) Secretary of the company
 - d) None of the above
 - 2) Silence is a
 - a) Verbal
 - b) Non verbal
 - c) Two way communication
 - d) None of the above
 - 3) In the communication process _____ helps you to evaluate the effectiveness of your message.
 - a) Encoding
 - b) Feedback
 - c) Decoding
 - d) None of the above
 - 4) _____ is concerned with making a sense or meaning out of what people hear.
 - a) Hearing
 - b) Communication
 - c) Listening
 - d) None of the above
- B) State true or false : 5
- 1) Group discussion and debate are one and the same.
 - 2) Jargons must be used during the speech.
 - 3) Communication is one way process.
 - 4) Minutes are written by the secretary.
 - 5) Gestures are non verbal communication.



C) Define :	5
1) Report	
2) Agenda	
3) Memo	
4) Listening	
5) Business Ethics.	
2. a) Write a short note on Telephone etiquettes.	7
b) Write a note on personal goal setting .	7
3. a) What are the considerations for public speaking ?	7
b) What is meditation ? Explain the importance of meditation.	7
4. a) Imagine a group discussing on Social Networking.	7
b) Draft a quotation for furniture for a newly opened college.	7
5. a) Write a note on Minutes.	7
b) Draft a Minute for the 3 rd Annual General Meeting to be held on 16 February 2013 at 4 p.m. at Hotel Taj, Mumbai.	7
6. a) Write a note on Body Language.	7
b) Write a note on perception.	7
7. a) Write a note on Principles of communication.	7
b) Write a note on time management.	7



Seat No.	
-------------	--

M.C.A. (Commerce) (Semester – II) Examination, 2014
OBJECT ORIENTED PROGRAMMING WITH C++ (New)

Day and Date : Monday, 5-5-2014

Max. Marks : 70

Time : 11.00 a.m to 2.00 p.m.

Instructions: 1) All questions are **compulsory**.
2) Figures to the **right** indicate **full** marks.

1. A) Fill in the blanks : **10**

- a) _____ are class members that are hidden from the outside world.
- b) A sequence of bytes is called _____.
- c) _____ are the access levels of a class.
- d) A constructor that takes no argument is known as _____
- e) _____ is the alternate name for a variable.

B) **True or False** ;

- a) C++ supports the concept of Object Paradigm.
- b) Function overloading is commonly used to create several functions of the same name that perform similar tasks but on different data types.
- c) Declaring a constructor as a virtual function is a syntax error.
- d) Run type identification (RTTI).
- e) A scope resolution operator (::), cannot be used to define the member functions of a class outside the class.



2. Answer in **1-2** sentences :

(5×2)

- i) How do you decide which integer type to use ?
- ii) What do you mean by inline function ?
- iii) Differentiate between the message and method.
- iv) In C++, what is the difference between method overloading and method overriding ?
- v) What is namespace ?

3. Attempt **any four** from following :

(4×5)

- i) Write a C++ program to overload the operator '+' which will be used to concat two strings.
- ii) Write a C++ program illustrating static member function.
- iii) What is namespace conflict ? How it is handled in C++ ?
- iv) What is an exception ? Write a program to accept a string in lowercase and convert into uppercase. Raise an exception if the input string length exceeds the allocated size.
- v) What is RTTI ? Write a program illustrating reinterpret_cast, Static_cast, typed () ?

4. Attempt **any two** from following :

(2×10)

- i) What is function overloading and function overriding ? Explain with example.
- ii) What is parameterized constructor ? How the derived class constructors are used to pass parameters to base class in multi-level inheritance ? Explain with a program.
- iii) Write a program that prints the total number of characters(bytes) in a file. The program should ask the user to enter a file name.
- iv) Define Polymorphism. Explain in detail its advantages with suitable example.

5. Write a program using operator overloading for the addition of two integer matrices of size 3*3. **(1×10)**



Seat No.	
-------------	--

**M.C.A. (Part – I) (Semester – II) (New) Examination, 2014
(Faculty of Commerce)
OPERATING SYSTEM CONCEPTS**

Day and Date : Wednesday, 7-5-2014
Time : 11.00 am to 2.00 pm.

Total Marks : 70

Instructions: 1) *All questions are compulsory.*
2) *Figure to the right indicates full marks.*

1. A) Choose correct alternative. 10
- 1) System calls are usually invoked by using
 - a) Software interrupt
 - b) Polling
 - c) An indirect jump
 - d) A privileged instruction
 - 2) A null process has a process identifier
 - a) 1
 - b) 0
 - c) – 1
 - d) null
 - 3) CPU performance measured through
 - a) Throughput
 - b) MHz
 - c) Microsecond
 - d) None of these
 - 4) _____ Scheduler selected the jobs from the pool of jobs and loading to the ready queue.
 - a) Long Term
 - b) Short Term
 - c) Medium Term
 - d) None
 - 5) Context Switching is
 - a) Part of Polling
 - b) Part of Spooling
 - c) Part of Interrupt handling
 - d) All of these
 - 6) Dijkstra's banker's algorithm in an operating system solves the problem of
 - a) Deadlock avoidance
 - b) Deadlock recovery
 - c) Mutual execution
 - d) Context switching
 - 7) Moving Process from main memory to disk called
 - a) Scheduling
 - b) Caching
 - c) Swapping
 - d) Spooling



- 8) Demand paging
 - a) Fetches a page only when needed
 - b) Fetches a page that is likely to be demanded
 - c) Pages out pages when that page frame is needed
 - d) None
- 9) A Process is another name for
 - a) A job
 - b) A task
 - c) Paging
 - d) The operating system dispatcher
- 10) Inter Process communications can be done through
 - a) Mails
 - b) Messages
 - c) System Calls
 - d) Traps

2. Answer in **1-2** sentences. **(5×2=10)**

- 1) Explain the different types of interrupts.
- 2) Discuss the different types of I/O communication techniques.
- 3) What is deadlock ?
- 4) What do you mean by page fault ?
- 5) What is thrashing ?

3. Attempt **any four** from following : **(4×5=20)**

- 1) Differentiate Preemptive and Non-Preemptive scheduling.
- 2) Describe all directory structures in detail.
- 3) Explain in detail RR scheduling with the help of example.
- 4) Explain deadlock avoidance algorithm in detail.
- 5) What is page fault ? How the page fault is handled ?

4. Attempt **any two** from following : **(2×10=20)**

- 1) Explain NOS architecture in detail.
- 2) Explain the need for synchronization.
- 3) What is the structure of UNIX operating system ? Explain any five UNIX commands with example.



5. Attempt the following.

(1×10=10)

Consider the following set of processes, with the length of CPU burst given in milliseconds.

<u>Process</u>	<u>Burst Time</u>	<u>Priority</u>
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

The processes are assumed to have arrived in the order P1, P2, P3, P4, P5, all at time 0.

- a) Draw four Gantt charts that illustrate the execution of these processes using following scheduling algorithms : FCFS, SJF, non preemptive priority (small number implies higher priority), and RR (quantum = 1).
- b) What is turnaround time of each process for each of these scheduling algorithms ?
- c) What is waiting time of each process for each of these scheduling algorithms ?
- d) Which of the algorithms results in minimum average waiting time (over all processes) ?



Seat No.	
-------------	--

**M.C.A. (Commerce) (New) (Semester – II) Examination, 2014
WEB TECHNOLOGY**

Day and Date : Friday, 9-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

Instructions : 1) *All questions are compulsory.*
2) *Figure to the right indicates full marks.*

1. A) Select correct alternatives. 5
- 1) What is the correct CSS syntax for making all the <p> elements bold ?
A) p {text-size:bold;} B) <p style= "text-size:bold;">
C) <p style= "font-size:bold;"> D) p {font-weight:bold;}
 - 2) How do you display hyperlinks without an underline ?
A) a {text-decoration:none;}
B) a {decoration:no-underline;}
C) a {text-decoration:no-underline;}
D) a {underline:none;}
 - 3) What is the correct HTML for making a checkbox ?
A) <checkbox> B) <input type= "checkbox"/>
C) <input type= "check"/> D) <check>
 - 4) Which software can read and render HTML documents ?
A) Compiler B) Server C) Interpreter D) Browser
 - 5) How can you create an e-mail link ?
A) B) <mail>xxx@yyy</mail>
C) <mail href = "xxx@yyy"> D)
- B) State **true** or **false**. 5
- 1) The external JavaScript file must contain the <script> tag.
 - 2) All users of the same application share ONE application object.
 - 3) XML attribute values must always be enclosed in quotes.
 - 4) CENR is Center for European Nuclear Research.
 - 5) In PHP 'scanf' statement is used to display the contents.



2. Answer in **1-2** sentences. **(5×2)**
- i) How to write classes and ID in CSS ?
 - ii) tag in HTML.
 - iii) Write down grouping of radio buttons.
 - iv) How to call external .js file ?
 - v) Arithmetic operator in java script.
3. Attempt **any four** from following. **(4×5)**
- i) Explain flow controls and loops in java script.
 - ii) Explain Cascading Style Sheet.
 - iii) Method and Action attribute in form tag.
 - iv) Explain simple sheets using XSLT.
 - v) What is Client side image mapping ?
 - vi) Design a form to accept workshop registration details from participants and validate any two fields using java script (Assume suitable structure).
4. Attempt **any two** from following. **(2×10)**
- i) What is form ? What are benefits of form ? Explain <input> and <select> tags.
 - ii) What is DTD ? Explain component of DTD with example.
 - iii) Write a program in PHP using Get and Post methods.
5. Write PHP application to accept visiting faculty details and insert it into faculty database (assume suitable table structure). **(1×10)**
-



Seat No.	
-------------	--

**M.C.A. – I (Semester – II) (Commerce) Examination, 2014
SOFTWARE ENGINEERING (New)**

Day and Date : Monday, 12-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

Instructions : 1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

1. Select the correct alternative : 10

i) Systems analyst should use software tools in their work as

- A) all analysts use them
- B) they assist in systematic design of systems
- C) they are inexpensive
- D) they are easily available

ii) The main objective of system evaluation is

- A) to see whether the system met specification
- B) to improve the system based on operational experience for a period
- C) to remove bugs in the programs
- D) to assess the efficiency of the system

iii) The _____ is the form on which data are initially captured.

- A) design document
- B) code document
- C) source document
- D) analysis document

iv) _____ means changing the software to new environment such as different hardware platform or for use with a different operating systems.

- A) Corrective maintenance
- B) Adaptive maintenance
- C) Perfective maintenance
- D) Supportive maintenance



v) _____ tools enable a software engineer to create models of the system to be built.

- A) Project planning B) Analysis and design
C) Project management D) Reengineering

vi) _____ is a group of software development methodologies based on iterative and incremental development.

- A) WebApp B) Legacy Software
C) Agile software development D) System software development

vii) _____ allow the user to execute commands by selecting from a list of choices.

- A) Window B) Menus C) Message box D) Text box

viii) The final specifications are arrived

- A) after feasibility study B) during feasibility study
C) just before implementation phase D) when the system is being designed

ix) A data entity that represents a many-to-many relationship between two other data entities is called a (n) _____ entity.

- A) encapsulated B) associative
C) aggregated D) inherited

x) The primary responsibility of a systems analyst is to

- A) specify an information system which meets the requirements of an organization
B) write programs to meet specifications
C) maintain the system
D) meet managers of the organization regularly

2. Give the answers in **one** or **two** sentences :

(5×2)

i) What are the types of information system ?

ii) What is decision rule ? How it is stated in decision tables ?

iii) What are four objectives that computer output in general should accomplish ?

iv) What are the elements of good design ?

v) What is data encapsulation ?



3. Attempt **any four** from following : **(4×5)**
- i) What is the role of documentation in maintenance and what are the types of documentation ?
 - ii) What are the characteristics of SRS ?
 - iii) What are the functional and non functional requirements ?
 - iv) Explain Spiral Model.
 - v) Write a note on Input validation.
 - vi) Explain coupling and cohesion.
4. Attempt **any two** from following : **(2×10)**
- i) Draw first and second level DFD and also ERD for Library management system.
 - ii) What is requirement specification ? What are the fundamental problems in defining a problem ?
 - iii) How does the purpose of decision tables differ from that of decision trees ?
What components make up a decision table ?
5. Explain in details reverse engineering. What is the difference between reverse engineering and reengineering ? **(1×10)**
-



Seat No.	
-------------	--

**M.C.A. (Part – I) (Semester – I) Examination, 2014
COMMERCE (Old)
C Programming**

Day and Date : Tuesday, 6-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

- Instructions :** 1) Q. 1 and Q. 7 are **compulsory**.
2) Attempt **any two** questions from Q. 2 to Q. 4.
3) Attempt **any one** question from Q. 5 to Q. 6.
4) Figures to the **right** indicate **full marks**.

1. a) Choose correct alternative :

7

- 1) In C _____ function is used to allocate memory dynamically.
a) new b) malloc c) free d) allocate
- 2) _____ statement is used to terminate the loop.
a) goto b) break
c) return d) none of the above
- 3) Which of the following type of variable is having scope throughout the program ?
a) auto b) global
c) register d) none of the above
- 4) A string is nothing but array of characters terminated by
a) \0 b) /0
c) Null d) None of the above
- 5) In C _____ operator is used to get the address of variable.
a) * b) % c) & d) &&
- 6) _____ loop executes at least once.
a) for b) while c) do-while d) all of these
- 7) If P1 & P2 are two pointers then which of following is true ?
a) $p^1 + p^2$ b) $p^1 - p^2$ c) $p^1 * p^2$ d) p^1/p^2

P.T.O.



- b) State **true** or **false** : 7
- 1) All the members of a union can be initialized.
 - 2) Function fseek may be used to seek from the beginning of the file.
 - 3) It is possible to pass a structure variable to a function by either value or by address.
 - 4) A function can return more than one value.
 - 5) In C, value zero is treated as false.
 - 6) Parameters in function call statement are called as formal parameters.
 - 7) Size of any type of pointer is 2 byte.
2. a) Write a C program to find given string is palindrome or not. 7
- b) Explain all storage classes in C. 7
3. a) Explain concept of Recursion with the help of example. 7
- b) Define a structure 'Student' with members.
- Roll_No., Name, Subject1, subject2, subject3, subject4, subject5, total, percentage. Write a program to accept data for 5 students and calculate total and percentage of marks obtained by each student and display it. 7
4. a) Define function. Write a program to print the factorial of a entered no using recursion. 7
- b) Write a program to search a given element in an array by using the pointer. 7
5. Write a C program to copy the contents of a one file into another file using command line arguments. List all the steps required to execute a program. 14
6. Define pointer. How it is declared and initialized ? Explain in detail arithmetic operations that we can perform on pointers with suitable example. 14
7. a) Write a C program to find number is even or odd using bitwise operator. 7
- b) Write a graphics program to display circle, rectangle and line. Fill circle with red color, rectangle with blue and draw line with yellow color. 7
-



Seat No.	
----------	--

M.C.A. – II (Semester – III) (Commerce) Examination, 2014
WEB PROGRAMMING

Day and Date : Saturday, 3-5-2014
Time : 3.00 p.m. to 6.00 p.m.

Total Marks : 70

- Instructions :**
- 1) Q. No. 1 and 7 are **compulsory**.
 - 2) Solve **any two** questions from Q. No. 2, 3 and 4. Solve **any one** question from Q. No. 5 and 6.
 - 3) Figures to the **right** indicate marks to a question or sub-question.

1. A) Multiple Choice Questions.

7

- 1) _____ elements used to specify how text should be display in browser.
A) Physical
B) Logical
C) Both 1 and 2
D) None of the above
- 2) Distance between data in cell and boundaries of cell is known as _____
A) CELLSPACING
B) CELLPADDING
C) All of the above
D) None of the above
- 3) Ceil(X) method of math object in JavaScript is used to _____
A) Return the nearest integer greater than or equal to X
B) Return the nearest integer less than or equal to X
C) Return the angle from the X-axis to a point
D) None of the above
- 4) In VB script _____ function is used to find the highest index number in an array.
A) M Bound
B) Max Bound
C) L Bound
D) None of the above



- 5) The _____ provides access to the structure of an HTML page by mapping the elements in that page to a tree of nodes.
A) Active X B) XML C) DOM D) COM
- 6) The _____ attribute sets up an event to trigger when a reader places his or her mouse over the contents of the heading.
A) Mouseup B) Onmouseover
C) Keypress D) Onmouseup
- 7) _____ is XML based protocol which is used for web services.
A) SOAP B) TCP C) FTP D) HTTP

B) State **True** or **False** :

7

- 1) Font tag having attribute size can take value between 1 to 7.
- 2) XML schema are written in XML.
- 3) Text-transform Controls the letters in an element.
- 4) Session. Timeout have a default value 20 seconds.
- 5) The request object retrieves the values that the client browser passed to the server during an HTTP request.
- 6) Error is data type available in VBScript.
- 7) JavaScript is default language for ASP.

2. Write short answers.

(7×2)

- A) Explain all control structure and loops in JavaScript.
- B) What is a style-sheet ? Explain font, background and text styles with external style sheet.

3. A) What is the purpose of History objects ? Explain its various properties and methods of it.

(7×2)

- B) What is Image mapping ? Explain image mapping with examples.

4. A) Explain various attributes and elements of <form> tag with example.

(7×2)

- B) What is XML ? Write the difference between XML-DTD and XML-schema.



5. A) Explain Session object with example in asp. **(7×2)**
B) Write a short note on DOM object.
6. Write a VBScript code to calculate Sales Commissions as per the sales value is entered. Accepted sales value is in Rs. in a txtsales, if accepted sales value is not in number format then display proper message. After clicking on a Find Commissions button display the Commissions value in a txtcommission. No one should be able to Change the value of commissions, directly in a txtcommission.
Criteria
- i) if Sales < 50 then comm. = 0
 - ii) if Sales > 50 and sales < = 500 then Comm = 10% of sales
 - iii) if Sales > 500 then comm = 18% of sales. **14**
7. Write a asp code as below : **14**
- i) insert records of student in database accepted from the html page.
 - ii) display student record with percentage.

Student table should contain the fields as name, class, mobile_no, mark of 3 subjects.



Seat No.	
----------	--

M.C.A. II (Semester – III) Examination, 2014
(Commerce)
DATA COMMUNICATION AND COMPUTER NETWORKS

Day and Date : Tuesday, 6-5-2014
Time : 3.00 p.m. to 6.00 p.m.

Total Marks : 70

- Instructions :** 1) Q. No. 1 and Q. No. 7 are **compulsory**.
2) Attempt **any two** questions from Q. No. 2, 3 and 4.
Solve **any one** question from Q.No. 5 and Q.No. 6.
3) Figures to **right** indicate marks to a question or sub question.

1. a) Choose the correct option and rewrite the sentences. 7
- 1) Terminators are used in _____ topology.
a) Bus b) Star c) Ring d) Mesh
 - 2) _____ layer decides which physical pathway the data should take.
a) Application b) Network
c) Physical d) Communication
 - 3) ISDN is an example of _____ network.
a) Circuit switched b) Packet switched
c) Message switched d) None of these
 - 4) X.25 is an example of _____ network.
a) Circuit switched b) Packet switched
c) Message switched d) None of these
 - 5) _____ allows LAN users to share computer programs and data.
a) Communication server b) Print server
c) File server d) None of these



- 6) Print server uses _____ which is a buffer that holds data before it is send to the printer.
 a) Queue b) Spool c) Node d) None of these
- 7) A standalone program that has been modified to work on a LAN by including concurrency controls such as file and record locking is an example of
 a) LAN intrinsic software b) LAN aware software
 c) Groupware d) Ignorant software
- b) State **True** or **False**. 7
- 1) OSI stands for Open Sequential Interface.
- 2) The range of frequencies contained in a composite signal is its n = bandwidth.
- 3) Modulation does not allow to use a bandpass channel.
- 4) Bandwidth is measured in bits per second.
- 5) FDM is digital multiplexing technique.
- 6) Waves ranging between 1 to 300 GHz are called microwaves.
- 7) A switched network consists of a series of interlinked nodes.
2. a) Explain different types of network topologies. 7
 b) Explain Circuit switching in short. 7
3. a) Explain X.25 network architecture. 7
 b) Explain TCP/IP model. 7
4. a) What is transmission protocol ? Explain its functions. 7
 b) What is broad band ? Explain various broad band networks. 7
5. a) Write a note on : IP Routing. 7
 b) Explain DNS in detail. 7
6. a) Write a note on : MIME. 7
 b) Explain the terms : 7
 i) POP ii) IMAP iii) FTP.
7. Explain detail network threats and security measures available. 14
-



Seat No.	
-------------	--

M.C.A. – II (Semester – III) Examination, 2014
(Commerce and Management Faculty)
ADVANCED DATABASE MANAGEMENT SYSTEM

Day and Date : Saturday, 10-5-2014

Max. Marks : 70

Time : 3.00 p.m. to 6.00 p.m.

- Instructions:** i) Q. No. 1 and Q. No. 7 are **compulsory**.
ii) Attempt **any two** questions from Q. No. 2, 3 and 4.
iii) Attempt **any one** question from Q.No. 5 and Q.No. 6.
iv) Figures to the **right** indicate **full** marks.

1. A) Choose the correct answer :

7

- a) The active data warehouse architecture includes which of the following ?
a) At least one data mart
b) Data that can extracted from numerous internal and external sources
c) Near real-time updates
d) All of the above
- b) _____ helps to integrate homogeneous database system with multiple database and data types other than relational data types.
a) OODBMS b) ROLAP c) MOLAP d) HOLAP
- c) A multifold transformation does which of the following :
a) Converts data from one field into multiple fields
b) Converts data from multiple fields into one field
c) Converts data from multiple fields into multiple fields
d) All of the above



- d) Transient data is which of the following ?
- a) Data in which changes to existing records cause the previous version of the records to be eliminated
 - b) Data in which changes to existing records do not cause the previous version of the records to be eliminated
 - c) Data that are never altered or deleted once they have been added
 - d) Data that are never deleted once they have been added
- e) A star schema has what type of relationship between a dimension and fact table ?
- a) Many-to-many
 - b) One-to-one
 - c) One-to-many
 - d) All of the above
- f) The generic two-level data warehouse architecture includes which of the following ?
- a) At least one data mart
 - b) Data that can be extracted from numerous internal and external sources
 - c) Near real-time updates
 - d) All of the above
- g) Fact tables are which of the following ?
- a) Completely demormalized
 - b) Partially demormalized
 - c) Completely normalized
 - d) Partially normalized

B) State **True** or **False** :

7

- a) A data mart is designed to optimize the performance for well-defined and predictable uses.
- b) Successful data warehousing requires that a formal program in total quality management (TQM) be implemented
- c) Data in operational systems are typically fragmented and inconsistent.
- d) Most operational systems are based on the use of transient data.
- e) Independent data marts are often created because an organization focuses on a series of short-term business objectives.
- f) Joining is the process of partitioning data according to predefined criteria.
- g) The role of the ETL process is to identify erroneous data and to fix them.



2. a) How does the association technique apply to data mining ? 7
- b) In OLAP, what is the meaning of the terms drill down, roll up, and slice ? 7
3. a) A distributed database system is designed and engineered to satisfy certain fundamental properties, these being :
- distributed queries;
 - independence of location (location transparency);
 - global access control policy;
- Explain why the above properties are important in a distributed database system. 7
- b) Explain how spatial data represented on a two dimensional map can be represented in the relational model of data. 7
4. Write a short note on **(any two)** : 14
- a) Machine Learning
 - b) K – means algorithm.
 - c) Multimedia database.
5. Describe the four key features of XML technologies (listed below) which are deployed for web services :
- Integration with the Web,
 - Data can freely travel over the Web,
 - Strong Data independence,
 - Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL) and Universal Description Discovery and Integration (UDDI). 14



6. What are the distinctive characteristics of a database application that supports OLAP ?

Suppose you were to design a database for an OLAP application, briefly explain how your approach to schema design would differ with that of a traditional On Line Transaction Processing (OLTP) application ?

14

7. With the rapid development of Internet technology, database driven web sites have become an essential component for enterprise applications.

Give example(s) of software architecture(s) for a database driven web site, including of the relevant services and programming languages that are required.

14



Seat No.	
-------------	--

**M.C.A. II (Semester – III) Examination, 2014
(Commerce)
MANAGEMENT SUPPORT SYSTEMS AND IS SECURITY**

Day and Date : Tuesday, 13-5-2014
Time : 3.00 p.m. to 6.00 p.m.

Total Marks : 70

- Instructions :** 1) Q. No. 1 and Q. No. 7 are **compulsory**.
2) Attempt **any two** questions from Q. No. 2, 3 and 4. Solve **any one** question from Q. No. 5 and Q. No. 6.
3) Figures to **right** indicate marks to a question or sub question.

1. a) Choose the correct option and rewrite the sentences. 7
- 1) Information system exist because they provide organization with a _____ advantage.
a) creative b) competitive c) fiscal d) MIS
- 2) _____ is the catalyst and nerve centre of the organisation.
a) MIS b) BOS c) GIS d) CASE
- 3) A system that reacts to its environment in such a way to improve its functioning is called _____ system.
a) non adaptive b) information analysis
c) adaptive d) Big Bang
- 4) A business firm is an example of _____ system.
a) Open b) Close c) MIKE d) Social
- 5) _____ is typically designed for other particular decision maker or a group of decision maker.
a) MIS b) IS c) DSS d) EIS



6) _____ summarize and present data at highest levels of aggregation.

- a) ESS b) BOS c) DIS d) ES

7) The business functions of _____ are concerned with the planning, promotion and sale of existing products.

- a) Production b) Marketing
c) Finance d) HR

b) State **true** or **false** :

7

1) MIS should not be installed unless the managers are trained to evaluate.

2) DSS automates the decision making process.

3) DSS helps in unstructured decision making.

4) Transaction processing is not significant in term of processing time and data volume.

5) Computer and human act as partners in an IS.

6) If the culture of the organization is closed and inflexible, there will not be resistance for MIS.

7) Research and development laboratory in studying and controlling is an example of non-stationary system.

2. a) Explain general model of a system.

7

b) Write a short note on : Feedback Control.

7

3. a) What are the different information needs at different levels for the managers ? Explain in short.

7

b) Explain the structure of MIS based on management activity and functions.

7

4. a) What is decision making ? Explain the type of information needed at different phases of decision making.

7

b) Explain Newell-Simon model in detail.

7



- 5. a) Differentiate between MIS and DSS. **7**
 - b) What is Executive Information System ? Explain its implementation steps. **7**
 - 6. a) Differentiate between Conventional System and Expert System. **7**
 - b) Why is auditing of IS needed ? Explain in short. **7**
 - 7. The production manager of a medium scaled industry needs various kinds of information for meeting the production targets. Imagining yourself as production manager of this company, design proper information system that you make use of smooth functioning of your department. **14**
-



Seat No.	
-------------	--

M.C.A. II (Semester – IV) (Commerce) Examination, 2014
JAVA PROGRAMMING

Day and Date : Monday, 5-5-2014
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- Instructions:** 1) Q. No. 1 and 7 are **compulsory**.
2) Solve **any two** questions from Q. No. 2, 3 and 4. Solve **any one** question from Q. No. 5 and 6.
3) Figure to the **right** indicates marks to a question or sub question.

1. A) Choose the correct alternative :

6

- 1) Interface cannot be extended
a) True b) False
- 2) Import statement is always the first non-comment statement in java program file.
a) True b) False
- 3) The default layout of Frame is _____
a) GridLayout b) FlowLayout
c) BorderLayout d) GridBagLayout
- 4) A catch clause may catch exceptions of which type ?
a) Throwable b) Exception
c) Error d) String Type
- 5) _____ is a drawback of Multithreading.
a) Race condition b) Deadlock condition
c) Starvation d) a, b & c
- 6) _____ is a process by which a primitive type is automatically Encapsulated into its equivalent type wrapper.
a) Auto boxing b) Auto Unboxing
c) Both a & b d) None

P.T.O.



B) Identify the output of the following snippets (**any 2**):

4

1) String s = "Java is cool.";

```
StringTokenizer t = new StringTokenizer (s, "ac");
```

```
System.out.println ("The total number of tokens is" + t.countTokens ( ) ) ;
```

```
while (t.hasMoreTokens ( ) )
```

```
System.out.println (t.nextToken ( ) ) ;
```

2) public class AIDemo extends Applet {

```
public void init ( ) {
```

```
addMouseListener (new MouseAdapter ( ) {
```

```
public void mousePressed (MouseEvent me) {
```

```
showStatus ("Mouse Pressed") ;
```

```
}
```

```
}) ;
```

```
}
```

```
}
```

3)

```
try
```

```
{
```

```
int x = 0 ;
```

```
int y = 5 / x ;
```

```
}
```

```
catch (Exception a)
```

```
{
```

```
System.out.println ("Exception") ;
```

```
}
```

```
catch (ArithmeticException ae)
```

```
{
```

```
System.out.println ("Arithmetic Exception") ;
```

```
}
```

```
System.out.println ("finished") ;
```




C) Answer in **1-2** sentences :

4

- i) What will happen, if main () function is defined as private ?
- ii) What is a Class Path ?
- iii) What kind of thread is the Garbage collector thread ?
- iv) Define Socket and state 2 important socket classes.

2. Attempt the following :

(2×7)

- i) What is an applet ? How do Applets differ from Applications ?
- ii) Explain Serialization. Write a java program to append the contents of the file “a1.txt” to “a2.txt”.

3. Attempt the following :

(2×7)

- i) Explain thread Synchronization with example.
- ii) What is EJB ? Explain different types of EJB in detail.

4. Attempt the following :

- i) Write java socket program that runs on a server and echos back all the string sent by a client. If the client send a string ‘Exit’, the server program should terminate. Use port number 60000.

(2×7)

- ii) Explain steps involved in RMI application with example.

5. Write a GUI based program to enter the roll no in the textbox and view all the details like name, address, contact no, date_of_birth on the other text boxes. (Retrieve values from database using JDBC).

(1×14)

6. Write a java program that display Text field where user can type file name. When file name is entered, the program should check whether file exists. If it does not, an error message should be flashed on the screen. And if it is, then it should display contents of the file in the text area.

(1×14)

7. Short notes **any 2** :

- a) Layout Managers
- b) JDBC drivers
- c) Thread Life cycle
- d) Delegation Event Model in Java.

(2×14)



Seat No.	
-------------	--

**M.C.A. – II (Semester – IV) (Commerce) Examination, 2014
OBJECT ORIENTED ANALYSIS AND DESIGN**

Day and Date: Friday, 9-5-2014

Total Marks : 70

Time: 3.00 p.m. to 6.00 p.m.

- Instructions :** 1) *Que. No. 1 and Que.No. 7 are compulsory.*
2) *Attempt any two questions from Q.2 to Q.4.*
3) *Attempt any one question from Q.5 to Q.6.*
4) *All questions carry equal marks.*

1. A) Select the correct alternative.

7

- 1) In activity diagram _____ represents decision points.
a) swimlane b) fork c) diamond d) join
- 2) _____ diagram shows the physical architecture of a computer based system.
a) Class b) Deployment c) Component d) Sequence
- 3) In Matrics NOC stands for
a) Number of Classes b) Number of Children
c) Number of Coupling d) None of these
- 4) A _____ involves a general description of a solution to a recurring problem bundle with various goals and constraints.
a) Pattern b) Test cases
c) Test plan d) None of these
- 5) _____ methodology prescribes macro and micro development process.
a) Rumbaugh b) Booch
c) Ivar Jacobson d) Coad Yourden
- 6) Testing the user interface using a _____ approach means testing interface navigations.
a) Bottom up b) Top-down c) Black box d) White box
- 7) A _____ is shown as a dashed arrow between two model elements.
a) Association b) Cardinality
c) Dependency d) None of these

P.T.O.



- B) State whether the following statement is **True** or **False**. **7**
- 1) A test plan is developed to detect and identify potential problems after delivering the software to its user.
 - 2) Inheritance is mechanism for defining a new class in terms of an existing class.
 - 3) OOSE is introduced by Ivar Jacobson.
 - 4) Fuzzy classes in Noun Phrase approach of class identification are eliminated.
 - 5) Elaboration phase of RUP require more time as compared to other three phases.
 - 6) An aggregation specifies a part-whole association.
 - 7) Multiple inheritance permits a class to have more than one superclass and to inherit features from all parents.
2. A) Explain Object Modeling Technique. **7**
- B) What is the inheritance ? Explain different types of inheritance. **7**
3. Explain Unified Approach in detail. **14**
4. A) What is use case diagram ? Explain use case relationship with example. **7**
- B) Discuss CRC approach for class identification with example. **7**
5. A) Compare Aggregation and Composition with a suitable example. **7**
- B) Explain object oriented testing. **7**
6. A) Discuss about UML Deployment and Component diagrams. **7**
- B) Differentiate between object oriented and relational database. **7**
7. What are the various diagrams that are used in analysis and design steps of Booch Methodology ? Explain with your own example. **14**
-



- 3) In converting a less-than-or-equal constraint for use in a simplex table, we must add
 - a) a surplus variables
 - b) a slack variable
 - c) an artificial variable
 - d) both a surplus and a slack variable

- 4) Which of the following is not a type of integer programming problem ?
 - a) pure integer programming problem
 - b) blending problem
 - c) zero-one programming problem
 - d) mixed-integer programming problem

- 5) Time an activity would take assuming very unfavorable conditions is represented by the
 - a) optimistic time (a)
 - b) most likely time (m)
 - c) deterministic time (d)
 - d) pessimistic time (b)

- 6) In the A/B/C designation for queuing systems, the B term represents information about
 - a) arrival rates
 - b) service times
 - c) number of channels
 - d) size of the queue

- 7) The main purpose of inventory management is usually to
 - a) minimize the cost of purchasing inventory
 - b) maximize customer satisfaction
 - c) increase the safety stock level
 - d) minimize the overall cost of inventory



B) State **true** or **false** :

7

- 1) If the right-hand side of a constraint is changed, the feasible region will not be affected and will remain the same.
- 2) The situation that occurs when we have no solution that satisfies the constraints is referred to as infeasibility.
- 3) All variables in a linear programming problem (real, slack, surplus, or artificial) must be positive.
- 4) The transportation problem is a good example of a pure integer programming problem.
- 5) In PERT, we assume that activity times are deterministic, while in CPM we assume that activity times are probabilistic.
- 6) In the multichannel model (M/M/m) we must assume that the average service time for all channels is the same.
- 7) ABC Analysis divides inventory into three groups.

2. a) Solve the following LPP by using 2-phase Simplex method

7

Minimizes $Z = x_1 + x_2$

Subject to : $2x_1 + 4x_2 \geq 4$

$$x_1 + 7x_2 \geq 12$$

and $x_1, x_2 \geq 0$ and integers.



b) Solve the following assignment problem :

7

A company has one surplus truck in each of the cities A, B, C, D and E and one deficient truck in each of the cities 1, 2, 3, 4, 5 and 6. The distance between the cities (in Km) is shown in matrix below

From City Surplus	To City (deficit)					
		1	2	3	4	5
A	12	10	15	22	18	8
B	10	18	25	15	16	12
C	11	10	3	8	5	9
D	6	14	10	13	13	12
E	8	12	11	7	13	10

Find the assignment of truck from cities in surplus to cities in deficit so that the total distance covered by vehicles in minimum.

3. a) A steel company has three open hearth furnaces and five rolling mills. Transportation costs (Rs./quintal) for shipping steel from furnaces to rolling mills are shown in the following table

7

	M ₁	M ₂	M ₃	M ₄	M ₅	Supply
F ₁	4	2	3	2	6	8
F ₂	5	4	5	2	1	12
F ₃	6	5	4	7	7	14
Demand	4	4	6	8	8	

What is the optimal shipping schedule ?



b) Solve the following integer programming problem using branch and bound method 7

Minimizes $Z = 3x_1 + 2.5x_2$

Subject to : $x_1 + 2x_2 \geq 20$

$3x_1 + 2x_2 \geq 50$

$x_1, x_2 \geq 0$ and integers.

4. a) Explain the following term in LPP 7

i) Feasible solution

ii) Optimum solution

iii) Slack variable

iv) Objective function

v) Constraints.

b) A Xerox machine in an office is operated by a person who does other jobs also. The average service time for a job is 6 minutes per customers. On averages, every 12 minutes one customers arrive for Xeroxing. Find.

a) the Xerox machine utilization,

b) percentage of times that an arrival has not to wait,

c) average time spent by a customer,

d) average queue length

e) the arrival rate, if the management is willing to deploy the person exclusive for Xeroxing when the average time spent by a customer exceeds 15 minutes. 7

5. a) Explain the following term : 7

i) Optimistic Time

ii) Pessimistic Time

iii) Most likely time regarding an activity

iv) PERT.



- b) The research department of Hindustan Lever has recommended the marketing department to launch the shampoo of three different types. The marketing manager has to decide one of the types of shampoo to be launched under the following estimated pay-off for various levels of sales.

7

Types of Shampoo	Estimated Levels of Sales (Units)		
	Rs. 15,000	Rs. 10,000	Rs. 5,000
Egg Shampoo	30	10	10
Clinic Shampoo	40	15	5
Delux Shampoo	55	20	3

What will be the marketing manager's decision ?

- i) Maximin
- ii) Minimax
- iii) Maximax
- iv) Laplace.

6. a) Explain the inventory model with shortage.

7

- b) Consider the following data :

7

Unit cost	:	Rs. 100
Order Cost	:	Rs. 160
Inventory carrying cost	:	Rs. 20
Back-order cost (due to stockout cost)	:	Rs. 10
Annual demand	:	1000 units

Compute the following :

- a) Minimum cost order quantity
- b) Time between orders
- c) Maximum number of back orders
- d) Maximum inventory level
- e) Overall annual cost.



- 7. a) What are the types of decision making environment ? Explain any one in details. 7

- b) The time estimates (in weeks) for the activities of a PERT network are given below : 7

Activity Sequence	Time Duration		
	Optimistic	Most Likely	Pessimistic
1 – 2	1	1	7
1 – 3	1	4	7
1 – 4	2	2	8
2 – 5	1	1	1
3 – 5	2	5	14
4 – 6	2	5	8
5 – 6	3	6	15

- i) Draw the project network and identify all the path through it.
 - ii) Determine the expected project length.
 - iii) Calculate standard deviation and variance of the project length.
-



- 5) _____ function has the primary objective of providing suitable manpower in number and with certain ability, skills and knowledge, as the business organization demands from time to time.
- A) Financial management B) Marketing management
C) Personnel management D) Costing
- 6) _____ includes all of the functional and technical characteristics that the company wants to implement.
- A) Resource B) Scope C) Speed D) Accuracy
- 7) _____ phase will decide when to begin the project, how to do it and when the project is to-be completed.
- A) Project planning B) Screening
C) Package evaluation D) Testing
- 8) The _____ will need a different set of roles and skills than those with less integrated types of systems.
- A) end user training B) testing
C) going live D) post implementation
- 9) _____ is the key to the power of decision analysis in situations in which the value of the probabilities is not known precisely.
- A) Problem Analysis B) Problem Definition
C) Sensitivity Analysis D) None of the above
- 10) _____ is generally associated with the buying and selling of information, products and services via computer network or internet.
- A) M-commerce B) E-commerce
C) Internet commerce D) All of these
- 11) _____ discovers hidden value in data warehouse.
- A) SCM B) PBR C) Data Mining D) OLTP
- 12) A _____ is a subject oriented, time variant, non-volatile collection of data in support of management for decision making support.
- A) OLAP B) Data Warehouse
C) Data Mining D) DBMS
- 13) _____ is an interacting computer based system that helps the decision maker in the use of data and models In the solution of unstructured problems.
- A) DSS B) EIS C) Data Mining D) ERP



- 14) _____ is the step in which the work is almost complete, data conversion is done, databases are up and running.
- A) Reengineering
 - B) Going-Live
 - C) End User Training
 - D) Post Implementation
2. A) Why is ERP called the most important tool for business process re-engineering ? **7**
- B) Define Transition Strategies. What are the different types of transition strategies ? **7**
3. A) Explain importance of ERP to the success or failure of any business organization. **7**
- B) What do you mean by pre-evaluation screening and what are the activities done in this phase ? **7**
4. Explain in brief Human Resource and Sales Distribution Module of ERP. **14**
5. A) How does data warehousing improve the efficiency of ERP system ? **7**
- B) Explain Gap Analysis. **7**
6. Why OLAP is called fast analysis of shared multidimensional information ? **14**
7. Write short notes on : **14**
- A) Supply Chain Management
 - B) Data Mining.
-



Seat No.	
-------------	--

**M.C.A. (Part – III) (Semester – V) Examination, 2014
(Commerce)
HUMAN COMPUTER INTERFACE**

Day and Date : Saturday, 3-5-2014

Total Marks : 70

Time : 11.00 a.m. to 2.00 p.m.

- Instructions:** 1) Q. 1 and Q. 7 are **compulsory**.
2) Attempt **any two** questions from Q. 2 to Q. 4.
3) Attempt **any one** question from Q. 5 to Q. 6.
4) Figures to the **right** indicate **full** marks.

1. A) Select the correct alternative :

7

- 1) GOMS stands for _____
 - A) Goals, Operators, Methods, Selection rules
 - B) Goals, Operators, Menu, Sample
 - C) Goals, Order, Methods, Selection rules
- 2) _____ is Layout used firstly for key board design firstly.
 - A) QWERTY B) ABCDE C) Dvorak
- 3) HCI is the human centric study of interaction between
 - A) Computer H/w and S/w
 - B) Users and computers
 - C) Users and Developers
- 4) Usability testing is _____ technique.
 - A) White box testing
 - B) Black box testing
 - C) Other than these



- 5) _____ is example of synchronous interfaces.
A) E-mail B) Chatting C) Blogs and Wikis
- 6) _____ is the primary source of feedback to the user from computer.
A) Printed Copy
B) Audio information
C) Visual display unit
- 7) In _____ review method expert's reviewers' reviews interface with eight golden rules.
A) Guidelines review
B) Heuristic evaluation
C) Consistency Inspection

B) Stae **True** or **False** :

7

- 1) The Photo search in Information search and visualization is done by Query-by-Image Content.
- 2) Acceptance testing is carried out by testing it on users.
- 3) Shorter system response time usually lead a higher productivity.
- 4) James reason has extensively analyzed human errors and distinguishes between mistakes and slips.
- 5) AOI the user first select an action to be performed and then selects the object on which this action will be performed.
- 6) In participatory design end users, testers, organizational experts and technical designers are not involved actively.
- 7) Dialog boxes are special windows which is combination of menu and form filling design techniques.



2. A) How the human computer interaction and user interface design is related ?
Explain about each. 7
B) What is system engineering ? Explain different goals of system engineering. 7
 3. A) Explain cooperation and its goals in brief. 7
B) Discuss Reasons of error generation and Guidelines to error message. 7
 4. A) List and explain different ways to minimize the ocmplexity in user interface design. 7
B) Explain Guidelines of successful user interface design. 7
 5. Shivam Agro Chem. Ltd. is one of the leading agro based chemical manufacturing company; wants to design Web based Applications to centralize the information of different customers and venders. Also wants to provide information about different products and their importance to the end users. As an EDP manager you are asked to design different guidelines to develop good HCI software. Give possible guidelines to design good user interface. 14
 6. State and explain diversity factors in Interface design. 14
 7. Write short notes on **any two** : 14
 - A) GOMS and Keystroke model
 - B) Data input guidelines
 - C) CSCW to education
 - D) Ways to get user attention while designing UI.
-



6) _____ function in PHP is used to participate the page in session tracking.

- a) session_participate() b) session_start()
c) session_create() d) none of these

7) _____ method in Request Dispatcher is used to forward request to next page/servlet.

- a) forward() b) next()
c) include() d) sendRedirect()

B) Simplify the **true** and **false** from following :

7

- 1) <web-app> is root tag in web.xml file.
- 2) start() is lifecycle method of servlet.
- 3) getInitParameter() method is used to retrieve the parameters from request object.
- 4) For every request, the lifecycle method init() of servlet is called.
- 5) In PHP, to call method from object -> (arrow) operator is used.
- 6) The GET method is idempotent, means multiple identical requests should have the same effect as a single request.
- 7) OLX.com is an example of consumer to consumer E-commerce.

2. A) Explain Servlet life cycle in detail.

7

B) Differentiate between servlet and CGI.

7

3. A) Explain implicit objects in JSP.

7

B) Write a PHP application to accept employee details such as empid, empname, salary etc from user. And print these details in browser.

7

4. A) Describe cookies in PHP with example.

7

B) Explain arrays and strings in PHP.

7



5. A) Explain servletconfig with example. 7
- B) Develop servlet application to accept username and password from user. Match accepted username and password with correct usernames and password. If match, display message “You are valid user” otherwise display “You are invalid user” in browser. 7
6. Develop PHP application to perform following things. 14
- i) Create Table Product with fields such as ProductId, ProductName, Price etc in databse.
 - ii) Insert product information (productId, ProductName and Price) in Product table.
 - iii) Retrieve all products information from Product table and display in browser. Handle necessary exceptions while developing above application.
7. Write a short note on (**any two**) : 14
- A) E-Cash
 - B) HttpSession in Servlet
 - C) Object Oriented PHP.
-



Seat No.	
-------------	--

MCA – I (Semester – I) Examination, 2014
Commerce
OPERATING SYSTEM CONCEPTS (Old)

Day and Date : Saturday, 10-5-2014

Max. Marks : 70

Time : 11.00 a.m. to 2.00 p.m

- Instructions:** 1) Que. No. 1 and 7 are **compulsory**.
2) Attempt **any two** questions from Q. 2 to Q. 4.
3) Attempt **any one** question from Q. 5 and Q. 6.
4) **All** question carry **equal** marks.

1. A) Choose the correct alternative : 10
- 1) The Scheduling in which CPU is allocated to the process with least CPU-burst time is called _____
 - a) Priority scheduling
 - b) Shortest job first scheduling
 - c) Round Robin scheduling
 - d) Multilevel scheduling
 - 2) The “turn-around” time of a user job is the _____
 - a) time since its submission to the time its results become available
 - b) time duration for which the CPU is allocated to the job
 - c) total time taken to execute the job
 - d) time taken for the job to move from assembly phase to completion phase
 - 3) Which of the following is not a fundamental process state ?
 - a) ready
 - b) terminated
 - c) executing
 - d) blocked
 - 4) ‘LRU’ Page replacement policy is _____
 - a) Last Replaced Unit
 - b) Last Restored Unit
 - c) Least Recently Used
 - d) Least Required Unit



- 5) Which amongst the following is not an advantage of distributed system ?
- a) Reliability
 - b) Incremental growth
 - c) Resource sharing
 - d) None of the above
- 6) Which of the following loader executed when a system is first turned or restored ?
- a) Boot loader
 - b) Compiler and Go loader
 - c) Boot strap loader
 - d) Relating loader
- 7) Which scheduling policy is must suitable for a time shared operating system ?
- a) Shortest job first
 - b) Elevator
 - c) Round Robin
 - d) First come first serve
- 8) A critical section is a program segment
- a) Which should run in a certain specified amount of time
 - b) Which avoids deadlocks
 - c) Where shared resources are accessed
 - d) None of above
- 9) A O.S contains 3 user processes each require 2 units of resourcess R. The minimum no. of units of R such that no dead locks will ever arise is _____
- a) 4
 - b) 3
 - c) 5
 - d) 6
- 10) Jobs which are admitted to the system for processing is called _____
- a) Long term scheduling
 - b) Short term scheduling
 - c) Medium term scheduling
 - d) Queuing

B) State whether **True** or **False** :

4

- 1) Banker's Algorithm is also called as Deadlock Avoidence algorithm.
- 2) Paging suffers from external fragmentation.
- 3) LRU Replacement algorithm does not suffer from Belady's Anomaly.
- 4) Virtual memory is implemented by demand paging.

2. Answer the following :

14

- 1) What is system cull ? Explain how it works.
- 2) Explain paging in detail.



3. Answer the following : 14

- 1) What is process ? Explain process state transition diagram in detail.
- 2) Explain the need for synchronization in detail.

4. Answer the following : 14

- 1) Explain segmentation in detail.
- 2) What is operating system ? Explain all the services provided by operating system.

5. What is scheduling ? Explain scheduling criteria. Explain any two scheduling algorithm with the help of example.

6. Consider the following snapshot of a system. 14

	Allocation				MAX				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P ₀	0	0	1	2	0	0	1	2	1	5	2	0
P ₁	1	0	0	0	1	7	5	0				
P ₂	1	3	5	4	2	3	5	6				
P ₃	0	6	3	2	0	6	5	2				
P ₄	0	0	1	4	0	6	5	6				

Answer the following questions using Banker's algorithm.

- a) What is content of matrix need ?
- b) Is the system in safe state ?
- c) If a request from process P₁ arrives for (0, 4, 2, 0) can request be granted immediately ?

7. Write a short note on (any 2) : 14

- a) Deadlock Detection and Recovery
 - b) Semaphore
 - c) Virtual machine.
-



Seat No.	
----------	--

**M.C.A. (Part – III) (Semester – V) Examination, 2014
(Commerce and Management Faculty)
(IT Elective) CYBER LAW AND I.T. SECURITY**

Day and Date : Tuesday, 13-5-2014

Total Marks : 70

Time : 11.00 am to 2.00 pm.

Instructions : 1) Q. 1 and Q. 7 are **compulsory**.

2) Solve **any two** questions from Q. 2 to Q. 4.

3) Solve **any one** question from Q. 5 and Q. 6.

1. A) Fill in the blanks with correct option.

8

I) The objective of IT Act is to give legal recognition to _____ for accepting any agreement via computer.

- a) source code
- b) digital signature
- c) email
- d) transaction

II) According to I.T. Act 2000, any company can store their data in _____

- a) file
- b) database
- c) secondary storage
- d) electronic storage

III) _____ is a technique which converts plain text in to cipher text.

- a) Encryption
- b) Digital signature
- c) Decryption
- d) Cryptography

IV. In _____ only one key is used for encryption and decryption.

- a) asymmetric cryptography
- b) symmetric cryptography
- c) steganography
- d) RSA

V) For message authentication _____ is used.

- a) password
- b) digital signature
- c) unique key
- d) algorithm

VI) Digital signature is issued by

- a) programmer
- b) controller
- c) state government
- d) certifying authority



VII) RSA algorithm is developed in _____

- a) 1980 b) 1979 c) 1978 d) 1977

VIII) Destroys or deletes or alters any information residing in a computer resource is _____

- a) tempering b) theft c) hijacking d) hacking

B) Define following : **6**

- I) Encryption
- II) Digital Signature
- III) Certifying Authority.

2. A) What is the IT Act 2000 ? **14**

B) Explain Cyber Squatting and Reverse Hijacking.

3. A) Explain different function of Controller. **14**

B) Explain Cyber Regulations Appellate Tribunal.

4. A) Explain the concept of Domain Names. **14**

B) What do understand by encryption ? Explain.

5. What is digital signature ? Write the steps for creating and verifying digital signature. **14**

6. Explain cryptography and different cryptography algorithm. **14**

7. Explain different Cyber Crimes. **14**



Seat No.	
-------------	--

M.C.A. (Part – III) (Semester – V) Examination, 2014
(Commerce and Management Faculty)
IT Elective : ADVANCED UNIX

Day and Date : Tuesday, 13-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

- Instructions :**
- 1) Q. No. 1 and 7 are **compulsory**.
 - 2) Solve **any two** questions from Q. No. 2, 3 and 4. Solve **any one** question from Q. No. 5 and 6.
 - 3) Figure to the **right** indicate marks to a question or sub question.

1. Choose correct alternative :

14

- 1) The _____ system call allows a process to make a New program by overlying its address space with the executable file image of the program.
A) fork() B) exec() C) wait() D) brk()
- 2) At what mode the fault handler executes ?
A) execution mode B) kernal mode
C) operation mode D) none
- 3) _____ allows us to output a single character at a time, knowing that actual I/O will take place only when we finish writing each line.
A) Fully buffered B) Unbuffered
C) Line buffered D) None of above
- 4) _____ is intermediate between file system and block device for interaction.
A) Shock absorber B) Cache RAM
C) Cache Block D) Buffer Cache
- 5) Each open file (or device) has a v-node structure that contains information about the type of file and pointers to functions that operate on the file.
A) i-Node B) Tree-Node
C) v-Node D) None of above

P.T.O.



- 2. a) Explain concept of signals in detail. **7**
b) Explain process termination. **7**
 - 3. a) Explain Process User IDs and Process Group IDs. **7**
b) Explain *pclose* function in standard I/O library. **7**
 - 4. a) Explain Fork () in Unix. **7**
b) Discuss about Files in Unix. **7**
 - 5. Explain the UNIX architecture with block diagram. **14**
 - 6. Explain IPC's FIFO in detail with example. **14**
 - 7. Explain in detail memory layout of C program and memory management routine. **14**
-



Seat No.	
----------	--

M.C.A. (Part – III) (Semester – V) Examination, 2014
(Commerce and Management Faculty)
IT Elective : WIRELESS MOBILE COMPUTING

Day and Date : Tuesday, 13-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 70

Instructions : 1) Q. No. 1 and 7 are **compulsory**.

2) Solve **any two** questions from Q. No. 2, 3 and 4. Solve **any one** question from Q. No. 5 and 6.

3) Figure to the **right** indicate marks to a question or sub question.

1. Choose correct alternative.

14

- 1) _____ are the sub systems used in GSM.
A) Base Station Subsystem B) Network Subsystem
C) Both A and B D) None of above
- 2) All of the cell sites are connected to _____, which in turn connect to the *public telephone network*.
A) Telephone Exchange B) Telephone Operator
C) Mobile Operator D) None of Above
- 3) In a _____ handoff protocol, the network makes a handoff decision based on the measurements of the MSs at a number of BSs.
A) Network-Controlled Handoff B) 2 Mobile-Assisted Handoff
C) Mobile-Controlled Handoff D) None of above
- 4) Most modern WLANs are based on IEEE 802.11 standards, marketed under the _____ brand name.
A) Internet B) Wireless Internet
C) Wi-Fi D) Bluetooth
- 5) The interface between MSC and BSC is called
A) Abis B) A C) O D) Um

P.T.O.



- 2. a) What are the advantages and disadvantages of WLAN ? **7**
 - b) Which are different methods of Handoff decision ? **7**
 - 3. a) Explain the different supplementary services in GSM. **7**
 - b) Explain Zone Routing Protocol (ZRP) **7**
 - 4. a) Explain Aglets Mobile Agent. **7**
 - b) Explain MSC. **7**
 - 5. Explain different Routing techniques in Ad hoc network. **14**
 - 6. Write the advantages and disadvantages of Mobile Agent Programming. **14**
 - 7. Explain different access technologies such as Bluetooth, GPRS, CDMA, IEEE 8.11 and Wi-Fi in details. **14**
-



Seat No.	
-------------	--

M.C.A. – I (Semester – I) Examination, 2014
(Commerce and Management Faculty)
DISCRETE MATHEMATICS (Old)

Day and Date : Tuesday, 13-5-2014

Max. Marks : 70

Time : 11.00 a.m. to 2.00 p.m.

Instructions : 1) Q. No. 1 and 7 are **compulsory**.

2) Solve **any two** questions from Q. No. 2, 3 and 4.

Solve **any one** question from Q.No. 5 and 6.

3) Figures to the **right** indicate **full** marks to question.

1. A) Choose the correct alternative.

10

1) The equivalence of two proposition A and B is denoted by

- i) $A \Leftrightarrow B$ ii) $A \rightarrow B$ iii) $A \equiv B$ iv) Both i and iii

2) $p \rightarrow q =$ _____

- i) $\neg p \vee q$ ii) $\neg p \vee \neg q$ iii) $p \vee q$ iv) $q \vee p$

3) A graph in which all vertices set can be partitioned into two set is and for every edge both vertices are from distinct set is called

- i) Simple graph ii) Regular graph
iii) Bipartite graph iv) Planer graph

4) A Graph without loop and parallel edges is called _____ graph.

- i) Simple graph ii) Regular Graph
iii) Bipartite graph iv) Planer graph

5) If $a * e = e * a = a$ then e is called

- i) Inverse of a ii) Inverse of b
iii) Identity element iv) Factor of a

P.T.O.



3. A) If $S = \{1, 2, 3, 4, 5\}$ and if function $f, g, h : S \rightarrow S$ are given by 7

$$f = \{(1, 2), (2, 1), (3, 4), (4, 5), (5, 3)\}, g = \{(1, 3), (2, 5), (3, 1), (4, 2), (5, 4)\},$$

$$h = \{(1, 2), (2, 2), (3, 4), (4, 3), (5, 1)\}.$$

i) Find $f \circ g$ and $g \circ f$

ii) Find f^{-1} and g^{-1}

iii) Show $(f \circ g)^{-1} = (g^{-1} \circ f^{-1})$

iv) Show $(f \circ g)^{-1} \neq (f^{-1} \circ g^{-1})$

B) If $A = \{1, 2, 3, 4\}$ and the R is relation on set A is defined by $(a, b) R (c, d)$ if $a + b = c + d$ verify that R is equivalence relation ? Find the Quotient set of A by R i.e. (A/R) . 7

4. A) Let A be the set of +ve factors of 45 and let \leq be the relation divides i.e. $\leq = \{<x, y> | x, y \in A \text{ and } x \text{ divides } y\}$. Draw the Hasse diagram. 7

B) Find the value of prefix expression $+ - * 235 / \uparrow 234$. 7

5. A) Define Graph. Explain Euler Graph and Hamilton Graph in detail with examples. 7

B) Define functions. Explain types of function. 7

6. Find codewords generated by parity check matrix. 14

$$1 \ 0 \ 1 \ 1 \ 1 \ 0 \ 1$$

$$1 \ 1 \ 1 \ 0 \ 0 \ 1 \ 0$$

$$0 \ 1 \ 1 \ 1 \ 0 \ 0 \ 1$$

7. Explain cyclic group. Show that the set of $\{1, -1, i, -i\}$ is a cyclic group under multiplication. 14



Seat No.	
-------------	--

M.C.A. (Commerce – I) (Semester – I) Examination, 2014
C PROGRAMMING (New)

Day and Date : Tuesday, 6-5-2014

Max. Marks : 70

Time : 11.00 a.m. to 2.00 p.m.

Instructions : 1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

1. Select the correct alternative. **10**
- 1) What is lifetime of variable ?
 - a) Parts of the program where the variable is available
 - b) Length of time that the variable retains a particular value
 - c) Scope of the variable
 - d) None of these
 - 2) What does “ch” in the following statement contain ?
Char ch = ‘A’;
 - a) A
 - b) ASCII code of A
 - c) Binary equivalent of ASCII code of A
 - d) Decimal equivalent of hexadecimal constant A
 - 3) In which of the following situations pointers cannot be used ?
 - a) Manipulation of string
 - b) Dynamic memory allocations
 - c) Implementing stack
 - d) Addition of two memory allocation
 - 4) The size of integer variable is
 - a) 1 byte
 - b) 4 bytes
 - c) 2 bytes
 - d) 8 bytes
 - 5) What is the size of char pointer ?
 - a) 1 byte
 - b) 2 bytes or 4 bytes
 - c) 3 bytes
 - d) always 4 bytes

P.T.O.



- iv) What is structure ? Explain with the example.
- v) Explain dynamic memory allocation in C with suitable example.
- vi) Write a program using pointers to swap two numbers.

4. Attempt **any two** from following : **20**

- i) Write a program to append contents of one file into another file.
- ii) Define a structure Student with data members name, rollno, marks etc. Write a C program to accept information of 10 students and display it.
- iii) Define an array of 10 numbers and sort that array in ascending order.

5. Define structure employee with members empid, empname, salary etc. Write a menu driven program to create an employee database using file and allow user to perform following operations on database. **10**

- i) Add employee details.
 - ii) Delete employee details.
 - iii) Search employee details.
 - iv) Display employee details.
-



Seat No.	
-------------	--

**M.C.A. (Part – I) (Semester – I) Examination, 2014
(Commerce and Management Faculty)
DATABASE MANAGEMENT SYSTEM (New)**

Day and Date : Thursday, 8-5-2014
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 70

Instructions : 1) **All questions are compulsory.**
2) **Figure to the right indicates full marks.**

1. Fill in the blanks : 10

- 1) _____ is memory buffer containing data and control information for a server process.
a) System Global Area (SGA) b) Program Global Area (PGA)
c) Buffer Memory d) None of these
- 2) _____ executes the recovery when a user process on database fails.
a) Process Monitor (PMON)
b) Database
c) Database Write Process (DBWR)
d) All of these
- 3) CHECK constraint is used with
a) INSERT b) CREATE
c) DELETE d) Truncate
- 4) The blocks residing on the disk are referred to as _____
a) Disk buffer b) Physical block
c) Buffer block d) Logical buffer
- 5) A database log that is used mainly for security purpose is some times called as _____
a) Audit Trail b) Database audit
c) System log d) Log security



- iii) Explain in detail shadow paging and its importance in crash recovery.
- iv) Write a PL/SQL block for a reverse number.
- v) Discuss function and procedure in detail along with any example.
- vi) Discuss public key infrastructure in detail.

4. Attempt **any two** from following : **(2×10)**

- i) What do you mean by concurrency control ? Discuss its schemes in detail .
- ii) Discuss the failure classification in detail.
- iii) List out Codd's Rules.

5. What is the need of the normalization ? Explain the first three steps involved in the normalization. Normalize the following data up to 3NF. **(1×10)**

Application Serial Number, FIRST Name, Surname, Middle Name, Address City, Pin Code, Phone Number, E-mail, Course Name, Application Date, Academic Year, Form Fee Receipt No., Form Fee Receipt Date, Form Fee Amount Payment Mode, DD/Cheque Number.
