SLR-V – 12

Seat No.	

M.C.A. – I (Commerce) (Semester – II) (Old) Examination, 2016
OPERATING SYSTEM CONCEPTS

Day and Date : Friday, 2-12-2016 Total Marks : 70
Time : 10.30 a.m. to 1.30 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* ***marks*** *to a question or sub-question.*

1. Multiple choice questions. **14**

1) Which of the following is contained in Process Control Block (PCB) ?
   a) Process Number b) List of Open files
   c) Memory Limits d) All of the above

2) Saving the state of the old process and loading the saved state of the new process is called _____
   a) Context Switch b) State
   c) Multi programming d) None

3) A major problem with priority scheduling is _____
   a) Definite blocking b) Starvation
   c) Low priority d) None

4) Round robin scheduling is essentially the preemptive version of _____
   a) FIFO b) Shortest job first
   c) Shortest remaining d) Longest time first

5) A set of resources allocations such that the system can allocate resources to each Process in some order and still avoid a deadlock is called _____
   a) Unsafe state b) Safe state
   c) Starvation d) Greedy allocation

6) Situations where two or more processes are reading or writing some shared data and the final result depends on the order of usage of the shared data, are called _____
   a) Race conditions b) Critical section
   c) Mutual exclusion d) Dead locks

P.T.O.

7) The Banker's algorithm is used
   a) To avoid deadlock in operating systems
   b) To detect deadlock in operating systems
   c) To rectify a deadlocked state
   d) None of the above
8) Thrashing occurs _____
   a) When excessive swapping takes place
   b) When you thrash your computer
   c) Whenever deadlock occurs
   d) When no swapping takes place
9) Semaphore can be used for solving _____
   a) Wait and signal
   b) Deadlock
   c) Synchronization
   d) Priority
10) Which of the following memory allocation scheme suffers from External fragmentation ?
   a) Segmentation
   b) Pure demand paging
   c) Swapping
   d) Paging
11) The program is known as _____ which interacts with the inner part of called kernel.
   a) Compiler
   b) Device driver
   c) Protocol
   d) Shell
12) _____ is a high speed cache used to hold recently referenced page table entries a part of paged virtual memory.
   a) Translation look aside buffer
   b) Inverse page table
   c) Segmented page table
   d) All the above
13) _____ allocates the largest hole (free fragment) available in the memory.
   a) Best Fit
   b) Worst Fit
   c) First Fit
   d) None of the above
14) Which of the following is crucial time while accessing data on the disk ?
   a) Seek time
   b) Rotational time
   c) Transmission time
   d) Waiting time

2. i) **(7×2)**

	Arrival Time	Execution Time
P1	0	8
P2	0.4	4
P3	1	1

Find Average Wait Time and Turnaround Time in FCFS, preemptive and non-preemptive SJF scheduling.

ii) List at least 4 reasons for process termination. Also discuss the need for the suspend state.

3. i) Write short notes on (**any two**) : **(7×2)**
   1) Demand paging
   2) Interrupts
   3) Difference between centralized and distributed OS.

   ii) What are schedulers ? Discuss the various types of schedulers.

4. i) Explain various RAID level. Which factors are involved in Selecting RAID level ? **(7×2)**

   ii) What is page fault ? How the page fault is handled ?

5. Explain how operating system implements file system. Explain structure of file control block maintained by OS. **14**

6. What are functions of memory management in OS ? List the techniques used for memory management. **14**

7. Describe in details Disk Scheduling algorithm. **14**

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SLR-V – 13

Seat No.	

M.C.A. – I (Commerce) (Semester – II) (Old) Examination, 2016
WEB TECHNOLOGY

Day and Date : Monday, 5-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

Instructions *: 1) Q.* ***1*** *and Q.* ***7*** *are* ***compulsory****.*
2) Solve ***any two*** *questions from Q.* ***2, 3*** *and* ***4****.*
3) Solve ***any one*** *question from Q.* ***5*** *and* ***6****.*

1. A) Select the correct alternative : **7**

1) Comments in XML document is given by
   a) <!-- --> b) <!-- --!>
   c) </-- --> d) <?-- -->

2) Default color of hyperlink is
   a) pink b) blue c) red d) green

3) _____ function is used for sending e-mail in PHP.
   a) sendmail( ) b) mail( )
   c) e-mail( ) d) all of these

4) In Javascript _____ function reverses the order of the elements in the array.
   a) rev( ) b) reverse( )
   c) revarray( ) d) none of these

5) How do you write “Hello” in an alert box ?
   a) alertbox (“Hello”) b) alertbox = “Hello”
   c) msgbox(“Hello”) d) alert(“Hello”)

6) _____ is XML based protocol which is used for web services.
   a) SOAP b) FTP c) TCP d) HTTP

7) Inside which HTML element do we put the javascript ?
   a) <js> b) <javascript>
   c) <script> d) none of these

P.T.O.

B) State **true** or **false**. **7**

1) HTML tags are used to describe document content.
2) Java script DOM is referred to as an instance hierarchy.
3) XML is not a case sensitive language.
4) The ceil( ) function returns the next integer less than or equal to a number.
5) $a = = = $b this expression identifies values of variable along with its datatype.
6) In css margin property, negative values are not allowed.
7) DTD stands for Document Type Definition.

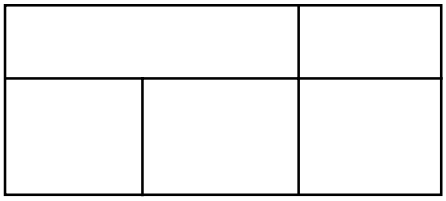
2. A) Write a note on "Event handling" in Java script with example. **7**

   B) What is XML ? Explain XML-DTD with example. **7**

3. A) Demonstrate different array and math functions in Javascript with example. **7**

   B) Explain web server architecture in detail. **7**

4. A) Write a HTML code to display the following table design. **7**



   B) What is DOM ? Explain history object with its methods. **7**

5. A) Write a short note on : **7**

   i) WWW ii) W3C

   B) Explain error handling in PHP with example. **7**

6. What is CSS ? Explain in detail different properties of list, margin and border with example. **14**

7. Design a HTML form for online registration of cricket team with fields (Team name, Captain_name, class, Mobile_no. Address) and write a PHP code to store the details of cricket team in database using MySQL, also validate the form fields. **14**

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SLR-V – 14

Seat No.	

M.C.A. – I (Semester – II) (Commerce) Examination, 2016
SOFTWARE ENGINEERING (Old)

Day and Date : Wednesday, 7-12-2016 Total Marks : 70

Time : 10.30 a.m. to 1.30 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 : **7**

1) DFD represents _____ through the system.

a) Process b) Input c) Output d) Flow of data

2) The spiral model is developed by

a) Gills b) Bohem c) John Hammer d) E.F. Codd

3) _____ is the decomposition of complex data structure into flat files called relations.

a) Normalization b) Table

c) Database d) None of these

4) _____ is the number of related records that are treated as a unit.

a) Data structure b) Database

c) File d) None of the above

5) _____ contain input data or input transaction to the system.

a) Reference file b) Master file

c) Transaction file d) All of above

6) What are the qualities of good software ?

a) reusability b) portability c) interoperability d) all of above

7) _____ establish the basis for agreement between Client and Supplier.

a) Review b) SRS c) DFD d) All of above

B) **True** or **False** : **7**

1) ERD is the example of data type of modeling.
2) Adaptive maintenance is concerned with fixing reported errors in the software.
3) Spiral is a working model which can be modified easily.
4) System analysis the examination of the problem.
5) Training of person is the part of system implementation.
6) Conversion is the process of changing from old system to new one.
7) The maintenance may include only hardware maintenance.

2. A) What is system maintenance ? State the importance of maintenance. **7**

B) What is reverse engineering ? State the process involved in reverse engineering. **7**

3. A) State the design principles of output. **7**

B) Define Entity Relationship diagram. State the different types of relations with example. **7**

4. A) What is the objective of testing ? State the different types of testing. **7**

B) Explain the role and skills of system analyst. **7**

5. Draw the ER diagram and DFD for tours and travels management system. **14**

6. Discuss the role, benefits and weakness of Case Tool. **14**

7. Write short notes on the following. (**any 2**) : **14**

1) Types of files.
2) Agile process.
3) Software development approaches.

SLR-V – 15

Seat No.	

M.C.A. – I (Semester – II) (Commerce) (Old) Examination, 2016
MANAGEMENT INFORMATION SYSTEM AND ENTERPRISE RESOURCE PLANNING

Day and Date : Friday, 9-12-2016 Total Marks : 70

Time : 10.30 a.m. to 1.30 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 marks to a question or sub-question.*

1. A) Select correct alternative from the following : **10**

i) _____ uses the concept of management control in its design and relies heavily on the fact that the decision maker or the manager is a human being and is a human processor of information.

A) EIS B) MIS

C) ES D) DSS

ii) A _____ is a choice between two or more alternatives. If you only have one alternative, you do not have a decision.

A) Support B) Decision

C) Selection D) Solution

iii) Repeat purchases rely on _____

A) Customer satisfaction B) Customer expectation

C) Customer's view D) None of these

P.T.O.

iv) For divisional or departmental purposes, _____ provides the account codes to be used in recording revenue, expense, accounts receivable and accounts payable activity.

A) Financial Accounting

B) Marketing Management

C) Personnel Management

D) Costing

v) In _____, the decision maker examines reality and identities and defines the problem.

A) Implementation B) Choice

C) Intelligence D) Design

vi) _____ is a tool that provides direct on-line access to relevant information in a useful and navigable format.

A) MIS B) DSS

C) ES D) EIS

vii) An enterprise is a group of _____ with a common goal which has certain resources at its disposal to achieve the goal.

A) People B) Organizations

C) Companies D) Managers

viii) _____ is the time between placement of the order and delivery of the product.

A) Cycle time B) Procedure

C) Cycle interval D) None of these

ix) A _____ management is a network of facilities and distribution options.

A) SCM B) CRM

C) Sales D) All of the above

x) _____ connects various functions of the organization in an integrated fashion.

A) CRM B) ERP

C) EIS D) MIS

B) Define the terms : **(2×2)**

i) Expert system.

ii) Decision making.

2. i) What is DSS ? Explain the different components of a DSS ? **(7×2)**

ii) What is an enterprise ? What is the role of enterprise ?

3. i) What is MIS ? Discuss characteristics of an effective MIS. **(7×2)**

ii) Write a note on sales and distribution module of ERP.

4. i) Explain needs and characteristics of EIS. **(7×2)**

ii) Explain different phases of ERP implementation.

5. Explain in detail about different modules in ERP along with their benefits. **14**

6. What is information ? Explain in detail the concept of quality of information. **14**

7. What is auditing ? Explain the need for auditing of information system and security of information system. **14**

SLR-V– 21

Seat No.	

M.C.A. (Commerce) (Part – II) (Semester – III) Examination, 2016
DATA STRUCTURE USING C++ (Old)

Day and Date : Tuesday, 29-11-2016 Total Marks : 70

Time : 2.30 p.m. to 5.30 p.m.

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

1. Multiple choice : **14**

A) Fill in the banks :

1) The memory address of the first element of an array is called _____.
   a) Floor address b) Foundation address
   c) First address d) Base address

2) Which of the following data structures are indexed structures ?
   a) Linear arrays b) Linked lists
   c) Both of above d) None of above

3) Two dimensional arrays are also called _____.
   a) Tables arrays b) Matrix arrays
   c) Both of above d) None of above

4) A variable P is called pointer if _____.
   a) P contains the address of an element in DATA
   b) P points to the address of first element in DATA
   c) P can store only memory addresses
   d) P contain the DATA and the address of DATA

5) When new data are to be inserted into a data structure, but there is no available space; this situation is usually called _____.
   a) Underflow b) Overflow
   c) Housefull d) Saturated

P.T.O.

6) Binary search algorithm cannot be applied to _____.
   a) Sorted linked list b) Sorted binary trees
   c) Sorted linear array d) Pointer array

7) The situation when in a linked list START = NULL is _____.
   a) Underflow b) Overflow
   c) Housefull d) Saturated

8) Which of the following is two way list ?
   a) Singly Linked List b) Circular Linked List
   c) Doubly Linked List d) None of above

9) Which of the following name does not relate to stacks ?
   a) FIFO list b) LIFO list
   c) Piles d) Push-down lists

10) The term "push" and "pop" is related to the _____.
   a) Array b) Lists
   c) Stacks d) All of above

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

1) Binary search algorithm is not-efficient when the data elements are more than 1000.

2) Arrays data structure can store the non-homogeneous data elements.

3) Pointers store the next data element of a list.

4) A data structure where elements can be added or removed at either end but not in the middle is called Dequeue.

2. A) Construct a binary tree from the given traversals **7**

Preorder : A B D G H E I C F J K

Inorder : G D H B E I A C J F K

B) Write a C++ program to reverse a singly linked list. **7**

3. A) Draw a binary search tree for following : **7**

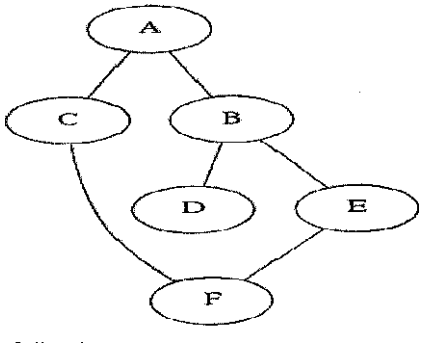
23, 89, 34, 67, 99, 2, 55, 45, 78, 12, 56

B) Convert the following expression to prefix expression. Show the contents of the stack at each step.

A * (B + C – D) * E/F * G. **7**

4. A) Write a C++ function to insert a node at a given position in a circular linked list. **7**

   B) Generate DFS and BFS for following graph. **7**



5. Show the AVL tree construction for the following : **14**

   MAR, MAY, NOV, AUG, APR, JAN, DEC, JUL, FEB, JUN, OCT, SEP

6. Explain circular queue in details. And write a program to implement a circular queue. **14**

7. Write short notes on (**any two**) : **14**

   A) Priority queue

   B) Stack overflow and stack underflow condition

   C) Doubly linked list

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SLR-V – 22

Seat No.	

M.C.A. (Part – II) (Semester – III) (Old) Examination, 2016
Commerce
CORE JAVA PROGRAMMING

Day & Date : Thursday, 1-12-2016
Time : 2.30 p.m. to 5.30 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****.*
3) Solve ***any one*** *question from Q. No.* ***5*** *and* ***6****.*

1. A) Fill in the blanks with appropriate options : **7**

1) The Java compiler translates source code into _____

a) Machine code b) Assembly code

c) Byte code d) JVM code

2) What method is used to specify a container's layout ?

a) setLayout() b) setSize()

c) area() d) resize()

3) What will be output of following code ?

```
public void test (int x)
{
  int odd = 1;
  if(odd)
  {
    System.out.printIn("odd");
  }
  else
  {
    System.out.printIn("even");
  }
}
```

a) Compilation Fails b) "odd"

c) "even" d) None of these

P.T.O.

4) Which of the following may be part of a class definition ?
   a) instance variables b) instance methods
   c) constructors d) All of these

5) Finalize( ) is only called just prior to _____.
   a) initialization b) garbage collection
   c) runtime d) All of these

6) Which of the following creates an correct instance of an array ?
   a) int[ ] ia = new int [15]; b) float fa = new float [20];
   c) char[ ] ca = “Some String”; d) int ia[ ] [ ] = {4, 5, 6}, {1, 2, 3};

7) Java was developed by which company ?
   a) IBM b) Oracle
   c) Sun Microsystems d) Microsoft

B) Simplify the **true** and **false** from following : **7**

1) We can use the new operator on int to create an “int” object.
2) Static block execute just after the main() method.
3) Transient instance variables are not serialized.
4) Stored procedures can be called using CallableStatement class in JDBC API.
5) ValueOf() method is used to convert String to Number in java program.
6) Flow layout should you use to organize the components of a container in a tabular form.
7) You would use the new operator to create a single instance of a named class.

2. A) Differentiate between abstract class and interface. **7**

   B) Explain difference between StringBuffer and StringBuilder with example. **7**

3. A) What is exception ? Explain exception handling in java. **7**

   B) Explain flow and grid layout managers with example. **7**

4. A) What is Collection classes ? Explain map and set collection classes. **7**

   B) What is serialization ? Write a program to serialize object of Student class. Student class contains rollno, name, marks instance variables. Make name as transient. **7**

5. A) Explain different types of JDBC drivers in detail. **7**

   B) Write a program to input string from user. And write every alternate character from string into file named “myfile.txt”. **7**

6. A) What is meant by Inheritance ? Explain multilevel inheritance with example. **7**

   B) Write JDBC program to retrieve information of all employees from database. Assume the employee table with attributes empid, name, address etc. available in database. **7**

7. Write a note on following :

   1) Thread Lifecycle. **5**

   2) Wrapper Classes. **5**

   3) Garbage Collection. **4**

SLR-V – 23

Seat No.	

M.C.A. (Part – II) (Semester – III) (Old) Examination, 2016
(Commerce)
DATA COMMUNICATION AND NETWORK

Day and Date : Saturday, 3-12-2016 Total Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

Instructions** : 1) Q. No. **1** and **7** are **compulsory.
*2) Solve **any two** questions from Q. No. **2, 3** and **4.***
*3) Solve **any one** question from Q. No. **5** and **6**.*

1. Multiple Choice: **14**

A) Fill in the blanks :

i) Which data communication method is used to transmit the data over a serial communication link ?

a) Simplex b) Half-duplex c) Full-duplex d) b) and c)

ii) In OSI network architecture, the dialogue control and token management are responsibility of

a) Session layer b) Network layer
c) Transport layer d) Data link layer

iii) _____ are standard response codes given by web site servers on the internet.

a) HTTP status codes b) Error code
c) Message Authentication Code d) None of these

iv) _____a protocol used to retrieve e-mail from a mail server.

a) POP b) SMTP
c) FTP d) All of the above

v) The _____ protocol uses cryptography for Internet Security.

a) SSL b) SMTP c) SNMP d) All of the above

vi) _____ is a protocol suite for securing Internet Protocol (IP) communications by authenticating and encrypting each IP packet of a communication session.

a) IPsec b) TCP/IP c) DHCP d) MIME

vii) Router works at _____

a) Physical layer b) Data-link layer

c) Network layer d) None of these

B) State **True-False** :

i) A hop is defined as a passage through one router.

ii) The physical addresses change from hop to hop, but the logical and port addresses usually remain the same.

iii) Foreign agent keeps track of users, who are currently visiting the area.

iv) Name servers store information about the name space in units called “proxy”.

v) OSI model is more superior than TCP/IP Model.

vi) IP address and DNS Namespace both are same.

vii) FTP protocol work at network layer.

2. Attempt the following questions :

A) Explain the Concept Symmetric key signature. **7**

B) Explain in brief Resource Record. **7**

3. Attempt the following questions :

A) Write a note on Digital Signature. **7**

B) Write about wireless LAN technologies. **7**

4. Attempt the following questions :

A) What is Routing ? Explain different routing algorithms. **7**

B) Write about the concept of IP addressing. **7**

5. What is DNS and DNS Namespace ? And write about ATM technology. **14**

6. What is SNMP ? How a network can be managed by SNMP ? **14**

7. Write about sending and receiving E-mails. What is E-mail addressing and message structure ? **14**

SLR-V – 24

Seat No.	

M.C.A. (Part – II) (Commerce) (Semester – III) Examination, 2016
SOFTWARE PROJECT MANAGEMENT (Old)

Day and Date : Tuesday, 6-12-2016 Total. Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

Instructions *: 1) Q.* ***1*** *and Q.* ***7*** *are* ***compulsory****.*
2) Attempt ***any two*** *questions form 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. Select the correct alternative : **14**

1) The company has to repair or replace a product. This will be taken as a
   A) Recall cost B) Warranty cost
   C) Scrap and rework cost D) Inspection and testing cost

2) Which of the following does not constitute the role of a project manager ?
   A) Integrator and coordinator B) Business case approval
   C) Project delivery D) Project planning and controlling

3) The _____ allows determination of the early start, early finish, late start and late finish.
   A) Three-point estimates B) Flow chart technique
   C) Precedence diagramming method D) Critical path method

4) The time lag, between initiating a query and receiving a response is called
   A) Response time B) Waiting time
   C) Process Time D) Turn Around Time

5) Which of the following is not considered a tool at system design phase ?
   A) Data flow diagram B) Decision table
   C) Pie chart D) System flow chart

6) The largest percentage of total life cycle cost of software is
   A) Design cost B) Maintenance cost
   C) Coding cost D) Testing cost

P.T.O.

7) Main difference between program testing and system testing is
   A) Program testing is more comprehensive than system testing
   B) System testing focuses on testing the interfaces between programs, program testing focus on individual programs
   C) System testing is tough and program testing is easy
   D) None of the above

8) One demerit of functional model is
   A) It is complex to built
   B) It is difficult to implement
   C) If we change data structure, we must modify all functions related to it
   D) None of the above

9) Cost of error correction is least at
   A) Implementation stage B) Design stage
   C) Development stage D) Requirement analysis stage

10) Testing can only be initiated
   A) When the implementation is done
   B) From the beginning of the project when planning is done
   C) From the design stage only
   D) After coding is complete

11) Testing is best done by
   A) An independent test team B) The programmer
   C) The designer D) The analyst

12) The individual or organisation who wants a product to be developed is known as the
   A) Developer B) User C) Initiator D) Client

13) Effective software project management focuses on four P's which are
   A) People, performance, payoff, product
   B) People, product, performance, process
   C) People, product, process, project
   D) People, process, payoff, product

14) The first step in project planning is to
   A) Determine the budget B) Select a team organizational model
   C) Determine the project constraints D) Establish the objectives and scope

2. A) Explain 4 P's involved in Software Project Management. **7**

   B) Explain Basic COCOMO model in brief. **7**

3. A) What is Risk Management ? Explain difference categories of Risk. **7**

   B) Explain Delphi estimation method in detail. **7**

4. A) What is Software Project Management ? Explain different types of Software Maintenance ? **7**

   B) What is Gantt Chart ? How to construct Gantt Chart ? **7**

5. A) What is Team ? Explain three types of team structure. **7**

   B) What is SCM ? Explain different elements of Configuration Management System. **7**

6. Discuss Role of Users in Project Management, System Implementation and Project Initiation. **14**

7. Write short note on **any two** : **(7×2=14)**

   A) Function Point Analysis

   B) CPM and PERT

   C) Risk Management Process

   D) Configuration Management.

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SLR-V – 25

Seat No.	

M.C.A. (Part – II) (Semester – III) (Commerce) Examination, 2016
ADVANCED DATABASE MANAGEMENT SYSTEM (Old)

Day and Date : Thursday, 8-12-2016 Max. Marks : 70

Time : 2.30 p.m. to 5.30 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 marks to a question or sub question.*

1. A) Choose the correct alternatives from the following : **9**

1) The keyword "inverse" is used in which of the following ?
   A) Class B) Attribute
   C) Relationship D) All of the above

2) Which of the following is a disadvantage of replication ?
   A) Reduced network traffic
   B) If the database fails at one site, a copy can be located at another site
   C) Each site must have the same storage capacity
   D) Each transaction may proceed without coordination across the network

3) Storing a separate copy of the database at multiple locations is which of the following ?
   A) Data Replication B) Horizontal Partitioning
   C) Vertical Partitioning D) Horizontal and Vertical Partitioning

4) ODL supports which of the following types of association relationships ?
   A) Unary
   B) Unary and Binary
   C) Unary and Binary and Ternary
   D) Unary and Binary and Ternary and Higher

5) Using ODL, you can define which of the following ?
   A) Attribute B) Structure
   C) Operation D) All of the above

P.T.O.

6) A transaction manager is which of the following ?
   A) Maintains a log of transactions
   B) Maintains before and after database images
   C) Maintains appropriate concurrency control
   D) All of the above

7) Identify the class name for the following code : ABC123 Course ();
   A) ABC123 B) Course C) Course () D) All of the above

8) The Site at which the transaction is initiated is referred to as
   A) Coordinator Site B) Primary Site
   C) Participating Site D) None of these

9) The Important metric(s) for measuring the efficiency of parallel database system is
   A) Speedup B) Scaleup C) Both A) and B) D) None

B) State whether **True** or **False** : **5**

1) Database objects are almost always transient.
2) An attribute's value is always literal.
3) You may specify an object identifier with only one unique tag name.
4) An ordered collection of elements of the same type are called sets.
5) In ODL, you specify an operation using parentheses after its name.

2. Define Transaction and explain commit protocol. **14**

3. Explain types of partitioning techniques in parallel database with its comparison for Data access. **14**

4. Explain mobile Computing architecture and its characteristics. **14**

5. i) Explain briefly about Data Fragmentation with suitable examples. **7**
   ii) Write and explain main Component of GIS. **7**

6. Write short notes on (**any two**) : **14**
   i) N-tier architecture
   ii) SOAP
   iii) Distribution Transaction.

7. i) Explain Inter-operational and Intra-operational parallelism with relevant examples. **7**
   ii) Define and explain Expert System. **7**

SLR-V – 26

Seat No.	

M.C.A. (Commerce) (Part – II) (Semester – IV) Examination, 2016
ADVANCED JAVA PROGRAMMING (New)

Day and Date : Wednesday, 30-11-2016 Total Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

***Instructions** : 1) Q. No. **1** and **7** are **compulsory**.*
*2) Solve **any two** questions from Q. No. **2**, **3** and **4**.*
*3) Solve **any one** question from Q. No. **5** and **6**.*

1. A) Fill in the blanks with appropriate : **7**

1) RMI stands for _____
   a) Random Memory Interchange
   b) Remote Member Interchange
   c) Remote Method Invocation
   d) Remote Master Invocation

2) _____ is a time period in which client is being connected with server.
   a) Cookie b) Session c) URI d) Password

3) <%= %> this symbol in JSP is called as _____, which is used to print contents on web page.
   a) Directive b) Comment c) Expression d) Scriptlet

4) In RMI _____ is process of conversion of objects or parameters in byte stream.
   a) Marshaling b) Unmarshaling
   c) Stub d) Skeleton

5) _____ is stateless protocol means that server doesn't remember user after it sends response.
   a) FTP b) HTTP c) SMTP d) Telnet

6) _____ package of following is used to implement protocol dependent servlet.
   a) javax.servlet b) javax.servlet.protocol
   c) javax.servlet.none d) javax.servlet.http

7) _____ implicit object in JSP is used to represent exception mechanism.
   a) Session b) Exception c) Out d) Application

P.T.O.

B) Simplify the **True** and **False** from following : **7**

1) destroy() method in servlet life cycle will be called at start of life cycle.
2) <c:out> tag in JSTL is used to print data on browser.
3) In RMI, to start RMIRegistry we have to use start rmiregistrycommand.
4) Java Beans are must have all variables declared as public.
5) Selling and purchasing goods online by using web application is called as e-commerce.
6) Servlets is a client side programming language used for validation purpose.
7) A unique 2 byte number which is used to identify application running on computer is called as port number.

2. A) Explain the HTTP protocol in detail. **7**

   B) Explain different JSP tags with example. **7**

3. A) Write and explain the Architecture of RMI application. **7**

   B) Write and explain Java Server Pages Life Cycle in detail. **7**

4. A) What is servlet ? Differentiate Servlet and CGI application in detail. **7**

   B) Explain steps for client and server connection using TCP protocol. **7**

5. A) What is meant by ServletConfig ? Explain with example. **7**

   B) Explain different JSTL tags in detail. **7**

6. A) Explain SET protocol for Credit Card Payment System. **7**

   B) Write and explain the steps for the implementation of RMI application. **7**

7. Write a note on following :

   i) E-cash **5**

   ii) Cookie **5**

   iii) MVC Architecture. **4**

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SLR-V – 27

Seat No.	

M.C.A. – II (Semester – IV) (Commerce) Examination, 2016
ADVANCED DEVELOPMENT TECHNOLOGY

Day and Date : Friday, 2-12-2016 Total Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

***Instructions**: 1) Q. **1** and Q. **7** are **compulsory**.*
*2) Solve **any 2** Qs. from Q. **2** to Q. **4**.*
*3) Solve **any 1** Q. from Q. **5** and Q. **6**.*

1. Choose the correct alternative : **(7×2=14)**

1) _____ control is used to display static text in a web form page.
a) Label b) Link c) Textbox d) Calendar

2) The property which include only get clause called as
a) Writeonly b) Readonly
c) Indexer d) FCL

3) Conversion of reference data type to value data type known as
a) Boxing b) Unboxing
c) Output d) Param

4) _____ known as Run Time engine for .Net application.
a) MSIL b) CLR
c) JIT d) All of the above

5) Asp.net master page having the extension
a) .asp b) .html c) .aspx d) .master

6) Static class contain all member must be
a) Abstract b) Override
c) Static d) Local

7) Size of short data type is _____ byte.
a) 1 b) 4 c) 8 d) 2

P.T.O.

2. Attempt the following : **(7×2=14)**

   A) Draw block diagram and explain elements of .Net Framework.

   B) Explain the different operators in C#.

3. Attempt the following : **(7×2=14)**

   A) Write down a program for constructor overloading.

   B) What is Array in C# ? Explain its types with example.

4. What is Polymorphism in C# ? Explain its types with example. **14**

5. What is inheritance ? Explain its types with example. **14**

6. What is ADO.Net ? Explain in details. **14**

7. Write short note on (**any 2**) : **(7×2=14)**

   1) Difference between ASP and ASP.NET.

   2) Navigation controls.

   3) Switch statement in C#.

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SLR-V – 28

Seat No.	

M.C.A. II (Semester – IV) (Commerce) Examination, 2016
DATA WAREHOUSING AND DATA MINING

Day and Date : Monday, 5-12-2016 Total Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

Instructions : *1) Q. **1** and Q. **7** are **compulsory**.*
*2) Solve **any 2** Q. from Q. **2** to Q. **4**.*
*3) Solve **any 1** Q. from Q. **5** and Q. **6**.*

1. Choose the correct alternative : **(7×2=14)**

1) A data warehouse is based on a _____ data model.
   a) Single b) Multidimension
   c) ER d) Star

2) _____ is a subset of the Data Warehouse.
   a) Data-mart b) Data c) Query d) FCL

3) _____ is the extraction of hidden predictive information from large database.
   a) Data warehouse b) Datamart
   c) Data mining d) Param

4) Classification algorithm uses _____ learning.
   a) MSIL b) rainforcement
   c) unsupervised d) supervised

5) _____ discovers relationship among data.
   a) Association rule b) Cluster
   c) Classification d) Prediction

6) _____ is a classical algorithm for learning association rules.
   a) Decision tree b) Apriori c) K-Mean d) JK

7) _____ maps data into real valued prediction variable.
   a) Cluster b) Association c) Regression d) Classification

P.T.O.

2. Attempt the following : **(7×2=14)**

   A) What is Data Mining ? Explain the need of data mining.

   B) What is Data explosion problem ?

3. Attempt the following : **(7×2=14)**

   A) Differentiate DBMS Vs Data Warehouse.

   B) What is Association Rule ? Explain with example.

4. Attempt the following : **(7×2=14)**

   A) What is Classification ? Discuss the application of classification.

   B) What is Clustering ? Explain the types of clustering.

5. What is KDD ? Explain the steps of KDD. **14**

6. What is Web Mining ? Explain the different types of web mining. **14**

7. Write short note on (**any 2**) : **(7×2=14)**

   1) Star Schema

   2) Application of cluster

   3) Application of data mining.

SLR-V – 29

Seat No.	

M.C.A. – II (Semester – IV) (Commerce) Examination, 2016
DESIGN AND ANALYSIS OF ALGORITHM

Day and Date : Wednesday, 7-12-2016 Total Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

Instructions *: 1) Q.* ***1*** *and Q.* ***7*** *are* ***compulsory****.*
2) Solve ***any 2*** *questions from Q.* ***2*** *to Q.* ***4****.*
3) Solve ***any 1*** *question from Q.* ***5*** *and Q.* ***6****.*

1. Choose the correct alternative : **(7×2=14)**

1) _____ is an example of priority queue.
   a) Heap b) Radix c) Bubble d) Star

2) Quick sort is an example of _____
   a) Divide and conquer b) *Greedy*
   c) *Non-recursive* d) FCL

3) Worst-case complexity of Bubble sort is _____
   a) 0(n) b) 0(nlogn) c) $0(n^2)$ d) 0(1)

4) An algorithm that calls itself is called _____ recursive algorithm.
   a) Indirect b) Direct
   c) Simple d) Logical

5) Space complexity (sp) is calculated as _____
   a) sp = c + sp b) sp = c * sp
   c) sp = c * 2 d) sp = sp * sp

6) Big 'oh' notation indicate _____ of an algorithm.
   a) Best-case b) Avg-case
   c) Worst-case d) All of above

7) _____ is a finite set of instructions.
   a) Graph b) Flowchart
   c) Pseudo-code d) Algorithm

P.T.O.

2. Attempt the following : **(7×2=14)**
   A) What is Recursive algorithm explains with example ?
   B) Explain Time complexity of an algorithm.

3. Attempt the following : **(7×2=14)**
   A) Explain Bubble sort with example.
   B) What is algorithm design ? Explain different approaches of algorithm design.

4. Attempt the following : **(7×2=14)**
   A) Explain in detail concept of Divide and Conquer.
   B) Explain Greedy method with suitable example.

5. What is analysis of algorithm explain in details ? **14**

6. What is Heap ? Explain Heap operations with example. **14**

7. Write short note on (**any 2**) : **(7×2=14)**
   1) Radix sort
   2) Dynamic Programming
   3) Merge Sort.

SLR-V – 30

Seat No.	

M.C.A. Commerce (Part – II) (Semester – IV) Examination, 2016
OPTIMIZATION TECHNIQUES

Day and Date : Friday, 9-12-2016 Total Marks : 70
Time : 2.30 p.m. to 5.30 p.m.

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

1. A) Select the correct alternative : **(1×7=7)**

1) The slack for activity is equal to
   a) LF-LS b) EF-ES
   c) LS-ES d) None of the above

2) Customer behavior in which customer moves from one queue to another in a multiple channel situation is
   a) bulking b) reneging
   c) jockeying d) alternating

3) In two-phase method _____ variable is never considered fore-entry into the basis.
   a) surplus b) artificial
   c) slack d) none of these

4) If an opportunity cost value is used for an unused cell to revise the solution for optimality, it should be
   a) most positive number b) equal to zero
   c) most negative number d) any value

5) Constraints in LP model represents
   a) limitations
   b) requirements
   c) balancing limitations and requirements
   d) all of these

P.T.O.

6) If an activity has zero slack, it implies
   a) it lies on the critical path b) it is dummy activity
   c) the project is progressing well d) none of these

7) The expected monitory value criteria is used for decision making under
   a) risk b) uncertainty
   c) certainty d) none of these

B) State **True** or **False** : **(1×7=7)**

1) The purpose of dummy row or column in an assignment problem is to prevent a solution from becoming degenerate.
2) A feasible solution to an LP problem must satisfy all of the constraints simultaneously.
3) In decision theory a course of action is called an alternative.
4) Degeneracy in transportation problem occurs when dij > 0.
5) The dual of dual LP is primal.
6) Graphical solution method can be applied to solve a LPP when there are only two variable.
7) First come first served is priority queue discipline.

2. A) Find the initial basic feasible solution for following transportation problem. **(7×2=14)**

To	A	B	C	D	Requirements
From					
P	32	42	26	45	45
O	41	43	39	38	55
R	44	46	48	48	65
S	39	35	45	47	75
Available	75	65	55	45	

B) What is Linear Programming ? What are its major assumptions and limitation ? What are the Uses of LPP ?

3. Solve following problem by using two-phase method. **14**

Maximize $Z = 5x_1 + 3x_2$

Subject to $2x_1 + x_2 \leq 1$

$x_1 + 4x_2 \geq 6$ and $x_1, x_2 \geq 0$

4. A) In a textile sales emporium, four salesmen A, B, C and D are available to four Counters W, X, Y and Z. Each salesman can handle any counter. The service in (hour) of each counter when manned by each salesman is given below : **(7×2=14)**

	Salesman			
Counter	**A**	**B**	**C**	**D**
W	41	32	39	52
X	22	29	49	65
Y	27	39	60	51
Z	45	50	48	52

How should the salesman be allocated appropriate counters so as to minimize the service time ?

B) Define a queue. Explain the structure of queue and various queue discipline.

5. A) Solve the LP problem by using graphical method. **(7×2=14)**

Max $Z = 3x + 2y$

Subject to $2x + y \leq 18$

$2x + 3y \leq 42$

$3x + y \leq 24$

$x \geq 0, y \geq 0$

B) Draw the network diagram for following and find the critical path with its length.

Activity	**Immediate Predecessors**	**Time**
A	–	14
B	A	22
C	B	10
D	B	16
E	B	12
F	C	10
G	C	6
H	F, G	8
I	D, E, H	24
J	I	16

6. The following matrix gives number of units (per hour) produced by each worker on each type of machine and their availability. Find the optimum allocation. **14**

Worker	**Machine**			**Availability**
	M1	M2	M3	in hrs.
A	10	12	15	25
B	17	18	9	30
C	20	15	5	40
Availability (in hrs.)	28	43	24	

7. Given the following information regarding a project as activities and estimates of the optimistic, most likely and pessimistic times (in days) for completion of the various activities. **14**

Activity	**Time estimates (in days)**		
	Optimistic	**Most likely**	**Pessimistic**
1-2	2	5	14
1-3	9	12	15
2-4	5	14	17
3-4	2	5	8
3-5	6	9	12
4-5	8	17	20

a) Draw a network diagram.

b) Determine the critical path.

c) Determine the expected project completion time.

d) What is probability that project will be completed in 30 days ?

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SLR-V – 31

Seat No.	

M.C.A. – II (Semester – IV) (Commerce) Examination, 2016
ENTERPRISE RESOURCE PLANNING (Old)

Day and Date : Saturday, 10-12-2016 Max. Marks : 70

Time : 10.30 a.m. to 1.30 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) Select the correct alternative : **10**

1) _____ module provides you with technical and business reports and various presentation options according to criteria used.

A) Purchasing B) Plant maintenance
C) Finance D) All of these

2) _____ module streamlines procurement of required raw materials.

A) Material management module B) Purchasing module
C) Financial module D) Production planning module

3) _____ follow procedure to manipulate data to produce information.

A) People B) Resources C) Management D) All of these

4) _____ provides facility to analyze the data held within the data warehouse in a flexible manner.

A) Data mining B) Data warehousing
C) OLAP D) None of these

5) _____ analyze, plan, execute measure marketing activities through all inbound and outbound.

A) Campaign management B) Enterprise, management
C) CRM D) None of these

6) _____ defines BPR as "the fundamental rethinking and radical redesign of business process to achieve dramatic improvements."

A) Dr. Michael Hammer B) Dr. John Hammer
C) Dr. Michael Carthy D) Dr. James

P.T.O.

7) _____ is generally associated with the buying and selling of information, products and services via computer network.
   A) M-commerce B) E-commerce
   C) Internet commerce D) All of these
8) A _____ is a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer.
   A) Business process B) ERP
   C) ERP Market D) None of these
9) ____ is the time between placement of the order and delivery of the product.
   A) Cycle time B) Procedure C) Interval D) Cycle interval
10) Intangible benefits _____ organizational transparency and responsibility.
   A) Degrades B) Improves C) Controls D) All of these

B) Define the terms : **4**
   1) CRM
   2) DSS
   3) BPR
   4) OLAP.

2. A) Describe supply chain management process with their key features. **7**
   B) Explain need and advantages of ERP systems. **7**

3. A) Explain Executive Support System with suitable examples. **7**
   B) List out different ERP related technologies and explain any one in detail. **7**

4. Explain ERP implementation life cycle. **14**

5. A) Explain importance of ERP to the success or failure of any business organization. **7**
   B) Explain the ERP Market. **7**

6. Explain Inventory Control System and Production planning modules. **14**

7. Write short note **(any two)** : **14**
   a) Data Mining
   b) MIS
   c) Sales and Distribution.

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SLR-V – 32

Seat No.	

M.C.A. (Commerce) (Semester – V) Examination, 2016
ARTIFICIAL INTELLIGENCE AND ITS APPLICATIONS

Day and Date : Tuesday, 29-11-2016 Total Marks : 70
Time : 10.30 a.m. to 1.30 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 marks to a question or sub question.*

1. A) Multiple Choice : **7**

1) An AI technique that allows computers to understand associations and relationships between objects and events is called
   a) Heuristic processing b) Cognitive science
   c) Relative symbolism d) Pattern matching

2) The field that investigates the mechanics of human intelligence is
   a) History b) Cognitive science
   c) Psychology d) Sociology

3) A problem is first connected to its proposed solution during the _____ stage.
   a) Conceptualization b) Identification
   c) Formalization d) Implementation

4) What is the name of the computer program that simulates the thought processes of human beings ?
   a) Human logic b) Expert reason
   c) Expert system d) Personal information

5) Ambiguity may be caused by
   a) Syntactic ambiguity b) Multiple word meanings
   c) Unclear antecedents d) All of the above
6) Natural language processing is divided into the two subfields of
   a) Symbolic and numeric
   b) Time and motion
   c) Algorithmic and heuristic
   d) Understanding and generation
7) Which of the following have people traditionally done better than computers ?
   a) Recognizing relative importance
   b) Finding similarities
   c) Resolving ambiguity
   d) All of the above

B) **True/False** : **7**

1) The hardware features of LISP machines generally include large memory and a high-speed processor.
2) A process that is repeated, evaluated and refined is called diagnostic.
3) A natural language generation program must decide why it is being used.
4) John McCarthy is considered to be the "father" of artificial intelligence.
5) Visual clues that are helpful in computer vision include height and weight.
6) In a rule-based system, procedural domain knowledge is in the form of production rules.
7) In LISP, the addition 3 + 2 is entered as 3 + 2 =

2. Answer the following :

A) Explain reasoning in details. **7**

B) Explain forward and backward chaining in details. **7**

3. Answer the following :

A) Differentiate between procedural knowledge and declarative knowledge. **7**

B) Explain expert system. **7**

4. Answer the following :
   A) Explain depth first search and breadth first search algorithm in details. **7**
   B) Explain PROLOG terminology. **7**
5. Explain root learning and problem reduction in details. **14**
6. Explain steps in knowledge representation in details. **14**
7. Convert the following English statement in to predicate statement. **14**
   1) The bicycle Tom is driving *is Green*
   2) The cover of this book *is white*
   3) All human has hands
   4) Someone hates you
   5) That bird is a parrot ; therefore, its green
   6) College has holiday because of summer
   7) Students passed in artificial intelligence if and only if they studied.

SLR-V – 33

Seat No.	

M.C.A. (Commerce) Semester – V Examination, 2016
SOFTWARE TESTING AND QUALITY ASSURANCE

Day and Date : Thursday, 1-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 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. Select the correct alternative : **14**

1) The _____ approach/document used to make sure all the requirements are covered when writing test cases.
   a) Test Matrix b) Checklist
   c) Test bed d) Traceability Matrix

2) Executing the same test case by giving the number of inputs on same build called as
   a) Regression Testing b) Load testing
   c) Ad hoc Testing d) Sanity Testing

3) _____ is static process to check whether we are developing the right product according to the customer requirements or not.
   a) Validation b) Verification
   c) Quality Assurance d) Quality Control

4) _____ is a Non-Functional software testing done to check if the user interface is easy to use and understand.
   a) Usability Testing
   b) Security Testing
   c) Unit testing
   d) Black Box Testing

5) The review and approved document (i.e. Test plan, System Requirement Specification's) is called as
   a) Delivery Document
   b) Baseline Document
   c) Checklist
   d) Test cases

6) Which of the following is the quality of processes used to create a quality product, a preventive process and applies for entire life cycle and deals with process.
   a) Validation
   b) Verification
   c) Quality Assurance
   d) Quality Control

7) Variance from product specifications is called
   a) Report
   b) Requirement
   c) Defect
   d) Metrics

8) White box testing is not called as
   a) Glass box testing
   b) Closed box testing
   c) Open box testing
   d) Clear box testing

9) Retesting of a single program or component after a change has been made is called
   a) Full Regression Testing
   b) Unit Regression
   c) Regional Regression
   d) Retesting

10) The testing which is done by going thro' the code is known as
   a) Unit testing
   b) Black box testing
   c) White box Testing
   d) Regression testing

11) _____ describes the Configuration Management procedures and structures to be used.
   a) Configuration Management Plan
   b) Regression testing plan
   c) Benchmark
   d) Test case

12) This type of testing method attempts to find incorrect or missing functions, errors in data structures or external database access, interface errors, performance errors and initialization and Termination errors. It is called as
   a) White Box Testing
   b) Grey Box Testing
   c) Black Box Testing
   d) Open Box Testing

13) Software testing which is done without planning and Documentation is known as
   a) Ad hoc Testing
   b) Unit Testing
   c) Regression testing
   d) Functional testing

14) Acceptance testing is known as
   a) Beta Testing
   b) Grey box testing
   c) Test Automation
   d) White box testing

2. A) Explain different functional testing methods. **7**

   B) Why review process is important ? Explain different personnel involved in review process with their role and responsibilities. **7**

3. A) Explain different Software Testing Metrics. **7**

   B) Explain different static testing techniques used in testing. **7**

4. A) Explain 11 steps of testing process in detail. **7**

   B) Explain Manual testing and Automated testing in detail. **7**

5. A) What is testing ? Explain different types of non-functional testing. **7**

   B) Explain V and V method in detail. **7**

6. A) Explain Installation testing and Security testing. **7**

   B) Explain importance of checklist. Suggest checklist for checking usability of web based applications. **7**

7. Write short notes on **any two** : **14**

   A) ISO.

   B) Clean Room Software Development.

   C) White Box and Black Box Testing.

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SLR-V – 34

Seat No.	

M.C.A. (Part – III) (Semester – V) (Commerce) Examination, 2016
EMERGING TRENDS IN IT

Day and Date : Saturday, 3-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

Instructions : *1) Q. No. **1** and **7** are **compulsory**.*
*2) Attempt **two** from Q. **2**, to Q. **4**.*
*3) Attempt **any one** from Q. **5** to Q. **6**.*

1. A) Define : **(2×5)**
   1) Membership Function
   2) Fuzzy Set
   3) ANN
   4) Activate Function
   5) Cardinality Number.

   B) State **True** - **False** : **(1×4)**
   1) Union : $\mu_A(x) \cup \mu_B(x) = \max(\mu_A(x), \mu_B(x))$.
   2) Failure to meet a soft real-time requirement would most probably result in a death.
   3) On average, neural networks have higher computational rates than conventional computers.
   4) Neural networks mimic the way of the human brain works.

2. Attempt the following : **14**
   1) Explain RFID in detail.
   2) What is embedded system ? Explain applications of embedded system.

3. With a neat block diagram, explain the fuzzy based expert system. **14**

4. Explain Back-propagation algorithm in feed-forward Artificial Neural Networks. **14**

P.T.O.

5. What is artificial neural network ? Differentiate between biological neuron and artificial neuron **14**

6. Consider two fuzzy subsets of the set X, X = {a, b, c, d, e} referred to as A and B A = {0, 2/a, 0.4/b, 1/c, 0.8d, 0/e} and B = {0/a, 0.9/b, 0.3/c, 0.2/d, 0.1/e}.

   Then, calculate the following : **14**

   1) Support, Core, Cardinality and Complement for A and B independently
   2) Union and Intersection of A and B
   3) The new set C, if $C = A^2$
   4) The new set D, if D = 0.5*B
   5) The new set E, for an alpha cut at A 0.5

7. Write short note on : **14**

   1) Fingerprint Scanning
   2) Operation on Fuzzy Set.

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SLR-V – 35

Seat No.	

M.C.A. (Commerce) (Part – III) (Semester – V) Examination, 2016
ADVANCED INTERNET TECHNOLOGY

Day and Date : Tuesday, 6-12-2016 Total Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

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

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

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

1. Fill in the blanks : **14**

   1) _____ is small amount of data stored at client side.

   2) An array within another array is called as associative array. (True/False) _____

   3) _____ tag is easy way to draw graphics using JavaScript.

   4) _____ in HTML5 is used to allow user to search data.

   5) In CSS, _____ is used to select particular element.

   6) MVC stands for Model Virtual Constructor. (True/False) _____

   7) _____ supports drag and drop facility with elements.

2. A) What is object ? Explain object orientation concepts in PHO with example. **7**

   B) Explain the architecture of Ajax in detail. **7**

3. A) Explain all selectors in jquery in detail. **7**

   B) What is HTTP ? Explain HTTP Request and HTTP Response. **7**

P.T.O.

4. A) Explain Custom Exception in PHP. **7**

   B) What is transformation ? Explain types of transformation in detail. **7**

5. A) Explain all attributes of form in HTML5. **7**

   B) What is server side programming language ? Explain the features of PHP. **7**

6. A) Explain the different features of HTML5 in detail. **7**

   B) Write a PHP script to select all records from student table and display on browser. **7**

7. Write a short note on following :

   A) MVC architecture. **5**

   B) Multimedia in HTML5. **5**

   C) Joomla. **4**

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Seat No.	

M.C.A. (Commerce) (Semester – V) Examination, 2016
OBJECT ORIENTED ANALYSIS AND DESIGN

Day and Date : Thursday, 8-12-2016 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

***Instructions** : 1) Q. **1** and Q. **7** are **compulsory**.*
*2) Solve **any 2** Q. from Q. **2** to Q. **4**.*
*3) Solve **any 1** Q. from Q. **5** and Q. **6**.*

1. Choose the correct alternative : **(7×2=14)**

1) An _____ is an entity that has well-defined structure and behavior.
a) Class b) Object c) Data d) All of above

2) _____ is how an object acts or reacts.
a) State b) Attributes c) Behavior d) Defuzzify

3) _____ diagram indicates user view of system.
a) Class b) State c) Activity d) Use case

4) _____ diagram displays the object interaction arranged in time sequence.
a) Sequence b) State c) Activity d) Use case

5) _____ diagram shows configuration of run-time processing elements.
a) Component b) Deployment c) Activity d) Use case

6) _____ is the specification of a significant occurrence that has a location in time and space.
a) Event b) State c) Activity d) Use case

7) UML is _____ tool.
a) Testing b) Maintaince c) Hardware d) s/w modeling

2. Attempt the following : **(7×2=14)**
   A) Explain the different object oriented concepts.
   B) Differentiate between SSAD with OOAD.
3. Attempt the following : **(7×2=14)**
   A) What is RUP ? Explain its phases.
   B) Explain Activity diagram with example.
4. Attempt the following : **(7×2=14)**
   A) Draw the use case diagram for ATM machine.
   B) Draw the sequence diagram for use case book_issue.
5. What is Class diagram ? Explain the different relations of class with example. **14**
6. Explain the unified approach in details. **14**
7. Write short note on **(any 2)** : **(7×2=14)**
   1) UML
   2) Interaction diagram
   3) CRC approach.

SLR-V – 37

Seat No.	

M.C.A. (Commerce) Direct Second Year Students (Bridge Course) Examination, 2016
DISCRETE MATHEMATICAL STRUCTURES
(Paper – I)

Day and Date : Tuesday, 13-12-2016 Max. Marks : 100
Time : 10.30 a.m. to 1.30 p.m.

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

1. A) Multiple Choice Question : **(2×7=14)**

1) The Proposition (pV ~ p) is
a) 1 b) F c) T d) P

2) The bound variable in (x) P(x, y)
a) x b) y
c) both d) none of these

3) A one-to-one function is also known as
a) Injective b) Surjective c) Bijective d) None of the above

4) A formula consisting of Conjunction of _____ is called PCNF.
a) Variables b) Maxterms c) Minterms d) Negations

5) If A and B are two set, then $A \cap (A \cup B)$ equals
a) A b) B
c) Ø d) None of these

6) If clockwise and anti clock-wise orders are different, then total numbers of circular-permutations is given by
a) n! b) (n – 1)! c) n(n – 1)! d) (n – 1)/n!

7) How many different signals can be made by 5 flags from 8-flags of different colours ?
a) 6 b) 6720 c) 40320 d) 120

P.T.O.

B) Solve the following : **(2×3=6)**

a) Let p : The election is decide

q : The votes have been counted Translate into English

a) ~p – > ~q

b) ~qV(~p $\wedge$ q)

b) Let p : He is old

q : He is clever. Express the compound proposition in symbolic form

1) He is old but not clever

2) It is not true that he is young or not clever.

c) Determine the truth value of following statement.

1) 2 divides 8 and 4 + 7 =11.

2) 6 + 6 = 12, then 6+(–6) = –17.

2. Attempt the following : **(10×2=20)**

a) Find DNF of p v(~p $\rightarrow$ (q v(q $\rightarrow$ ~r))).

b) Show that (p $\wedge$ q) $\rightarrow$ (p $\vee$ q) is a Tautology using logical equivalence.

3. Attempt the following : **(5×4=20)**

1) Equivalence Relation 2) Group

3) Floor and Ceil Function 4) Types of function.

4. Attempt the following : **(10×2=20)**

a) How many words can be formed with the letters of the word 'OMEGA' when

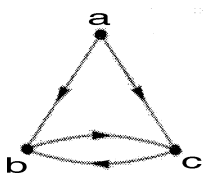
i) 'O' and 'A' occupying end places

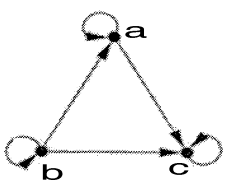
ii) 'E' being always in the middle

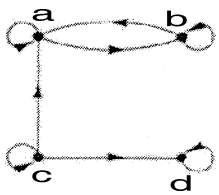
iii) Vowels occupying odd-places

iv) Vowels being never together.

b) Which of the graphs are reflexive, irreflexive, symmetric, asymmetric, antisymmetric or transitive ?

1) 

2) 

3) 

5. Attempt the following : **(10×2=20)**

a) Let A = (1, 2, 4, 6, 8) and for a, b $\in$ A, define a $\leq$ b if and only if b/a is an integer.

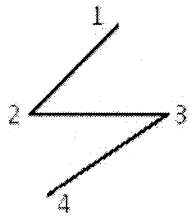
i) Prove that $\leq$ defines partial order on A.

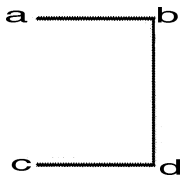
ii) Draw the Hasse diagram for $\leq$.

iii) List the Minimal and Maximal element.

iv) Is (A, $\leq$) totally ordered ? Explain.

b) Define isomorphism. Show that the two graphs shown in figure are isomorphic.





6. Attempt the following : **(10×2=20)**

a) Draw the following graph

a) C_5 b) W_5 c) Q_2 d) K3×3

b) Define Relation. Explain properties of relation.

7. Attempt the following : **(10×2=20)**

a) Number of combination of 'n' different things, taken 'r' at a time is given by

nCr = n!/r!(n – r)!

b) Prove that the following proposition is tautology

$(p \rightarrow \sim q) \vee r$.

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SLR-V – 38

Seat No.	

M.C.A. (Commerce) Direct Second Year Students (Bridge Course) Examination, 2016
OPERATING SYSTEM (Paper – II)

Day and Date : Wednesday, 14-12-2016 Total Marks : 100
Time : 10.30 a.m. to 1.30 p.m.

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

1. Multiple choice questions. **(10×2=20)**

1) Which of the following is crucial time while accessing data on the disk ?
   a) Seek time b) Rotational time
   c) Transmission time d) Waiting time

2) Which of the following memory allocation scheme suffers from External fragmentation ?
   a) Segmentation b) Pure demand paging
   c) Swapping d) Paging

3) A major problem with priority scheduling is
   a) Definite blocking b) Starvation
   c) Low priority d) None

4) Round robin scheduling is essentially the preemptive version of
   a) FIFO b) Shortest job first
   c) Shortest remaining d) Longest time first

5) Information about a process is maintained in a
   a) Stack b) Translation Look aside Buffer
   c) Process Control Block d) Program Control Block

6) CPU performance is measured through
   a) Throughput b) MHz
   c) Flaps d) None of the above

P.T.O.

7) Semaphore can be used for solving
   a) Wait and signal b) Deadlock
   c) Synchronization d) Priority

8) _____ is a high speed cache used to hold recently referenced page table entries a part of paged virtual memory.
   a) Translation look aside buffer b) Inverse page table
   c) Segmented page table d) All the above

9) _____ allocates the largest hole (free fragment) available in the memory.
   a) Best fit b) Worst fit
   c) First fit d) None of the above

10) A process said to be in _____ state if it was waiting for an event that will never occur.
   a) Safe b) Unsafe c) Starvation d) Dead lock

2. i) **(10×2=20)**

	Arrival Time	**Execution Time**
P1	0	8
P2	0.4	4
P3	1	1

Find Average Wait Time and Turnaround Time in FCFS, preemptive and non-preemptive SJF Scheduling.

ii) List at least 4 reasons for process termination. Also discuss the need for the suspend state.

3. Attempt the following. **(10×2=20)**

i) Write short notes on (**any two**).
   1) Demand paging
   2) Deadlock recovery
   3) RAG.

ii) What are schedulers ? Discuss the various types of schedulers.

4. Attempt the following. **(10×2=20)**

i) Explain various RAID level. Which factors are involved in selecting RAID level ?

ii) What is page fault ? How the page fault is handled ?

5. Attempt the following. **(10×2=20)**

   i) Explain how operating system implements file system. Explain structure of file control block maintained by OS.

   ii) Explain in detail how interrupts are processed.

6. Attempt the following. **(10×2=20)**

   i) What are functions of memory management is OS ? List the techniques used for memory management.

   ii) How deadlock can be detected if each resource has single instance and many instances ?

7. Attempt the following. **(10×2=20)**

   i) Describe in detail Disk Scheduling Algorithm.

   ii) Consider the following page reference string :

   1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6

   How many page fault would occur for LRU page replacement algorithm assuming 3 frames ?

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SLR-V – 39

Seat No.	

M.C.A. (Commerce) (Part – III) (Semester – V) (Old) Examination, 2016
UNIX INTERNALS

Day and Date: Saturday, 10-12-2016 Total Marks: 70
Time: 2.30 p.m. to 5.30 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 marks to a question or sub question.*

1. Choose correct alternative. **14**

1) _____ type of file providing buffered I/O access in fixed-size units to devices such as disk drives.

A) Regular file B) Block special

C) Directory file D) Character special file

2) The old process which create new process is called

A) Shell B) Parent process

C) Child process D) None of above

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) Process ID 0 is usually the scheduler process and is often known as the

A) swapper B) bootstrap

C) pagedaemon D) none of above

5) When a process gets executed, it puts its entry in kernels process table, when kernel realizes this it allocates a block of memory called as

A) u Table B) Process Table

C) Pre-process Region Table D) None of above

6) A _____ is a collection of one or more processes, usually associated with the same job that can receive signals from the same terminal.

A) process list B) process IDs

C) process group D) none of above

7) _____ are the entities, which inform the process/processes about occurrence of asynchronous events.

A) Pipe B) I/O Indirection

C) Signals D) None of above

8) If a modem (or network) disconnect is detected by the terminal interface, the hand-up signal is sent to the controlling process (the session leader).

A) hang-up signal B) quit signal

C) interrupt signal D) none of above

9) The _____ function allows a process to send a signal to itself.

A) kill B) raise C) alarm D) abort

10) _____ occurs when two processes are each waiting for resources that the other has locked.

A) Locking B) Sharing C) Deadlock D) None of above

11) The agency that sits between the user and the UNIX system is called the

A) logic B) profile C) shell D) erxc

12) The process whose parent terminates is called an orphan and is inherited by the init process.

A) True B) False

13) Record locking is the term normally used to describe the ability of a process to prevent other processes from modifying a region of a file while the first process is reading or modifying that portion of the file.

A) True B) False

14) IPC stands for _____

2. a) Write a note on Locks. **7**

   b) Explain Process User IDs and Process Group IDs. **7**

3. a) Explain Vector Reads and Writes. **7**

   b) Explain Message Queues in detail. **7**

4. a) Write the Memory Management Process. **7**

   b) What is difference between Swapping and Paging ? **7**

5. Explain *popen* and *pclose* functions in standard I/O library. **14**

6. Explain Race condition with different process. **14**

7. Explain the UNIX Architecture with block diagram. **14**

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