Seat
No.

M.C.A. (Commerce) (Part – I) (Semester – I) (New) (CBCS) Examination, 2016
COMPUTER ORGANIZATION AND ARCHITECTURE

Day and Date : Monday, 25-4-2016   Max. Marks : 70
Time : 10.30 a.m. to 1.00 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) Select correct alternative.   **8**

    1) MISD stands for

       A) Multiple Instruction stream Single Data

       B) Multiple Instruction Memory Data

       C) Memory Instruction Multiple Data

       D) Multiple Information Single Data

    2) Converting number (11000101010000111)2 to hexadecimal equivalent will give

       A) (18C86)16   B) (18B86)16   C) (18A87)16   D) (18A86)16

    3) The decimal equivalent of the binary no. 11100.001 is

       A) 28.50   B) 30.12   C) 28.125   D) none of these

    4) After Reset the 80386 starts instruction fetch from the address

       A) FFFFF0   B) FFFFFFF   C) FFFFFFF0   D) All of these

    5) The AND gate output will be high if the two inputs are

       A) 00   B) 01   C) 10   D) 11

    6) The output of half adder is

       A) Sum and borrow   B) Sum and carry

       C) Difference and carry   D) None of these

7) A micro programmed control unit is

   A) Faster than Hard-wired control

   B) Easy to implement of new instruction

   C) Useful to run small program

   D) Usually refers to the control unit of microprocessor

8) Which device has one input and many outputs ?

   A) Flip flop   B) Multiplexer   C) Demultiplexer D) Counter

B) State **True** or **False** :   **6**

1) All processing receive the same instruction from the control unit but operate in different data in MIMD.

2) Micro-programmed control unit is flexible.

3) In 80386 microprocessor having 24 bit address bus.

4) The average time required to reach a storage location in memory and obtain its contents called seek time.

5) Multiplexer has many inputs and one outputs.

6) Flip flop holds two bits of information.

2. A) What is Multiplexer ? Explain 1:8 DUX.   **7**

   B) What is flip flop ? List out the different types of flip flop explain S-R flip flop.   **7**

3. A) Explain System Bus Characteristics.   **7**

   B) What is Parallel Database ? Explain factors affecting on performance of processor   **7**

4. A) What is Shift Register ? Explain Serial in Serial Out.   **7**

   B) Differentiate RISC and CISC.   **7**

5. A) Explain the memory Hierarchy in detail.   **7**

   B) Explain 80286 microprocessor.   **7**

6. A) What is register ? Explain different types of register.   **7**

   B) Explain CPU Building blocks accumulator based.   **7**

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

  A) Decoder   B) EBCDIC and ASCII   C) Parallel Processing.

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Seat No.

M.C.A. – I (Semester – I) (Commerce) Examination, 2016
C PROGRAMMING (New-CBCS)

Day and Date : Wednesday, 27-4-2016　　　　　　　　　Total Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

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

1. A) State whether the statement is **True** or **False** :　　　　**4**

　　1) A preprocessor is a program that processes the source code file before it is given to a complier.

　　2) Void is an empty data type.

　　3) Jump statement transfer control conditionally.

　　4) Local variable are also called static variable.

　B) Define the following terms :　　　　**10**

　　1) Identifier

　　2) Compiler

　　3) Keyword

　　4) Algorithm

　　5) Constant.

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

　A) Explain local and Global variable.

　B) Explain the various data types in C.

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

　A) What is the structure of a C Program ?

　B) Write a program to accept a character and display its ASCII value.

P.T.O.

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

   A) Discuss the different storage classes used in C.

   B) What is structure and union explain with example.

5. What is Array ? Explain the different types of Array.   **14**

   Write down a program for addition of two matrixes.

6. What is function ? Discuss the different category of function and explain the different parameter passing methods with example.   **14**

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

   1) Pointer

   2) Looping Statements

   3) Types of Operators.

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Seat
No.

M.C.A. (Commerce) (Part – I) (Semester – I) Examination, 2016
DATABASE MANAGEMENT SYSTEM (New CBCS)

Day and Date : Friday, 29-4-2016   Max. Marks : 70
Time : 10.30 a.m. to 1.00 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. A) Choose alternative and rewrite the sentences.   **10**

   1) _____ data models provide concepts that describe details of how data is stored in the computer.
      a) Physical Level   b) View Level
      c) Logical Level   d) All of these

   2) Schema is same as an _____
      a) Extension of Database   b) Intension of Database
      c) Sub Schema   d) None of the above

   3) Create, Alter, Drop are examples of _____
      a) DDL   b) DML   c) VDL   d) All of these

   4) A _____ can be identified uniquely only by considering the primary key of another entity.
      a) Candidate Key   b) Weak Entity
      c) Strong Entity   d) None of the above

   5) Entity relationship model was introduced by _____ in 1976.
      a) P.P. Chen   b) Dr.E.F. Codd
      c) Dr. Michael Hammer   d) Both a and b

P.T.O.

6) A _____ is a specific Boolean expression that must be TRUE for the trigger to fire.

   a) Procedure   b) Trigger   c) Cursor   d) Index

7) _____ is defined as the number of entities associated with the relationship.

   a) Cardinality   b) Relational Algebra

   c) Both a and c   d) Degree of Relationship

8) The first generation of DBMS is represented by system _____

   a) Hierarchical systems   b) Relational model

   c) Network model   d) None of the above

9) In 1971, conference on data system and languages appointed by _____

   a) Database Task Group

   b) Database Work Group

   c) Database Management Group

   d) Database Administration Group

10) Which of the following is correct ?

   a) Data + DBMS = Databases

   b) Data + Databases = DBMS

   c) Database + DBMS = Database System

   d) None of the above

B) State **true** or **false.**   **4**

   i) Both an SQL query as well as a PL/SQL code is interpreted in Oracle.

   ii) Veiws are the Physical tables of data extracted from existing tables.

   iii) All functions performed by constraints can not equally be performed by triggers.

   iv) DDL operations, once performed are not automatically committed and do require any commit statement for confirmation.

2. Write in short **14**

   a) Concept of 3-tier architecture of database.

   b) Define Normalization. Write about different types of Normalization.

3. Write in short. **14**

   a) Explain in concept of ERD.

   b) Elaborate concept of RAID.

4. Write in short. **14**

   a) Enumerate concept of relational algebra.

   b) Explain about ACID properties in brief.

5. Explain the concept of Generalization and Specialization with examples. **14**

6. What is Transaction define and explain ? Write about different states of transaction. **14**

7. Explain concept of Crash Recovery and Back Up and concept of loss-less join. **14**

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Seat
No.

M.C.A. – I (Commerce) (Semester – I) (New) (CBCS) Examination, 2016
PRINCIPLES OF MANAGEMENT

Day and Date : Friday, 6-5-2016   Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

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

1. A) State **true** and **false** :   **5**

    1) Managers are responsible for the actions of their subordinates.

    2) A key attribute of managerial responsibility is setting priorities.

    3) Managers are accountable only for their own work.

    4) An analytical thinker views the entire task as relates it other tasks.

    5) Managers may have to resolve disputes within the organization.

   B) Match the following :   **5**

    1) Fourteen Principles of Management   i) Elton Mayo

    2) Hawthorne Experiments   ii) Henri Fayol

    3) Bureaucracy   iii) F.W. Taylor

    4) Time and Motion Study   iv) Max Weber

    5) Motivation   v) Stimulation

2. Answer in **1-2** sentences :   **10**

    i) Levels of management.

    ii) Define the concept of MBO.

    iii) What do you mean by personality ?

    iv) Define organisation behaviour.

    v) What do you mean by informal group ?

P.T.O.

3. Attempt **any four** from following : **20**

   i) Explain types of planning.

   ii) Discuss contribution of C.K. Pralhad in development of Management Thoughts.

   iii) Discuss the factors affecting on personality.

   iv) Define leadership. Discuss types of leadership.

   v) Reasons for joining the group.

   vi) Define authority and responsibility. Discuss delegation of authority.

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

   i) What do you mean by organisation behaviour ? Discuss the difference between team and group.

   ii) Discuss in detail meaning and process of decision making.

   iii) Define Staffing. Explain in detail the process of staffing.

5. What do you mean by Management ? Explain in detail the functions of management. **10**

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Seat
No.

M.C.A. (Commerce) (Part – I) (Semester – I) (Old) Examination, 2016
COMPUTER ORGANIZATION AND ARCHITECTURE

Day and Date : Monday, 25-4-2016   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. A) Select correct alternative :   **8**

     1) MIMD stands for_____
        a) Multiple Instruction Multiple Data
        b) Multiple Instruction Memory Data
        c) Memory Instruction Multiple Data
        d) Multiple Information Memory Data

     2) The circuit used to store one bit of data is known as _____
        a) Encoder   b) OR gate   c) Flip Flop   d) Decoder

     3) The number of times the page appear in the cache memory is
        called _____
        a) Hit   b) Miss   c) Hit Ratio   d) All of these

     4) After Reset the 80386 starts instruction fetch from the address _____
        a) FFFFF0   b) FFFFFFF
        c) FFFFFFF0   d) All of these

     5) The NAND gate output will be low if the two inputs are _____
        a) 00   b) 01   c) 10   d) 11

6) Half adder consists of _____ and _____ gates.

   a) EX-OR&AND   b) EX-OR&OR

   c) EX-OR&NOT   d) None of these

7) The addressing mode used in the instruction Add R1, (1001)

   a) Direct addressing   b) Register addressing

   c) Immediate addressing   d) Indirect addressing

8) The memory in which following information is lost when power is_____

   a) Virtual memory   b) Dynamic RAM

   c) Static RAM   d) Associative memory

B) State **True** or **False** :   **6**

   1) Parallel processing increase response time and throughput.

   2) In MISD single data stream is fed into multiple processing units.

   3) Clock speed and bandwidth not affect on performance of processor.

   4) The Stack pointer is 8 bit register.

   5) In Hardwired control unit it is easy to add new instructions.

   6) Demultiplexer has many in puts and one outputs.

2. A) What is Demultiplexer ? Explain 1 : 8 DUX.   **7**

   B) What is counter ? Explain 4-bit synchronous counter.   **7**

3. A) What is parallel processing ? Explain Flynn's classification detail.   **7**

   B) Explain DMA transfer modes.   **7**

4. A) Explain Half Adder and Full Adder.   **7**

   B) What is shift register ? Explain serial in parallel out.   **7**

5. A) What are the different components of microprocessor.   **7**

   B) Explain superscalar with pentium microprocessor.   **7**

6. What are the break through in microprocessor ? Explain 80486 microprocessor in detail.   **14**

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

   A) Encoder   B) Logic gates   C) Master Slave J-K flip flop.

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Seat No.	

M.C.A. (Commerce) (Part – I) (Semester – I) (Old) Examination, 2016
C PROGRAMMING

Day and Date : Wednesday, 27-4-2016   Total 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) **All** questions carry **equal** marks.

1. A) Choose correct alternative.   **10**

   1) Size of pointer in C language is _____ bytes.

      A) 1   B) 4   C) 3   D) 2

   2) String ends with _____ character.

      A) &   B) ?   C) \0   D) #

   3) In _____ parameter passing technique if we change formal parameters actual parameters does not change.

      A) call by value   B) call by reference
      C) call by address   D) none of these

   4) If two strings are same, then strcmp() function returns

      A) 0   B) –1   C) 1   D) same

   5) For binary files, a _____ must be appended to the mode string.

      A) nothing   B) "b"   C) "binary"   D) "01"

   6) If there is any error while opening a file, fopen will return

      A) Nothing   B) EOF
      C) NULL   D) Depends on compiler

   7) Which is correct with respect to size of the datatypes ?

      A) char > int > float   B) int > char > float
      C) char < int < double   D) double > char > int

8) Which of the datatypes have size that is variable ?

A) int B) struct C) float D) double

9) # include is called

A) Preprocessor directive B) Inclusion directive

C) File inclusion directive D) None of these

10) C preprocessor is conceptually the first step during compilation

A) true B) false

C) depends on the compiler D) depends on the standard

B) State whether statements are **true** or **false**. **4**

1) Switch expression must be an integral type.

2) Keyword void is a datatype in C.

3) All static variables are automatically initialized to 1.

4) In C, index of first element in array is 1.

2. A) What is token ? Explain elements of token. **7**

B) Write a program to find maximum of three numbers using conditional operator. **7**

3. A) Write a program that demonstrate difference between while and do-while statement. **7**

B) To store 10 elements in consecutive memory locations, suggest suitable data types and explain with example. **7**

4. A) Write a program that invoke a function called find( ) to perform following tasks. **7**

i) Receive character array and single character.

ii) Return 1 if specified character found in the array otherwise return 0.

B) What is Recursion ? Explain with example. **7**

5. A) Define a structure datatype called time_struct containing hour, minutes and seconds. Develop a program that would assign values to individual members and display the time in following form. **7**
Hour : Minutes : seconds

B) Differentiate between structure and union. **7**

6. What is Pointer ? Explain following concepts with program. **14**

    I) Pointer to function

    II) Pointer to array

    III) Pointer to structure.

7. A) Write a program to write a file with the contents "Welcome to C programming". Read it and display its contents. **7**

    B) Explain following functions of Graphics in C **7**

       I) setlinestyle( )

       II) setcolor( )

       III) setfillstyle( )

       IV) floodfill( )

       V) circle( )

       VI) rectangle( )

       VII) outtextxy( ).

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Seat
No.

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

Day and Date : Friday, 29-4-2016　　　　　　　　　　　　Max. 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. A) Multiple choice questions :　　　　　　　　　　　　　　　　　　　**14**

　　1) The expansion of E-R diagram is
　　　　a) Entity-Relationship diagram　　b) Entity-Relative diagram
　　　　c) Entity-Relation diagram　　　　d) Entity-Rationalized diagram

　　2) Normalization is a process of restructuring a relation to
　　　　a) Minimize duplication of data in a database
　　　　b) Maximize duplication of data to ensure reliability
　　　　c) Make it of uniform size
　　　　d) Allow addition of data

　　3) The abbreviation DBMS stands for
　　　　a) Data Base Manipulation System
　　　　b) Data Bank Manipulating System
　　　　c) Data Base Management System
　　　　d) Data Bank Management System

　　4) A transaction may not always complete its execution successfully such a transaction is termed
　　　　a) Aborted　　　　　　　　　　b) Terminated
　　　　c) Closed　　　　　　　　　　d) All of the mentioned

　　5) A _____ is a query that retrieves rows from more than one table or view.
　　　　a) Start　　　　　　　　　　　b) End
　　　　c) Join　　　　　　　　　　　d) All of the mentioned

P.T.O.

6) Which of the following is not a integrity constraint ?

   a) Not null   b) Positive   c) Unique   d) Check 'predicate'

7) Foreign key is the one in which the _____ of one relation is referenced in another relation.

   a) Foreign key   b) Primary key   c) References   d) Check constraint

8) Trigger are supported in

   a) Delete   b) Update

   c) Views   d) All of the mentioned

9) Aggregate functions are functions that take a _____ as input and return a single value.

   a) Collection of values   b) Single value

   c) Aggregate value   d) Both a) and b)

10) Which of the following creates a virtual relation for storing the query ?

   a) Function   b) View

   c) Procedure   d) None of the mentioned

11) Which of the following makes the transaction permanent in the database ?

   a) View   b) Commit   c) Rollback   d) Flashback

12) The log is a sequence of _____, recording all the update activities in the database.

   a) Log records   b) Records   c) Entries   d) Redo

B) Define the following terms :

   1) Cursor

   2) View

2. A) Explain entity relationship diagram with suitable example. **7**

   B) Explain in brief log-based recovery. **7**

3. A) Explain Comparison between HDM and NDM. **7**

   B) Explain Cursor concept in details. **7**

4. A) Explain Join Concept in details. **7**

   B) Explain Cursor concept with suitable example. **7**

5. Explain E.F. Codd's rules in details. **14**

6. Write a queries for following : **14**

   i) Create a query to display the last name and salary of employees earning more than $ 12,000.

   ii) Create a query to display the employees last name and department number for employee number 176.

   iii) Display the employee last name, job ID and start date of employees hired between February 20, 1998 and May 1, 1998.

   iv) Display the last name and hire date of every employee who was hired in 1994.

   v) Display the last name and job title of all employees who do not have a manager.

   vi) Display the last name, job and salary for all employees whose job is sales representative.

   vii) Display the last name and department number of all employees in departments 20 and 50.

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

   1) Normalization

   2) Role of DBA

   3) Triggers.

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SLR-K – 9

M.C.A. – I (Semester – I) (Commerce) Examination, 2016
DISCRETE MATHEMATICS (Old)

Day and Date : Monday, 2-5-2016　　　　　　　　　　　Total 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** and Q. **6**.
　　　　　　　　4) Figures to the **right** indicate **full** marks.

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

   1) The pair of nodes that are connected by an edge are called _____

   2) Hasse diagram is used to represent _____

   3) If R is a relation on set A and if R is reflexive, symmetric and transitive then R is called as _____

   4) The floor function $F(7.4) = [7.4]$ is _____

   5) If a graph has 5 vertices and 7 edges, then the size of its adjacency matrix is _____

   6) $\sim(p \vee q) \equiv$ _____

   7) A graph with n vertices in which all vertices have $(n-1)$ degree is called _____

2. A) What is transitive closure ? If set A = {a, b, c, d} and R is the relation defined on set A is R = ((a, b), (b, d), (a, c), (c, b), (d, a)) then find the transitive closure of R by Warshall's algorithm. **7**

   B) State and prove Handshaking theorem. **7**

3. A) Determine whether the following compound proposition is tautology or contradiction. Using truth table : $\sim(q \rightarrow r) \wedge r \wedge (p \rightarrow q)$. **7**

   B) What is function ? Explain types of function. **7**

4. A) Define Lattice with example. **7**

   B) Show that $(e \wedge d)$ can be derived from the premises $a \rightarrow b, b \rightarrow \sim c, c, a \vee (e \wedge d)$. **7**

5. Explain isomorphic graphs. Determine whether the graphs shown below are isomorphic or not. **14**
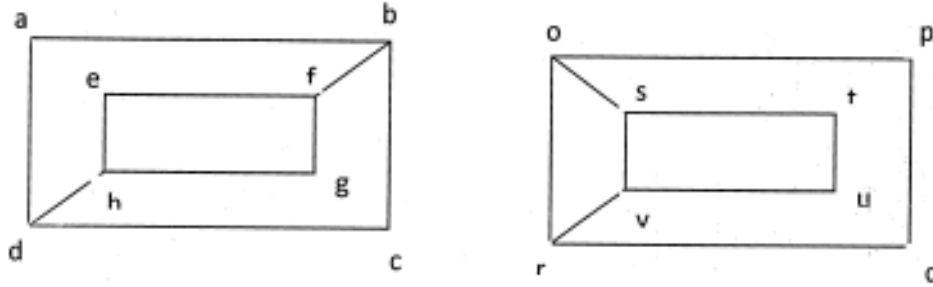
6. What is group code ? Explain even parity check and odd parity check with example. Also determine the group code $e_H : B^2 \rightarrow B^5$, where m = 2 and n = 5. **14**

1 1 1

1 0 1

1 0 0

0 1 0

0 0 1

7. Explain the terms **(any 2)** : **14**

   i) Complete graph

   ii) Hasse diagram

   iii) Tautology, contradiction and contingency.

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Seat
No.

M.C.A. – I (Commerce) (Semester – I) (Old) Examination, 2016
PRINCIPLES OF MANAGEMENT

Day and Date : Friday, 6-5-2016   Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

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

1. A) State **true** or **false**.   7

   1) Management is always defined as dynamic, universal, ever-changing subject.

   2) In formal group, the behaviour that one should engage in are stipulated by and directed towards organization goals.

   3) Fayol attempted to develop scientific management.

   4) Formal groups are formed by an organisation.

   5) Leaders always focus on personal goals rather than group.

   6) Every manager in an organisation gives direction to his subordinates as a superior and receives direction as subordinate from his superior.

   7) Henry Fayol's contribution is classified into ten industrial and management principles.

   B) Match the pairs :   7

Group A	Group B
1) Autocratic leader	a) Top level
2) Democratic leader	b) Peter Drucker
3) Delegation of authority	c) Technical skills
4) Labour	d) Aggressive in action
5) IT Professionals	e) Participative style
6) MBO	f) Lower level
7) Board of the Directors	g) Passing rights to the subordinates

P.T.O.

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

   a) What are the different skills required for managers ?

   b) Planning process.

   c) Levels of management.

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

   a) Types of team.

   b) Why do people join group ?

   c) Explain MBO process.

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

   a) Decision making process.

   b) Difference between formal and informal organization.

   c) Controlling process.

5. Define staffing and explain in detail staffing process. **14**

6. Explain types of group and difference between group and team. **14**

7. Explain Henry Fayol's various principles of management. **14**

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Seat No.

M.C.A. (Commerce) (Part – I) (Semester – II) (Old) Examination, 2016
OBJECT ORIENTED PROGRAMMING USING C++

Day and Date : Tuesday, 26-4-2016   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**.

4) Figure to the **right** indicate marks to a question.

1. Choose correct alternative.   **14**

   1) What is the correct value to return to the operating system upon the successful completion of a program ?

      A) – 1   B) 1

      C) 0   D) Programs do no return a value

   2) A function can be overloaded with a different return type if it has all the parameters same.

      A) True   B) False

   3) What punctuation is used to signal the beginning and end of code blocks ?

      A) { }   B) – > and < –

      C) BEGIN and END   D) (and)

   4) A function that calls itself for its processing is known as

      A) Inline Function   B) Nested Function

      C) Overloaded Function   D) Recursive Function

   5) Which of the following is a correct comment ?

      A) */ Comments */   B) ** Comment **

      C) /* Comment */   D) { Comment }

6) Arguments of a functions are separated with
   A) comma (,)   B) semicolon (;)   C) colon (:)   D) none of these

7) Which of the following is the correct operator to compare two variables ?
   A) : =   B) =   C) equal   D) ==

8) Observe following function declaration and choose the best answer :
   int divide (int a, int b = 2)
   A) Variable b is of integer type and will always have value 2
   B) Variable a and b are of int type and the initial value of both variables is 2
   C) Variable b is international scope and will have value 2
   D) Variable b will have value 2 if not specified when calling function

9) Which of the following is the boolean operator for logical-and ?
   A) &   B) &&   C) | D) |&

10) Strings are character arrays. The last index of it contains the null-terminated character
    A) \n   B) \t   C) \0   D) \1

Predict the output :

11) void main()
    {
       in a, *pa, &ra;
       pa = &a;
       ra = a;
       cout <<"a="<<a<<"*pa="<<*pa<<"ra"<<ra ;
    }

12) class some{
    public:
       ~some() {cout<<"some's destructor"<<endl;   }
    };
    void main()
    {   some s;
         s.~some(); }

13)
```cpp
class A
{ int id;
   static int count;
public:
   A() {
     count++;
     id = count;
     cout<<"constructor called " <<id<<endl; }
    ~A()  {
            cout <<"destructor called " <<id<<endl; }
};
int A::count = 0;
int main()
{    A a[2];
      return 0;   }
```

14)
```cpp
class Base {
protected:
   int x;
public:
   Base (int i) {x = i;)
};
class Derived : public Base {
  public:
     Derive (int i):Base(i) { }
     void print() {cout<<x;}
};
int main()
{     Derived d(10);
         d.print();              }
```

2. a) Explain the use of new and delete with example. **7**

   b) Explain static with reference to member variable and function. **7**

3. a) Explain following : **7**

   1) Container Adapter

   2) Integrator.

   b) Explain different data types in C++. **7**

4. a) Explain in detail various classes for file stream operation, also give an example for opening and closing file. **7**

   b) Explain namespace with its use and application. **7**

5. Explain inheritance in CPP. Write a program to implement Vehicle class with data members as wheels and weight, Inherit Car and Truck from this class. Consider suitable data members and member function. Initialized these data members using constructor. **14**

6. a) Differentiates C Vs. C++. **7**

   b) Explain in brief try, catch and throw statement with example. **7**

7. Create a class Int. Overload all five integer arithmetic operators (+ and –) so that they operate an objects of type int. If the result of any such arithmetic operation exceeds the normal range of ints = from = 32,768 to 32,767 – have the operator print a warning and terminate the program. **14**

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Seat No.	

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

Day and Date : Thursday, 28-4-2016   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. A) Fill in the blanks :   **4**

   1) _____ page replacement algorithm suffers from Belady's anomaly.

   1) LRU   2) MRU   3) FIFO   4) LIFO

   2) The main reason to encrypt a file is to _____

   1) Reduce its size

   2) Secure it for transmission

   3) Prepare it for backup

   4) Include it in the start-up sequence

   3) Thrashing _____

   1) Always occurs on large computers

   2) Can always be avoided by swapping

   3) Can be caused by poor paging algorithm

   4) None of these

   4) A process said to be in _____ state if it was waiting for an event that will never occur.

   1) Safe   2) Unsafe   3) Starvation   4) Deadlock

P.T.O.

B) Answer in **1-2** sentences : **(5×2)**

1) What are the different types of interrupts ?

2) What are the different types of I/O communication techniques ?

3) What is deadlock ?

4) What do you mean by page fault ?

5) What is Thrashing ?

2. Attempt the following (**any 2**) : **14**

1) What is process ? Describe in detail structure and purpose of PCB.

2) Explain the need for synchronization.

3) Discuss the various protection mechanisms.

3. Attempt the following (**any 2**) : **14**

1) Explain with example various disk scheduling algorithms.

2) What is deadlock ? Explain the necessary condition for deadlock.

3) Explain segmentation memory management scheme in detail.

4. Attempt the following (**any 2**) : **14**

1) What is page fault ? Write down the steps for handling the page fault.

2) Explain Swapping in detail.

3) Difference between Distributed and Centralized Operating Systems.

5. Attempt the following : **14**

Explain following scheduling algorithms with the help of following examples along with their advantages and disadvantages (Arrival time = 0)

a) First Come First Served (FCFS)

b) Shortest Job First (SJF)

c) Priority Scheduling.

d) Round Robin Scheduling (time quantum = 3)

Process	Burst time	Priority
P1	5	4
P2	12	1
P3	16	3
P4	18	5
P5	2	2

6. Calculate the average cylinder movements for the all disk scheduling algorithms. Consider if disk head is initially at cylinder 60.

   Consider a reference string 87, 170, 40, 150, 36, 72, 66, 15.   **14**

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

   1) Demand Paging

   2) Compaction

   3) C-Scan.

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Seat No.

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

Day and Date : Tuesday, 3-5-2016   Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

Instructions : 1) Q. No. **1** and **7** are **compulsory**.
2) Attempt **any two** questions from Q. No. **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) Actual programming of software code is done during the _____ step in the SDLC.

      a) Design   b) Maintenance and evaluation

      c) Analysis   d) Development and documentation

   2) The first step in the systems development life cycle (SDLC) is

      a) Problem/Opportunity Identification

      b) Design

      c) Development and Documentation

      d) Analysis

   3) The role of a system analyst drawing up a requirements specification is similar to

      a) the workers who construct a building

      b) a contractor constructing a building

      c) a structural engineer designing a building

      d) architect designing a building

   4) The final specifications are arrived at

      a) after feasibility study   b) during feasibility study

      c) just before implementation phase d) when the system is being designed

P.T.O.

5) _____ is concerned with fixing reported errors in the software.

   a) Corrective Maintenance   b) Adaptive Maintenance

   c) Perfective Maintenance   d) Post Maintenance

6) _____ is a systematic methodology for analyzing the design of an existing device or system, either as an approach to study the design or as a prerequisite for re-design.

   a) Reverse Engineering   b) Engineering

   c) Re-Designing   d) All of above

7) An attribute that uniquely identifies a thing is called a

   a) compound attribute   b) class

   c) key   d) attribute

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

1) SRS establish the basis for agreement between client and supplier.

2) ERD is the example of process type of modeling.

3) The primary objective of testing is to design the programs, database and test plan.

4) Corrective Maintenance is concerned with fixing reported errors in the software.

5) Decision table is visual means for showing how a rule applies to repetitive situations

6) Close ended questionnaire will have fixed response.

7) The decision logic is expressed by flow chart.

2. A) Define the following :   **7**

   a) System boundary   b) Coupling

   c) Feedback   d) Open system

   e) Close system   f) Subsystem

   g) Cohesion.

B) Explain purpose and types of software testing.   **7**

3. What is the systems development life cycle ? Briefly describe the activities it includes. **14**

4. A) Define Output. What are the analyst's objectives in designing output ? **7**

   B) Explain Prototype model of system development. **7**

5. Draw ERD and DFD for Payroll System of an organization. **14**

6. Describe the concept and types of maintenance. **14**

7. Write short notes on **any two** of the following : **14**

   1) System Requirement Specification (SRS)

   2) CASE tool architecture

   3) Reverse Engineering.

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Seat No.

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

Day and Date : Saturday, 7-5-2016   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. A) Select correct alternative :   **8**

　 1) The decision-making level of an organization that is most concerned with
　　　optimizing organizational efficiency is the _____

　　　A) Operational level　　　　　　　B) Strategic level

　　　C) Tactical level　　　　　　　　 D) All of these

　 2) A report that contains information about unusual situations is _____

　　　A) Scheduled report　　　　　　　B) Exception report

　　　C) Key indicator report　　　　　　D) All of these

　 3) ERP system limitation are

　　　A) Manager can not generate custom report or queries without help from
　　　　 programmer

　　　B) ERP system provides current status only such as open orders

　　　C) The data in the ERP application is not integrated

　　　D) All of these

　 4) The decision-making environment of an executive level manager can be
　　　characterized as

　　　A) Structured　　　　　　　　　　B) Unstructured

　　　C) SCM　　　　　　　　　　　　 D) All of these

P.T.O.

5) With a good ERP package the organization will have the capability of achieving dramatic improvements in critical area such as _____

   A) Cost   B) Quality

   C) Speed   D) All of these

6) Which of the following is not true in the case of ERP system ?

   A) They allow increased control

   B) They open up access to information to those who need it

   C) Information becomes available across the organization

   D) They create more work and hence increase the IS workforce

7) What are the characteristics of information ?

   A) Accuracy   B) Relevant

   C) Timeliness   D) All of these

8) _____ covers methods and technologies used by companies to manage their relationship with clients.

   A) Customer relationship management

   B) Supply chain management

   C) Product life cycle management

   D) None of these

B) State **True** or **False** :   **6**

1) The difference between a business function and a business process is that a process is that a process cuts across more than one business function to get a task done.

2) A decision support system uses models to manipulate data.

3) The decision-making level of an organization that is most concerned with long-term strategy is the executive level.

4) ERP is just to impress customer.

5) Information and data are not interchangeable terms.

6) Application such as diagnosis, design, prediction and interpretation are expert system.

2. A) What is MIS ? Explain characteristics and function of MIS.   **7**

    B) What is Information ? Explain types of information.   **7**

3. A) What is EIS ? Explain integration of DSS and EIS.   **7**

    B) What is ERP ? Explain sales and distribution module of ERP.   **7**

4. A) Comparison of conventional and expert systems.   **7**

    B) Explain ERP implementation life cycle.   **7**

5. A) Post Evaluation and Maintenance of ERP.   **7**

    B) What are needs of security for information system ?   **7**

6. A) Define DSS ? Explain characteristics and capabilities of DSS.   **7**

    B) Explain information system for financial system.   **7**

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

    A) Supply Chain Management

    B) SAP

    C) Quality of information.

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SLR-K – 21

| Seat No. | |

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

Day and Date : Monday, 25-4-2016   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 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. Fill in the blanks :   **14**

   1) If stack is empty then it is called as _____

   2) For space utilization circular queue is better than linear queue _____

      (true/false)

   3) In ascending priority queue _____ element is deleted first.

   4) _____ tree is called as height balanced tree.

   5) The DFS uses _____ data structure to hold the nodes.

   6) _____ linked list provides two way traversal.

   7) A binary tree can have maximum _____ children.

2. A) Write a note on AVL tree with example.   **7**

   B) Differentiate DFS and BFS with examples.   **7**

3. A) Write a C++ program to reverse the string using stack.   **7**

   B) Differentiate between Array and Linked list.   **7**

                                                                          P.T.O.

4. A) Convert Infix expression to Postfix form using stack.

    (b* (a + c – d) / e * f / g ^ (a – d)).   **7**

  B) Write a C++ program to implement queue using array.   **7**

5. A) Write a C++ function to add the node at beginning of doubly linked list.   **7**

  B) Explain DEQueue with example.   **7**

6. Write a C++ program to implement Circular Single linked list with the insert, delete and update operations.   **14**

7. Write a program in C++ to create binary search tree and display tree elements by in-order, pre-order and post-order traversals.   **14**

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Seat
No.

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

Day and Date : Wednesday, 27-4-2016   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**.

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

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

    1) Which of these keywords can be used to prevent class inheritance ?
       a) static   b) constant   c) protected   d) final

    2) Which of these interface is implemented by Thread class ?
       a) Runnable   b) Thread   c) Connections   d) Map

    3) What will be output of following code ?

       public class Abc

       {

          public static void man (String args [ ])

          {

          int arr [ ] = new int [5] ;

          System.out.println (arr) ;

          }

       }
       a) Value stored in arr[0]   b) 0
       c) 0000   d) Gargage Value

    4) Which of the tool is used to compile java code ?
       a) jar   b) javac   c) java   d) javadoc

5) When a thread is created using new operator, the thread is in _____ state.
   a) new   b) running   c) runnable   d) default

6) What is the default thread at the time of starting the program ?
   a) Child Thread   b) Main Thread   c) Thread Pool   d) Thread Group

7) AWT stands for
   a) abstract window toolbar   b) access window toolkit
   c) abstract window toolkit   d) access window toolbar

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

1) Once an interface has been defined, one or more class can implement that interface.

2) A variable defined in a class called as local variable.

3) ReadObject() method of ObjectInputStream interface used to deserialize an object from a stream.

4) 'Class' class is superclass of every class in Java.

5) Every constructor in a class returns only integer value.

6) When a class is declared as final, it can not be inherited.

7) String is basic data type in java to create strings.

2. A) Define Applet. Explain applet life cycle in detail.   **7**
   B) What is overriding ? Explain method overriding in java with example.   **7**

3. A) Explain different features of Java in detail.   **7**
   B) Write a difference between AWT and Swing.   **7**

4. A) Explain different access modifiers supported by java.   **7**
   B) What is synchronization ? Explain synchronized method in java with example.   **7**

5. A) What is PreparedStatement ? Explain its advantages with example.   **7**
   B) What is mean by Thread ? Write a program create a thread using Thread Class.   **7**

6. A) What is Interface ? Explain structure and need of interface with example.   **7**
   B) Write JDBC program to accept login details (username and password) from login table. If user is vaild print message 'Valid user' otherwise print message "Invalid user".   **7**

7. Write a note on following :
   A) Data types in Java   **5**
   B) Abstract Class   **5**
   C) Multilevel inheritance.   **4**

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SLR-K – 23

Seat No.	

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

Day and Date : Friday, 29-4-2016   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) Choose the correct alternative :   **7**

   1) Port address is also called as _____
      a) Physical address   b) Logical address
      c) Specific address   d) None of these

   2) Router works at _____
      a) Physical layer   b) Data-link layer
      c) Network layer   d) None of these

   3) Firewall should be situated _____
      a) Inside a corporate network
      b) Outside a corporate network
      c) Between a corporate network and outside world
      d) None of these

   4) SMTP is a protocol at _____ layer.
      a) Network   b) Application
      c) Transport   d) None of these

   5) Identify the class of IP address 192.68.2.22.
      a) Class A   b) Class B   c) Class C   d) Class D

   6) RARP, ARP and BOOTP protocol used in _____ layer.
      a) Physical layer   b) Data-link layer
      c) Network layer   d) None of these

   7) X.25 is older _____ network based on OSI rather than TCP/IP architecture.
      a) Packet switched   b) Circuit switched
      c) Message switched   d) All of these

P.T.O.

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

1) Electromagnetic wires (radio and infrared) are used to transmit and receive data over air.

2) Every host and router on IP address.

3) In asymmetric key cryptography 1 key is required between communicating parties.

4) UDP allows computers to send data without needing to establish a virtual connection.

5) Detection of transmission error is the function of physical layer.

6) Session layer is responsible for dialog control and synchronization.

7) X.25 protocol suite map to lowest layers of OSI model.

2. A) Explain OSI reference model in details. 7

B) Explain 802.11 wireless LAN with neat labelled diagram. 7

3. A) What is ISDN ? Explain ISDN System Architecture. 7

B) What is routing ? Explain shortest path routing. 7

4. A) Differentiate IPV4 and IPV6. 7

B) What is DNS ? Explain name resolution in detail. 7

5. A) Why firewall is needed ? Explain packet filters in detail. 7

B) What is HTTP ? Explain the types and methods of HTTP connection. 7

6. A) What is network security ? Explain public key algorithm. 7

B) What is IP address ? Explain IP address classes. 7

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

A) DHCP

B) X.25 network

C) ATM network.

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Seat
No.

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

Day and Date : Monday, 2-5-2016   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 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 :

   1) Which of the following is not generally considered a player in the software
      process ?

      A) Customers   B) End-users

      C) Project Managers   D) Sales peoples

   2) The best project team organizational model to use when tackling extremely
      complex problems is the

      A) Closed paradigm   B) Open paradigm

      C) Random paradigm   D) Synchronous paradigm

   3) One of the best ways to avoid frustration during the software development
      process is to

      A) give team members more control over process and technical decisions

      B) give team members less control over process and technical decisions

      C) hide bad news from the project team members until things improve

      D) reward programmers based on their productivity

4) The W⁵HH principle do not contains which of the following question ?

A) Why is the system being developed ?

B) What will be done by whom ?

C) Where are they organizationally located ?

D) How much of each resource is required ?

5) Changes made to an information system to add the desired but not necessarily the required features is called

A) Preventive maintenance   B) Adaptive maintenance

C) Corrective maintenance   D) Perfective maintenance

6) The productivity of a project is measured in terms of _____ per person-month.

A) Testing   B) Debugging

C) Codes Produced   D) Function Points

7) FP-based estimation techniques require problem decomposition based on

A) Information domain values   B) Project schedule

C) Software functions   D) Process activities

8) A Gantt chart is useful in determining _____

A) The level of effort for a task

B) When a task starts and stops

C) How tasks are related to each other

D) Who is assigned to do a task

9) WBS stands for _____

A) Work Breakdown System

B) Work By Standard

C) Work Breakdown Structure

D) Work By System

10) Which software project sizing approaches develop estimates of the information domain characteristics ?

   A) Function point sizing

   B) Change sizing

   C) Standard component sizing

   D) Fuzzy logic sizing

11) Which of the following is not considered as a risk in project management ?

   A) Specification delays   B) Product competition

   C) Testing   D) Staff turnover

12) Which of the following is not a Software Configuration Management Activity ?

   A) Configuration item identification

   B) Risk management

   C) Release management

   D) Branch management

13) Which of the following are parameters involved in computing the total cost of a software development project ?

   A) Hardware and software costs

   B) Effort costs

   C) Travel and training costs

   D) All of the mentioned

14) Which is a software configuration management concept that helps us to control change without seriously impeding justifiable change ?

   A) Baselines   B) Source code

   C) Data model   D) None of the mentioned

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

  B) Explain different peoples involved in S/w Project Management with roles and responsibilities.   **7**

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

   B) What is Group organization ? Explain factors in group communications. **7**

4. A) What is Risk Management ? Explain different Categories of Risk. **7**

   B) Discuss different processes involved in Project Organization. **7**

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

   B) Discuss different factors that influence Software Cost. **7**

6. Explain different layers of Software Configuration Management Process. **14**

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

   A) Intermediate COCOMO Model

   B) CPM & PERT

   C) Ms-Project

   D) W^5HH Principle.

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Seat
No.

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

Day and Date : Friday, 6-5-2016   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) Select correct alternative.   **8**

   1) Select 1 + '99' this query will return

      A) 100   B) ERROR   C) 1   D) 99

   2) Shared Memory is

      A) Loosely coupled architecture

      B) Tightly coupled architecture

      C) Both A) and B)

      D) All of the above

   3) Storing separate copy of database at multiple locations is which of the
      following ?

      A) Data Replication

      B) Horizontal Partitioning

      C) Vertical Partitioning

      D) Horizontal and Vertical Partitioning

   4) A software package consisting if an inference engine and user interface
      program used as an expert development tool is

      A) Knowledge engineer   B) System development

      C) Expert system shell   D) None of the above

                                                                    P.T.O.

5) A distributed database can use which of the following strategies ?

    A) Totally centralized at one location and accessed by many sites

    B) Partially or totally replicated across sites

    C) Partitioned into segments at different sites

    D) All of the above

6) Mobile Application are divided into _____ applications.

    A) Horizontal and Vertical   B) Public and Private

    C) Public and Shared   D) Public and Vertical

7) _____ seeks to improve performance through Parallelization of various operations.

    A) Spatial Database System   B) Parallel Database System

    C) Mobile Database System   D) None of these

8) Which of the following is/are the DDL statements ?

    A) Create   B) Drop

    C) Alter   D) All of the above

B) State **True** or **False** :   **6**

1) Identical software is a major problem for transaction processing in heterogeneous distributed database.

2) Raster data type consists of rows and columns of cells.

3) Write lock on the data item means exclusive locking.

4) Knowledge Base System data is stored in Knowledge base If-then rules.

5) Round-Robin Strategy Scans the relation in order and send Ith Tuple to disk number by Di mod d.

6) Shared Nothing is also called as clustering.

2. A) What is Distributed Database ? Explain their types. **7**

   B) Explain major problem in distributed transaction. **7**

3. A) Explain Inter-operational and Intra-operational parallelism. **7**

   B) What is GIS ? Explain different operations perform on GIS. **7**

4. A) Explain different data types in MySql. **7**

   B) What are the Advantages of ORDBMS ? **7**

5. A) Explain Recovery in Distributed Database. **7**

   B) Explain integration of expert in database. **7**

6. A) Explain different challenges/Drawbacks of mobile database. **7**

   B) What is OODBMS ? Explain the features of OODBMS. **7**

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

   A) Multimedia Database

   B) Two phase commit Protocol

   C) Cloud based Databases

   D) GIS Application.

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Seat No.

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

Day and Date : Tuesday, 26-4-2016   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 options :   **7**

   1) HttpSession session=request.geSession("*****");

   What should be passed instead of ***** to refer existing session object in servlet.

   a) new   b) true

   c) false   d) nothing

   2) <%= %> element in JSP is used to display data on browser, called as
   _____

   a) comment   b) expression

   c) declaration   d) scriplate

   3) _____ tag in web.xml is used to pass parameters to particular application.

   a) <config-param>   b) <application-param>

   c) <init-param>   d) <context-param>

   4) _____ method in RMI is used to bind remote objects which has been bound in rmi registry.

   a) Naming.bind()   b) Naming.find()

   c) Naming.lookup()   d) None of these

   5) A unique 2 byte number which is used to identify application running on computer is called as _____

   a) URL Number   b) IP Address

   c) Port Number   d) Connection Number

P.T.O.

6) SET protocol is used to secure _____ transactions.

   a) ATM   b) Bank

   c) Credit Card   d) None of these

7) A Servlet class directly or indirectly implements _____ interface.

   a) Servlet   b) HttpServlet

   c) GenericServlet   d) DemoServlet

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

1) taglib directive is used to give information about web.xml to jsp container.

2) <jsp:include> includes any resource in executing page at runtime.

3) HTTP protocol is stateless protocol means it does not save state of user.

4) In Java Beans methods may be public or private.

5) URL represents the address that is specified to access a resource as internet.

6) "<%!%>" JSP page element is called as declaration used to print data on browser.

7) <C:OUT> tag does same thing as JSP expression element does.

2. A) Explain JSP life cycle in detail.   **7**

   B) Write and explain the steps to create RMI application with example.   **7**

3. A) What is meant by Servet ? Why it is used ? Explain difference between servlet and CGI.   **7**

   B) What is RequestDispatcher ? Explain with example.   **7**

4. A) What is meant by E-Check ? Explain different types of E-Check.   **7**

   B) What is meant by IP Address ? Write a Java program to display IP Address.   **7**

5. A) Explain different JSP Elements in detail.   **7**

   B) Write RMI application programs to accept a number from user and calculate square of given number on remote location display at client side.   **7**

6. A) Explain the concept of HTTP Request and HTTP Response in detail.   **7**

   B) Write programs for communication of two Java programs running on two different computes.   **7**

7. Write a note on following :

   A) Java Beans   **5**

   B) EJB   **5**

   C) JSP Actions.   **4**

_____

Seat
No.

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

Day and Date : Thursday, 28-4-2016　　　　　　　　　　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 the correct alternative from the following.　　　　　　　　　**14**

　 i) Which of the following jobs are not performed by Garbage Collector ?

　　 1) Freeing memory on the stack

　　 2) Avoiding memory leaks

　　 3) Freeing memory occupied by unreferenced objects

　　 4) Closing unclosed database collections

　　 5) Closing unclosed files.

　　　 a) 1, 2, 3　　　 b) 3, 5　　　 c) 1, 4, 5　　　 d) 4, 5

　 ii) Which of the following assemblies can be stored in Global Assembly Cache ?

　　 a) Private Assemblies　　　　　 b) Friend Assemblies

　　 c) Shared Assemblies　　　　　 d) Public Assemblies

　 iii) _____ control is used for add the control on the form at the run time.

　　 a) Adrotator　　　　　　　　　 b) Placeholder

　　 c) Imagemap　　　　　　　　　 d) Login

　 iv) Which of the following is the necessary condition for implementing delegates ?

　　 a) Class declaration　　　　　　 b) Inheritance

　　 c) Run-time polymorphism　　　　 d) Exceptions

P.T.O.

v) Master page having the _____ extension.

a) .aspx   b) .master   c) .cs   d) .vb

vi) How many web.config files that can be there an ASP.NET application ?

a) only one   b) only two

c) upto ten   d) none of these

vii) The page class file is generated when

a) Every time a page is accessed

b) Whenever the assembly is recompiled and deployed

c) Whenever the configuration settings are changed

d) None of the above

viii) Which of the following denote web control associated with table control function of ASP.NET ?

a) Data list   b) List box   c) Table row   d) All above

ix) _____ define the basic data type of variable in .Net framework.

a) CTS   b) CLS   c) CLR   d) GCA

x) Which of the following is an 4 byte integer ?

a) Char   b) Long   c) Int   d) Byte

xi) Dataset supports which type of architecture ?

a) Connect oriented architecture   b) Disconnected architecture

c) Both   d) None

xii) Which of the following property of DataReader class is used to check whether DataReader object contains records or not ?

a) Items   b) NotNull   c) Count   d) HasRows

xiii) A derived class can stop virtual inheritance by declaring an override as

a) inherits   b) extends   c) inheritable   d) sealed

xiv) Which of the following attribute of page directive is used to embed content page file in master page file ?

a) CodeFile   b) Inherits

c) MasterPageFile   d) Title

2. Write short note on. **(7×2)**

    A) TextReader and TextWriter with example.

    B) Properties and delegates with example.

3. Answer the following. **(7×2)**

    A) Explain all validation server controls with example.

    B) Explain Page Life Cycle in ASP.Net.

4. Explain all Object Oriented Concepts in C# with proper example. **14**

5. Create windows application which will save, update, delete the railway reservation information with fields (passenger_id, passenger_name, date_of_ journey, source, destination, fare). Application must have proper validation. (Design GUI, Database and write code for Save, Update and Delete). **14**

6. A) Write a program for constructor overloading. **7**

    B) Write a program for implementing an event. **7**

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

    1) Web services

    2) .Net Framework

    3) Cross-page posting.

Seat
No.

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

Day and Date : Saturday, 30-4-2016   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****.*
3) *Solve* ***any one*** *question from Q. No.* ***5*** *and* ***6****.*

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

   1) Classification task referred to
      A) Subdivision of a set of example into a number of classes
      B) A measure of the accuracy of the classification of a concept that is given by a certain theory
      C) The task of assigning a classifier to a set of example
      D) None of these

   2) Data mining requires
      A) Large quantities of operational data stored over a period of time
      B) Lots of tactical data
      C) Several tapes drive to store archival data
      D) Large mainframe computers

   3) _____ is a repository of information gathered from multiple sources stored under a unified schema at a single site.
      A) Data mining   B) Data warehouse
      C) Web server   D) None of these

   4) Cluttering is also known as
      A) Supervised learning
      B) Unsupervised learning
      C) Semi-supervised learning
      D) None of these

   5) Which table contain multidimensional data in data warehouse ?
      A) Lookup table   B) Node table
      C) Split table   D) Fact table

6) Which of the following schema contains multiple fact tables ?
   A) Star schema
   B) Snowflakes schema
   C) Fact consultations schema
   D) None of these

7) Data about data is called
   A) Table
   B) Metadata
   C) Database
   D) Integration

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

1) Data warehousing and On-Line Analytical Processing (OLAP) are essential elements of decision support.

2) Data Warehouse provides the best support for analysis while OLAP carries out the analysis task.

3) Precision deals with prediction of value rather than a class.

4) Slice and Dice is changing the view of the data.

5) Data Warehouse provides the best support for analysis while OLAP carries out the prediction task.

6) OLTP gives total view of organization.

7) The dice operation performs a selection on one dimension of the given cube, resulting in a sub cube.

2. A) What is Data Warehouse ? Explain multidimensional data model.   **7**

   B) Explain advantages of OLAP over OLTP.   **7**

3. A) Differentiate ROLAP, MOLAP and HOLAP.   **7**

   B) Explain designing schemas of multidimensional database.   **7**

4. A) Explain partitioning strategy in data warehouse.   **7**

   B) Define Data Mining. Explain KDD process.   **7**

5. A) Explain with example Apriori algorithm.   **7**

   B) What is web mining ? Explain the applications of web mining.   **7**

6. A) What is association rule ? Explain applications of association rule.   **7**

   B) Explain time series and sequential data in web mining.   **7**

7. Write short notes on (**any two**) :   **14**
   A) Metadata
   B) Machine learning
   C) Cluster analysis.

_____

Seat No.	

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

Day and Date : Tuesday, 3-5-2016   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 one** question from Q. **5** and Q. **6**.
4) Figures to the **right** indicate **full** marks.

1. State **True** or **False** :   **14**

   a) A priori estimates refer as Performance Measurement F.

   b) Measurement of algorithm is concerned with the running time and the memory space needed to execute the program.

   c) The time complexity of an algorithm is the amount of computer time it needs to start the process.

   d) Pivot from which all the left side elements are smaller and all the right side elements are greater than Pivot element.

   e) A posteriori testing refers as Performance Measurement.

   f) In multistage graph, edge may connect nodes from same vertex set.

   g) Dynamic programming can be used when solution to a problem can be viewed as result of sequence of decisions.

   h) Time complexity can be calculated by considering data and its size.

   i) Algorithm 'A' is said to be dynamic recursive, if it calls same algorithm i.e. which in turn calls 'A'.

P.T.O.

j) Omega specifically describes the worst-case scenario and can be used to describe the maximum execution time required or the space used by an algorithm.

k) Performance evaluation can be loosely divided into two major phases, a priori estimates and a posteriori testing.

l) In time complexity count method, step count is not incremented by one for Return statement.

m) Theta specifically describes the average-case scenario or asymptotic tight bounds required for time and space used by an algorithm.

n) Any subset that satisfies the problem constraints is called as a feasible solution.

2. A) Differentiate between Divide and Conquer method and Greedy method of problem solving. **7**

B) Explain algorithm characteristics and algorithm specifications. **7**

3. A) Write a note on space complexity. Write algorithm and calculate space complexity for the problem to calculate sum of array element. **7**

B) List out different asymptotic notation with their key characteristics and explain omega notation in detail. **7**

4. A) Explain deletion operations on heap with suitable example. **7**

B) Write note on Optimal merge pattern and find out optimal merge pattern and merge cost for the files having record 9, 7, 12, 14, 15, 3, 5, 17 using greedy method. **7**

5. A) Explain bubble sort. Write algorithm and sort array {5, 9, 3, 11, 7, 6} using bubble sort method. **7**

B) Write note on Branch and bond algorithm. **7**

6. What is multistage graph ? Write algorithm and display minimum cost path for the following 5 stage graph using forward approach. **14**
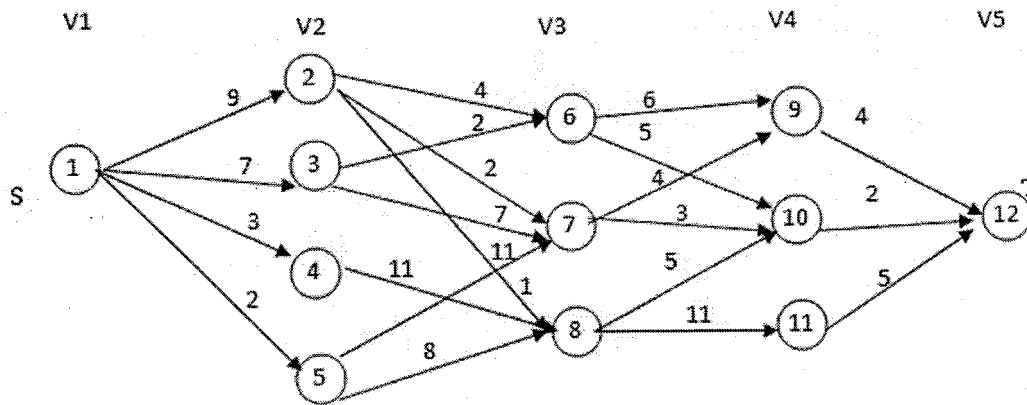
7. Solve **any two** from the following :

A) Write algorithm for quick sort using divide and conquer method. Sort the list {65, 70, 75, 80, 85, 60, 55, 50, 45}. **7**

B) Describe the terms heap, max heap and min leap. **7**

C) Explain greedy method of algorithm and find out best optimal assignment on a machine to finish all 7 jobs. **7**

Task	A	B	C	D	E	F	G
Start	0	3	4	9	7	1	6
Finish	2	7	7	11	10	5	8

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Seat No.

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

Day and Date : Saturday, 7-5-2016   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.**
                3) Solve **any one** question from Q. No. **5** and **6.**

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

     1) In the transportation problem number of allocation less than _____ indicates degeneracy.

         a) m + n + 1   b) n – m + 1   c) m + n – 1   d) none of these

     2) In queuing theory probability of no customers in the system is denoted by

         a) P_o b) P_s c) P_w d) $P(n \geq k)$

     3) Constraints in an LP model represents

         a) Limitations   b) Requirement

         c) Conditions   d) All of the above

     4) Expected length of non empty queue is given by

         a) $L_q = \lambda^2/\mu(\mu - \lambda)$ b) $L = \mu/(\mu - \lambda)$

         c) $L_q = Ls - (\lambda/\mu)$ d) $L = \lambda/(\mu - \lambda)$

     5) Generally CPM technique deals with the activities of

         a) repetitive nature   b) non-repetitive nature

         c) deterministic nature   d) none of these

     6) While solving an assignment problem, an activity is assigned to a resource through a square with zero opportunity cost because the objective is to

         a) minimize the total cost of assignment

         b) reduce the cost of assignment to zero

         c) reduce the cost of that particular assignment to zero

         d) all of the above

     7) For maximization problem in big-M method the objective function coefficients for an artificial variable is

         a) + M   b) – M   c) Zero   d) – 1

P.T.O.

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

1) A game is said to be fair if both upper and lower values of the game are same and zero.

2) In the north west corner method, the cost of transportation on any route of transportation is taken into account.

3) If an activity has zero slack then it indicates that it is dummy activity.

4) In crashing the project duration of non-critical activities is reduced.

5) In exponential service-unlimited queue of single server model average arrival rate of customers is greater than average service rate.

6) The amount of time that is expected to complete the activity is called most likely time.

7) In a pure strategy game, each player always plays just one strategy.

2. A) Customer arrive at a box office window being manned by a single individual according to a Poisson input process with a mean rate of 30 per hour. The time required to serve a customer has an exponential distribution with a mean of 90 seconds. Find the average waiting time of a customer. Also determine the average number of customers in the system and the average queue length. 7

B) The transportation costs per unit from different factories to different centers are given below ; 7

Factories	Distribution Centers				Supply
	A	B	C	D	
P	3	2	7	6	5000
Q	7	5	2	3	6000
R	2	5	4	5	2500
Requirement	6000	4000	2000	1500	13500

Find the Initial Basic Feasible Solution for above transportation problem by using VAM.

3. Use the two-phase method to solve following problem. 14

Max $Z = 3x_1 - x_2$

Subject to the constraints

i) $2x_1 + x_2 \geq 2$

ii) $x_1 + 3x_2 \leq 2$

and $x_1, x_2 \geq 0$.

4. A firm makes two products X and Y, and has a total maximum capacity of production of both products together is 9 tons per day. The firm has permanent contract of atleast 2 tons of X and atleast 3 tons of Y per day. Each ton of X requires 20 machines hours of production time and each ton of Y requires 50 machine hours of production time. The daily 360 machine hours are available. The profit made is Rs. 80 per ton of X and Rs. 120 per ton of Y. How much tons of X and Y should be produced so that firm can earn maximum profit ?
Solve the problem by graphical method. **14**

5. A) Solve the following game by using maximin (minimax) principle, whose payoff matrix are given below : Include in your answer :
   i) Strategy selection for each player
   ii) The value of the game to each player. **7**

Player B

		B_1	B_2	B_3	B_4
Player A	A_1	1	7	3	4
	A_2	5	6	4	5
	A_3	7	2	0	3

B) Four new machines M_1, M_2, M_3 and M_4 are to be installed in a machine shop. There are five vacant places A, B, C, D and E available. Because of limited space, machine M_2 cannot be placed at C and M_3 cannot be placed at A. C_{ij} the assignment cost of machine i to place j in rupees is shown below : **7**

	A	B	C	D	E
M_1	4	6	10	5	6
M_2	7	4	–	5	4
M_3	–	6	9	6	2
M_4	9	3	7	2	3

Find the optimal assignment schedule.

6. A) Explain the following terms (**any two**) : **7**
   a) Queue Discipline
   b) Critical path
   c) Total float

B) Following table gives the information of activity and its duration. **7**

Activity	Predecessor Activity	Time (days)
A	–	5
B	A	7
C	B	2
D	B	3
E	C	1
F	D	2
G	C	1
H	E, F	3
I	G, H	10

a) Draw the network diagram of activities involved in the project and indicate the critical path.

b) Find the total float and free float for each activity.

7. The table below provides cost and time estimates of seven activities of a project. **14**

Activity (i - j)	Time estimates		Direct cost estimates	
	Normal	Crash	Normal	Crash
1 – 2	2	1	10	15
1 – 3	8	5	15	21
2 – 4	4	3	20	24
3 – 4	1	1	7	7
3 – 5	2	1	8	15
4 – 6	5	3	10	16
5 – 6	6	2	12	36

i) Draw the project network corresponding to normal time.

ii) Determine the critical path and the normal duration and normal cost of the project.

iii) Crash the activities so that the project completion time reduces to 9 weeks, with minimum additional cost.

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Seat
No.

M.C.A. – III (Semester – V) (Commerce) (Old) Examination, 2016
HUMAN COMPUTER INTERFACE

Day and Date : Monday, 25-4-2016   Max. 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. A) Select correct alternative :   **8**

    1) Which one of these is a good reason to include sounds in an HCI ?

      A) Users react more quickly to sounds than to visual signals

      B) Users react more slowly to sounds than to visual signals

      C) There is no preference. People just like sounds

      D) The computer reacts to sounds in the same way as a human

    2) Which of these is not a interface style ?

      A) Command line/command prompt   B) Menus

      C) Natural Language   D) Voice Recognition

    3) Which one of these is a good reason for taking care to design a good computer human interface ?

      A) Not every user is a computer expert

      B) Well designed HCIs allow the software to be sold at a better price

      C) Well designed HCIs use less computer resources

      D) Well designed HCIs allow the computer to run faster

    4) Providing accelerators (e.g. keyboard shortcuts) mostly addresses

      A) Utility   B) Efficiency

      C) Learnability   D) Attitude (or likeability)

    5) The cognitive walkthrough mainly evaluates a product's

      A) Utility   B) Efficiency   C) Learnability   D) Likeability

    6) The time between user initiates the activity and computer completes the response is called

      A) Response Time   B) User Planning Time

      C) User Think Time   D) None of these

7) _____ is the process of achieving goals within economical, technical and schedule constraint.

    A) Design   B) Testing   C) Schema   D) None of these

8) _____ is a task analysis technique which uses goals, operators, method and selection rules to describe how a set of tasks to be accomplished.

    A) Key-Stroke level model   B) GOMS Model

    C) Lexical Model   D) COCOMO Model

B) State **True** or **False** :   **6**

1) Structured interviews are less likely to miss salient details than un-structured ones.

2) In printed manual avoid forward references.

3) Email is synchronous interaction.

4) Permit easy reversal of actions feature encourages user to exploration of unfamiliar options.

5) GOMS model address mental stress and functionality.

6) HCI is human centric study of interaction between computer and user.

2. A) Explain different pillars providing guidelines for best user interface design ?   **8**

   B) Explain essence of hypertext and hypermedia.   **6**

3. A) Compare and contrast online and offline help.   **8**

   B) Express your opinion "A design should be User-Centric".   **6**

4. A) Explain applications of synchronous interaction and asynchronous distributed interaction in cooperative systems.   **8**

   B) Describe different steps involved in usability testing.   **6**

5. A) Explain in brief GOMS and KLM model.   **7**

   B) What are the goals of system engineering and HCI ?   **7**

6. A) State and explain eight golden rules of user interface design.   **8**

   B) Explain Multiple window design concept with its advantage and disadvantages.   **6**

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

   A) Image Browsing.

   B) Participatory design.

   C) Guidelines for form fill-in.

   D) Usability testing.

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Seat No.

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

Day and Date : Wednesday, 27-4-2016 　　　　　　　　　　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) If a Direct approach to software project sizing is taken, size can be measured in

      a) LOC 　　　　　　　　　　　　b) FP

      c) LOC and FP 　　　　　　　　d) None of the mentioned

   2) Which software project sizing approaches develop estimates of the information domain characteristics ?

      a) Function point sizing 　　　　b) Change sizing

      c) Standard component sizing 　d) Fuzzy logic sizing

   3) How many forms exists of Barry Boehm's COCOMO Model ?

      a) Two 　　　b) Three 　　　c) Four 　　　d) No form exists

   4) The project planner must reconcile the estimates based on decomposition techniques to produce a single estimate of effort.

      a) True 　　　　　b) False

   5) Which of the following is not considered as a risk in project management ?

      a) Specification delays 　　　　b) Product competition

      c) Testing 　　　　　　　　　　d) Staff turnover

   6) Which of the following is not a Software Configuration Management Activity ?

      a) Configuration item identification 　b) Risk management

      c) Release management 　　　　　　d) Branch management

P.T.O.

7) The COCOMO model takes into account different approaches to software development, reuse, etc.

   a) True   b) False

8) Which of the following are parameters involved in computing the total cost of a software development project ?

   a) Hardware and software costs   b) Effort costs

   c) Travel and training costs   d) All of the mentioned

9) Quality Management software engineering is also known as

   a) SQA   b) SQM   c) SQI   d) SQA and SQM

10) Inspections and testing are what kinds of Quality Costs ?

   a) Prevention   b) Internal Failure

   c) External Failure   d) Appraisal

11) What is Six Sigma ?

   a) It is the most widely used strategy for statistical quality assurance

   b) The "Six Sigma" refers to six standard deviations

   c) It is the most widely used strategy for statistical quality assurance AND The "Six Sigma" refers to six standard deviations

   d) A Formal Technical Review (FTR) guideline for quality walkthrough or inspection

12) Which of the following is not a core step of Six Sigma ?

   a) Define   b) Control   c) Measure   d) Analyse

13) Which is a software configuration management concept that helps us to control change without seriously impeding justifiable change ?

   a) Baselines   b) Source code

   c) Data model   d) None of the mentioned

14) Which of the following option is not tracked by configuration management tools ?

   a) Tracking of change proposals

   b) Storing versions of system components

   c) Tracking the releases of system versions to customers

   d) None of the mentioned

2. Attempt the following : **14**

   A) Explain Delphi Cost Estimation.

   B) Explain in details 4 p's of project.

3. Attempt **any two** of the following : **14**

   A) Why would a software development team want to make use of an independent software quality assurance group ?

   B) What is CMM ? Explain the different level of CMM.

   C) Explain ISO 9000 principles.

4. Attempt the following : **14**

   A) Define Quality Plan and explain in detail steps in quality plan.

   B) Explain users role in software construction and acceptance.

5. Explain in detail SCM process. **14**

6. Explain PERT and Gantt chart in detail. **14**

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

   1) Characteristics of performance management

   2) Reel's common sense approach

   3) Function Point Analysis.

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SLR-K – 33

Seat No.

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

Day and Date : Friday, 29-4-2016   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.***
              4) ***All*** *questions carry* ***equal*** *marks.*

1. Fill in the blanks/**True**-**False**.

   A) Fill in the blanks.   **7**

      1) NeGP stands for _____

      2) _____ is also known as dactyloscopy.

      3) Rule based is the category of _____

      4) The inventor of Fuzzy Logic is _____

      5) In the embedded system, RTOS stands for _____

      6) Spam filtering is an example of _____

      7) _____ systems is based on face prints.

   B) State **True** or **False**.   **7**

      1) Actuator is not a part of automobile embedded system.

      2) Linguistic variables are used in Fuzzy Logic applications.

      3) Banking using Automated Teller Machine is called as E-banking.

      4) The intentional degradation of GPS signals to deny full access to unauthorized users is called selective checking.

      5) The human retina is a thin tissue composed of neural cells that is located in the posterior portion of the eye.

      6) The artificial Neural Network can explain result.

      7) A digital signature is scanned signature.

                                                    P.T.O.

2. Attempt the following. **14**

   1) Explain artificial neuron in detail.

   2) What is embedded system ? Explain components of embedded system.

3. Attempt the following. **14**

   1) Explain fuzzy logic system components.

   2) Explain Machine learning in detail.

4. Attempt the following. **14**

   1) Explain the components of an Expert System with advantages and limitations.

   2) Explain RFID in detail.

5. Attempt the following. **14**

   1) What is E-governance ? Explain with example.

   2) What is Natural Language Processing ? Explain language models in detail.

6. Attempt the following. **14**

   1) Explain Retina scanning in detail.

   2) What is E-Banking ? Explain with applications of E-Banking.

7. What is GIS ? Explain development of GIS. **14**

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Seat No.

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

Day and Date : Monday, 2-5-2016   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** question 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) All the activities in servlet life cycle are controlled by _____
      a) Servlet Collector   b) Servlet Context
      c) Servlet Container   d) Web.xml

   2) "<%@ %>" this is tag in JSP called as _____
      a) Scriplates   b) Directives   c) Expression   d) Declarative

   3) Syntaxes of JSP can be checked in _____ phase of JSP page life cycle.
      a) Translation   b) Compilation   c) Initialization   d) Servicing

   4) Which of the following method of php page will be invoked when user click on submit Button ?
      ```
      <html>
      <body>
      <form action = "hello.php">
      <input type = "submit" name = "txt1 value" = "Submit">
      </form>
      </body>
      </html>
      ```
      a) $_ POST ["txt1"]   b) $_ GET ["txt1"]
      c) $_ FILE ["txt1"]   d) doGet ()

   5) Array within another array is called as _____ array.
      a) Associative   b) Indexed
      c) Multidimensional   d) Inner

P.T.O.

6) _____ tag in web.xml is used to pass parameters to particular application.
   a) <config-param>   b) <application-param>
   c) <init-param>   d) <context-param>

7) _____ function is used to sort array in PHP by key rather than value.
   a) ksort ( )   b) sort ( )   c) rsort ( )   d) krsort ( )

B) Simplify the **true** and **false** from following : **7**
   1) PHP is loosely typed language.
   2) print() function is used to display output on web page.
   3) === operator in PHP evaluates to true only if the operands have the same value.
   4) In PHP, & symbol need to be used with variable name.
   5) Java code errors in JSP page can be raised in translation phase.
   6) HTTP is state full protocol which means server remembers user after it sends its response.
   7) <jsp:useBean> action is used to instantiate JavaBeans components.

2. A) Explain the difference between GET and POST method. **7**
   B) Explain the concept of E-Check with its different types. **7**

3. A) Explain servlet life cycle in detail. **7**
   B) What is mean by array ? Explain different types of array in PHP with example. **7**

4. A) What is ServletConfig ? Explain with example. **7**
   B) Explain different JSP page elements. **7**

5. A) Write HTML page to accept name from user. Write PHP page to accept name submitted by user through html page and display message "Welcome" along with name of user. **7**
   B) What is mean by session ? Explain its need. Also explain session tracking in PHP. **7**

6. A) Explain session tracking mechanisms in Servlet. **7**
   B) Write servlet application to display "Welcome to servlet" message on browser. **7**

7. Write a note on following :
   A) E-Cash **5**
   B) JSP directives **5**
   C) Types of E-Commerce. **4**

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Seat
No.

M.C.A. (Commerce) (Part – III) (Semester – V) (Old) Examination, 2016
IT Elective : CYBER LAW AND IT SECURITY

Day and Date : Wednesday, 11-5-2016   Total 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** and Q. **6.**
4) Figures to the right indicate **full** marks.

1. A) Select the correct alternative :   **6**

   1) All of the following are examples of intellectual property protections Except

      a) Copyrights   b) Patents   c) Contracts   d) Trademarks

   2) _____ involves activities in which computers and other technological
      devices are used for illicit purposes ?

      a) Cyber crime   b) Techno-crime
      c) Violent crime   d) White collar crime

   3) Which of the following is an example of a public order cybercrime ?

      a) Cyber stalking   b) Cyber luring
      c) Internet Gambling   d) Phishing

   4) Which of the following is independent malicious program that need not any
      host program ?

      a) Trap doors   b) Trojan horse c) Virus   d) Worm

   5) Which of the following malicious program do not replicate automatically ?

      a) Trojan Horse   b) Virus   c) Worm   d) Zombie

   6) Which of the following describes any crime perpetrated through the use of IT ?

      a) Software piracy   b) Malware
      c) Transnational organized crime   d) Computer crime

P.T.O.

B) State **True** or **False** : 8

1) Courts have ruled that cookies violate privacy rights.

2) Patent protection is available not only for products, but also for the processes used to produce products.

3) The payload is the part of the virus through which the virus is spread.

4) Cybercrime is basically criminal activity done by using computers and the internet.

5) The act of stalking an individual through a group or electronic means is called cyber stalking.

6) Deliberate and repeated hostile behavior towards another individual is known as harassment.

7) Symbols used by businesses to identify their products can be protected as trademarks.

8) The payload is the part of the virus through which the virus is spread.

2. A) Explain IT Act 2000 in brief. 7

B) Explain RSA Algorithm. 7

3. A) What do you mean by digital signature certification ? Explain generation, suspension and revocation of digital signature certificate. 7

B) List out different cyber crimes and explain any two in details. 7

4. A) Explain need and powers of certifying authority of information security auditor. 7

B) Explain different threats to information and security measures. 7

5. What is cryptography ? Explain different cryptographic techniques. 14

6. Explain Domain Name Dispute concept in detail. 14

7. Write short note on **any 2** : 14

A) E-Governance

B) Framing and Spamming.

C) Tampering with computer source documents.

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Seat
No.

M.C.A. – III (Semester – V) (Commerce) (Old) Examination, 2016
IT-Elective : PROGRAMMING LANGUAGE PARADIGMS

Day and Date : Wednesday, 11-5-2016   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** & **4**.
3) Solve **any one** question from Q. **5** & **6**.

1. A) Choose the correct alternative :   **10**

1) The abbreviation CISC stands for _____
   a) Current Instruction Set Computers
   b) Complex Instruction Set Computers
   c) Complex Instruction Sequence Computers
   d) Current Instruction Sequence Computers

2) The program address register is also called as _____
   a) Instruction counter   b) Program counter
   c) Location counter   d) None of the above

3) A common alternative to the strict hardware realization of a computer is
   the _____ computer.
   a) Firmware   b) Hardware
   c) Middleware   d) None of the above

4) _____ is commonly thought of as languages that are compiled.
   a) LISP   b) ML   c) Postscript   d) C.

5) _____ is often implemented by use of a software interpreter.
   a) C   b) C++   c) FORTRAN   d) Smalltalk

6) The virtual machine that a programmer uses to create an application is in
   fact formed from a hierarchy of _____ computers.
   a) Virtual   b) Servers
   c) Workstations   d) None of the above

7) _____ is created each time the subprogram is called and is destroyed when the subprogram returns.
   a) Subprogram definition
   b) Activation function
   c) Activation Record
   d) None of the above

8) CIP Stands for _____
   a) Current Information Pointer
   b) Current Instruction Pointer
   c) Current Intermediate Pointer
   d) None of the above

9) CEP Stands for _____
   a) Current Existing Pointer
   b) Current Enumeration Pointer
   c) Current Enum Pointer
   d) Current Environment Pointer

10) The _____ feature of a programming language are those parts concerned with the accessibility of data at different points during program execution.
    a) Implicit sequence control
    b) Explicit Sequence Control
    c) Sequence Control
    d) Data Control

B) State **True** or **False** :   **4**

   a) Many bindings are performed during program execution.

   b) The primary purpose of syntax is to provide a notation for communication between the programmer and the programming language processor.

   c) The semantics of a programming language is the meaning given to the various syntactic Constructs.

   d) The basic sequence control mechanism in expressions is functional composition.

2. A) Define datatype. Explain in detail Composite datatypes in detail.   **7**

   B) Define programming language. Explain in detail attributes of a good programming language.   **7**

3. A) Explain in detail Programming environment.   **7**

   B) Explain in detail programmer and system control storage.   **7**

4. A) Explain in detail referencing environment with suitable example in C language. **7**

   B) Define sequence control. Explain the implicit and explicit sequence control with example. **7**

5. Define language summaries. Explain in detail language summaries of Java. **14**

6. A) Define storage management ? Explain in detail elements requiring storage. **7**

   B) Define translators. Explain in detail types of translators. **7**

7. A) Define Data object. Explain the properties of types and object. **7**

   B) Define lexical analysis. Explain in detail analysis of source program. **7**

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Seat
No.

M.C.A. (Commerce) (Part – III) (Semester – V) (Old) Examination, 2016
IT Elective : ADVANCED UNIX

Day and Date : Wednesday, 11-5-2016   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) 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) Which one data structure is used for Demand Paging ?

   A) Page table entries   B) Disk block descriptors
   C) Page frame data table (pfdata)   D) All

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

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

5) User process 'BREAK' or 'DELETE' keys on terminals keyboard this signal concerned with

   A) Process in User Mode
   B) Terminal interaction
   C) TRACING of execution of program
   D) Process induced exception

P.T.O.

6) Which of the following directories contain all the Ales created by a user, including his login directory ?

A) /tmp   B) /etc   C) /usr   D) /dev

7) Which column contains all details of the permissions of a file when you issue the ls-1 command ?

A) Second   B) Fourth   C) Third   D) First

8) Each "queue pair" of stream is associated with Kernel's _____ subsystem module like driver module or line discipline module or protocol module.

A) I/O Subsystem   B) Input Subsystem

C) Output Subsystem   D) All of above

9) _____ mechanism allows arbitrary processes to exchange data and synchronize execution.

A) Signals   B) Semaphores   C) Sockets   D) IPC

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

A) logic   B) profile

C) shell   D) erxc

11) Which of the following is not a filter ?

A) cat   B) grep

C) wc   D) sort

12) Which is the earliest and most widely used shell that came with the UNIX system ?

A) C shell   B) Korn shell

C) Bourne shell   D) Smith shell

13) The UNIX file system stores a date in physical blocks of

A) 1024 bytes   B) 2048 bytes

C) 512 bytes   D) 256 bytes

14) Each IPC structure in the Kernel is referred to by a non-negative integer

A) Key   B) Identifier

C) Value   D) None of the above

2. a) Explain open() function.   **7**

   b) Explain three type of buffering.   **7**

3. a) Explain Process Termination.   **7**

   b) What is Pipes ? Explain in detail.   **7**

4. a) Explain File Locking.   **7**

   b) Explain concept of Signals in detail.   **7**

5. Explain Memory Layout of C program with block diagram.   **14**

6. Explain record locking with record locking function.   **14**

7. Explain in detail about FIFO concept with example.   **14**

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Seat
No.

M.C.A. (Commerce) (Part – III) (Semester – V) (Old) Examination, 2016
IT Elective : MOBILE WIRELESS COMPUTING

Day and Date : Wednesday, 11-5-2016   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.* **2, 3** *and* **4.** *Solve* **any one**
question from Q. **5** *and* **6**.
3) *Figures to the* **right** *indicate marks to a question or sub*
question.

1. Choose correct alternative :   **14**

    1) A cellular network or mobile network is a *radio* network distributed over
       land areas called cells, each served by at least one fixed-location
       known as _____
       a) *transceiver*   b) *cell site*
       c) *base station*   d) *all of above*

    2) The _____ *network* to connect subscribers to the wider telephony network.
       a) public switched telephone
       b) *packet switched*
       c) *core circuit switched*
       d) *none of above*

    3) _____ is the process of changing the channel (frequency, time slot,
       spreading code, or combination of them) associated with the current connection
       while a call is in progress.
       a) Roaming   b) Switching
       c) Handoff   d) Transmission

    4) The Basic Service Set (BSS) has an identification (ID) called the BSSID,
       which is the _____ of the access point servicing the BSS.
       a) IP address   b) MAC address
       c) Proxy   d) All of above

5) Data items needed for operation are preloaded into the mobile unit is called _____ in disconnected operation.
   a) Data Hoarding State
   b) Disconnected State
   c) Reintegration State
   d) None of above

6) The *uplink frequency range* specified for GSM is _____ MHz (basic 900 MHz band only). The *downlink frequency* band _____ MHz (basic 900 MHz band only).
   a) 890-915 and 933-960
   b) 933-960 and 890-915
   c) 910-915 and 810-815
   d) 810-815 and 910-915

7) _____ service is a text messaging which allow you to send and receive text messages on your GSM Mobile phone.
   a) Videotext access
   b) Teletex transmission
   c) Short Messaging Service
   d) None of above

8) _____ is the client-side scripting language of WML (Wireless Markup Language).
   a) JavaScript   b) VBScript
   c) HTMLScript   d) WMLScript

9) _____ provides reliable, in-order delivery of packets to applications.
   a) UDP   b) FTP
   c) TCP   d) SMTP

10) _____ is perhaps the first operating system specifically designed for wireless sensor networks.
   a) PalmOS   b) TinyOS
   c) LiteOS   d) None of above

11) The Broadcast Disk paradigm is based on the cyclic broadcast of pages (or objects) and a corresponding set of client cache management techniques.
   a) True   b) False

12) Aglets is a Java based *mobile agent* platform and library for building mobile agents based applications.

    a) True   b) False

13) GPRS stands for _____

14) LMSI stands for _____

2. a) Write the applications of Mobile Computing.   **7**

    b) Describe Basic cellular network structure.   **7**

3. a) Write sequence of events for Call from Mobile Phone to PSTN.   **7**

    b) Explain the Destination-Sequenced Distance-Vector Routing.   **7**

4. a) Explain Push algorithm in Data Broadcasting.   **7**

    b) What is Bluetooth ?   **7**

5. Write the Wireless Sensor Network Applications.   **14**

6. Compare indirect TCP, snooping TCP, Mobile TCP and Transaction TCP with various factors with example.   **14**

7. Explain GSM Architecture with block diagram.   **14**

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Seat No.

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

Day and Date : Monday, 25-4-2016   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 2** from Q. **2**, Q. **3** and Q. **4**.
                3) Solve **any 1** Q. from Q. **5** and Q. **6**.

1. A) State whether statement is **True** of **False**.   **4**

     1) Knowledge Base consists of Facts and rules.

     2) Perception includes Expert System only.

     3) Logical reasoning is the process of drawing conclusion from premises using Rule of Inference.

     4) All declarative knowledge are explicit knowledge.

   B) Define the terms :   **10**

     1) Artificial Intelligence.

     2) Reasoning.

     3) Learning.

     4) Proposition.

     5) Monotonic Logic.

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

   A) Explain the Depth first search and Breadth first search algorithm.

   B) What is Knowledge ? Discuss the different types of knowledge.

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

   A) What is Logical Reasoning ? Explain different types of logical reasoning.

   B) Explain the different PROLOG Terminology.

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

   A) Distinguish betwen declarative verses procedural knowledge.

   B) What is natural language processing ?

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

   A) What is proposition and predicate logic explain with example ?

   B) What is Expert System ?

6. Consider the following sentences : **14**

   1) Smith was a Man

   2) Smith was a Pompeian

   3) Smith was born in 40.

   4) All men are mortal

   5) Smith Is father of peter.

   6) Smith does not like Marcus

   7) everyone is loyal to someone.

   Translate these sentences into formulas in predicate logic.

7. What is AI ? Discuss the category and component of AI along with its Application Areas. **14**

   _____

Seat
No.

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

Day and Date : Wednesday, 27-4-2016   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 alternatives.   **14**

   1) Executing the same test case on a modified build called as

     a) Regression Testing   b) Retesting

     c) Adhoc Testing   d) Sanity Testing

   2) Which is Black-Box Testing method ?

     a) equivalence partitioning   b) code coverage

     c) fault injection   d) none of these

   3) This type of test includes, how well the user will be able to understand and interact with the system ?

     a) Usability Testing   b) User Acceptance Testing

     c) Alpha Testing   d) Beta Testing

   4) What is correct Software Process Cycle ?

     a) Plan(P) $\longrightarrow$ Check(C) $\longrightarrow$ Act(A) $\longrightarrow$ Do(D)

     b) Plan(P) $\longrightarrow$ Do(D) $\longrightarrow$ Check(C) $\longrightarrow$ Act(A)

     c) Plan(P) $\longrightarrow$ Do(D) $\longrightarrow$ Act(A) $\longrightarrow$ Check(C)

     d) Check(C) $\longrightarrow$ Plan(P) $\longrightarrow$ Act(A) $\longrightarrow$ Do(D)

   5) Beta testing will be done by

     a) Developer   b) User   c) Tester   d) Owner

6) Integration, It will come under

    a) CMM Level 1   b) CMM Level 3

    c) CMM Level 2   d) None

7) A metric used to measure the characteristic of the methods, techniques and tools employed in developing, implementing and maintaining the software system called as

    a) Process metric   b) Product metric

    c) Test metrics   d) Load metrics

8) How severely the bug is effecting the application is called as

    a) Severity   b) Priority   c) Fix ability   d) Traceability

9) The name of the testing which is done to make sure the existing features are not affected by new changes

    a) Recursive testing   b) Whitebox testing

    c) Unit testing   d) Regression testing

10) Adhoc testing is a part of

    a) Unit Testing   b) Regression Testing

    c) Exploratory Testing   d) Performance Testing

11) _____ means under what test environment (Hardware, software set up) the application will run smoothly.

    a) Test Bed   b) Checkpoint

    c) Code Walk through   d) Checklist

12) TQM represents

    a) Tool Quality Management   b) Test Quality Manager

    c) Total Quality Management   d) Total Quality Manager

13) Unit Testing will be done by

    a) Testers   b) End Users   c) Customer   d) Developers

14) A Plan to overcome the risk called as

    a) Migration plan   b) Master plan

    c) Maintenance plan   d) Mitigation plan

2. A) Explain Capability Maturity Model in detail. **7**

   B) Explain Software Testing Life Cycle in detail. **7**

3. A) Explain Manual testing and Automated testing in detail. **7**

   B) Explain Clean room software development process. **7**

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

   B) Explain different quality metrics in short. **7**

5. A) List different types of software testing. Explain any five in short. **7**

   B) What is a test case ? Explain different test case designing technique with
      example. **7**

6. A) Explain Dynamic testing in brief. **7**

   B) Explain different types of reviews. **7**

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

   A) White Box and Black Box Testing.

   B) V and V Model

   C) Six Sigma.

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Seat
No.

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

Day and Date : Friday, 29-4-2016   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.**
4) **All** *question carry* **equal** *marks.*

1. A) Multiple choice question :   **(7×1)**

   1) A 4-input neuron has weights 1, 2, 3 and 4. The transfer function is linear
      with the constant of proportionality being equal to 2. The inputs are 4, 10, 5
      and 20 respectively. The output will be

      A) 238   B) 76   C) 119   D) 56

   2) A perceptron is

      A) a single layer feed-forward neural network with pre-processing

      B) an auto-associative neural network

      C) a double layer auto-associative neural network

      D) a neural network that contains feedback

   3) Considering a graphical representation of the 'tallness' of people using its
      appropriate member function, which of the following combinations are true ?

       i) TALL is usually the fuzzy subset.

      ii) HEIGHT is usually the fuzzy set.

      iii) PEOPLE are usually the universe of discourse.

          A) i)   B) i) and iii)   C) i) and ii)   D) ii) and iii)

   4) What is the Fuzzy Approximation Theorem (FAT) ?

      A) A fuzzy system can model any continuous system

      B) The conversion of fuzzy logic to probability

      C) A continuous system can model a fuzzy system

      D) Fuzzy patches covering a series a fuzzy rule

P.T.O.

5) What are the following sequence of steps taken in designing a fuzzy logic machine ?

A) Fuzzy Sets –> Defuzzification –> Rule evaluation

B) Rule evaluation –> Fuzzification –> Defuzzification

C) Fuzzification –> Rule evaluation –> Defuzzification

D) Defuzzification –> Rule evaluation –> Fuzzification

6) Fuzzy logic is usually represented as

A) IF-THEN-ELSE rules

B) IF-THEN rules

C) Both A) and B)

D) None

7) Which of the following is a type of biometric ?

A) Fingerprint   B) Voice

C) Both A) and B)   D) None

B) State **true – false** :   **(7×1)**

1) Fuzzy membership be true and false at the same time.

2) Union : $\mu_A(x)U\mu_B(x) = min(\mu_A(x), \mu_B(x))$.

3) The human retina is a thin tissue composed of neural cells that is located in the posterior portion of the eye.

4) Computer system and Embedded System both are same.

5) Neural networks learn by example.

6) In the Embedded System, RTOS stands for Real Time Open System.

7) Time sharing system is always a multiprogramming system.

2. Attempt the following :   **14**

1) Explain the learning Strategy.

2) What are Fuzzy set ? Explain operation of Fuzzy set with example.

3. Attempt the following :   **14**

1) With a neat block diagram, explain the Fuzzy based expert system.

2) What is embedded system ? Explain components of embedded system.

4. Attempt the following : **14**

   1) Explain RFID in detail.

   2) Explain different defuzzification methods.

5. Attempt the following : **14**

   1) Consider two Fuzzy subsets of the set X, X = {a, b, c, d, e} referred to as A and B. A = {1/a, 0.3/b, 0.2/c, 0.8/d, 0/e} and B = {0.6/a, 0.9/b, 0.1/c, 0.3/d, 0.2/e}.

      Then, calculate the following :

      i) Support, Core, Cardinality and Complement for A and B independently.

      ii) the new set C, if $C = A^2$

      iii) the new set D, if D = 0.5 X B

      iv) the new set E, for an alpha cut at $A_{0.5}$.

6. Attempt the following : **14**

   1) Define Membership function. Explain types of Membership Function.

   2) Explain the McCulloch-Pitts model.

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

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Seat No.

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

Day and Date : Monday, 2-5-2016   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. Define the following terms.   **(2×7=14)**

    1) CSS

    2) GET and POST method

    3) Constructors in PHP

    4) PHP Extension and Application Repository (PEAR)

    5) Content Management System.

    6) Canvas

    7) Web Services.

2. A) Explain working of Ajax with example.   **7**

    B) Explain the difference between Cookies and Session.   **7**

3. A) Explain box model in CSS3 in detail.   **7**

    B) Explain different selectors in jquery with example.   **7**

4. A) Explain Perl Compatible Regular Expressions.   **7**

    B) Explain working of Ajax with jquery with example.   **7**

5. A) What are different events in Ajax, explain with example.   **7**

    B) Explain arrays in PHP.   **7**

P.T.O.

6. Develop the PHP application that allows students to enter his roll number and based on that roll no., marks of that subject of those particular students should be displayed. Use database connection for storing the details of student like name, roll number, marks of three subjects. Display the mark sheet with total of subject marks and percentage. Design HTML page with proper tags. **14**

7. Write a note on following :

   A) Ajax **7**

   B) HTML5 Multimedia. **7**

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Seat
No.

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

Day and Date : Friday, 6-5-2016   Total 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** and Q. **6**.

4) Figures to the **right** indicate **full** marks.

1. Choose the correct alternative :   **14**

   1) Which of these diagrams shows interactions between objects ?
      a) Activity diagram   b) Class diagram
      c) Sequence diagram   d) Component diagram

   2) SSAD stands for
      a) System Structured Analysis and Design
      b) Structured System Analysis and Design
      c) Simple System Analysis and Design
      d) None of these

   3) _____ introduces the concept of Object Orient Software Engineering (OOSE).
      a) Jim Rumbaugh   b) Grady Booch
      c) Ivar Jacobson   d) Code Yordon

   4) The Rational Unified Process consist of these steps
      a) Inception   b) Elaboration
      c) Construction   d) All of these

5) CRC stands for
   a) Classes, Responsibilities, Collaboration
   b) Collaboration, Responsibilities, Classes
   c) Common, Responsibilities, Classes
   d) Common, Responsibilities, Collaboration

6) _____ provide a bridge between RDBMS and OODBMS.
   a) ORDBMS   b) RODBMS   c) ADBMS   d) None of these

7) A single object or software component, called
   a) Coupling   b) AXIOMs   c) Cohesion   d) None of these

2. A) Explain Object oriented features with examples.   **7**

   B) What is Association and Link in class relationship ?   **7**

3. Explain in details object oriented software development life cycle.   **14**

4. A) Explain the notations used in use case diagram and draw the use case diagram
      for Library management system.   **7**

   B) Compare SSAD and OOAD.   **7**

5. A) What is requirements engineering ? Explain its steps.   **7**

   B) What is CRC ? Explain in details.   **7**

6. List and explain all the notations used in activity diagram and draw activity diagram
   for ATM system.   **14**

7. Explain in detail OOA by Grady Booch methodology.   **14**

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Seat No.

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

Day and Date : Monday, 9-5-2016   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) Figure to the **right** *indicates* **marks** *to a question or sub-question.*

1. A) Multiple Choice question :   **(2×7)**

   1) The negation of $P \rightarrow Q$ is _____
      a) P and ~ Q   b) $P \rightarrow \sim Q$ c) $\sim Q \rightarrow \sim R$ d) ~P V ~Q

   2) Let $^nP_5 : ^nP_3 = 2 : 1$ then n
      a) 1   b) 17   c) 5   d) 20

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

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

   5) Out of 13 players, 11 players are to be selected for a cricket team. In how many ways can this be done ?
      a) 72   b) 65   c) 78   d) 100

   6) Given $f(x) = 2x^2 - 3x + 6$, find $f(2.5)$.
      a) 11   b) 23.5   c) 76   d) 53

   7) The Proposition (p V ~p) is _____
      a) 1   b) F   c) T   d) P

   B) State **True/False** :   **(1×6)**

   1) In every cyclic group, every element is a generator.

   2) If A is a 2 × 3 matrix and B is a 3 × 2 matrix, then the product AB is defined.

P.T.O.

3) A vertex with zero outdegree is called Sink vertex.

4) A directed graph with no cycles has at least one source and one sink.

5) {(2, 3), (3, 4), (5, 1), (6, 2), (7, 3)}, this relation is function.

6) If A and B are 2 × 2 matrices such that AB = 0, then BA = 0.

2. Attempt the following : **(10×2)**

a) Show that $P \rightarrow (Q \wedge R)$ and $(P \rightarrow Q) \wedge (P \rightarrow R)$ are equivalent.

b) Using truth table finds PCNF of $(p \vee (\sim p \rightarrow (q \vee (\sim q \rightarrow r))))$.

3. Attempt the following : **(10×2)**

a) Let A = {1, 2, 3} and B = {a, b, c, d}. Let R and S be the relation from A to B with Boolean Matrices :

$$M_R = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 0 & 0 & 1 \end{bmatrix} \quad M_S = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}$$

1) Find the Boolean matrices for R^{-1} and S^{-1}.

2) Find the Boolean matrices $(R \cap S) \circ R^{-1}$ and $R \circ R^{-1} \cap S \circ R^{-1}$.

b) Define :

1) Equivalence relation

2) Group

3) Properties of relation.
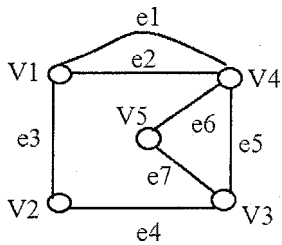
4. Attempt the following : **(10×2)**

a) Define Group and show that {1, 5, 7, 11} is a group under multiplication modulo 12.

b) There are 6 bowlers and 9 batsmen in a cricket club. In how many ways can a team of 11 be selected so that the team contains.

a) At least 4 bowlers

b) Two particulars always included

c) At most 5 batsman's.

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

   a) Let A = (1, 2, 4, 6, 8) and for a, b ∈ 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) Determine adjacency and incidence matrices of the following graph :

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

   a) i) Let G be a graph with 'P' vertices out of which 'r' vertices have degree 'k' and others have degree k + 1, prove that

     r = (k + 1) P – 2e

     ii) Define and draw Rooted Tree and Binary Tree.

   b) Write note on quantifiers and prove that :

     $\sim((x)\ A\ (x)) \equiv (\exists x) \sim A(x)$.

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

   a) Prove that number of permutations of 'n' different things taken 'r' at a time is given by :

     nPr = n!/(n – r)!

   b) If f : R → R and g : R → R defined by $f(x) = x^3 - 4x$ $g(x) = 1/(x^2 + 1)$ $h(x) = x^4$ find the following composition function :

     1) (fogoh) (x)   2) (goh) (x)

     3) (gog) (x)   4) (hogof) (x).

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Seat No.

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

Day and Date : Tuesday, 10-5-2016   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. Multiple choice questions :   **(10×2)**

   1) Operating system is the example of _____ software.
      a) application   b) system
      c) firm   d) all of above

   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) _____ scheduling is example of the preemptive algorithm.
      a) Round robin   b) Shortest job first
      c) Shortest remaining   d) Longest time first

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

6) Belady problem occur in
   a) FIFO
   b) SJF
   c) RR
   d) None of the above

7) Increase the priority of process is called as
   a) Aging
   b) Deadlock
   c) Synchronization
   d) Priority

8) _____ means infinite waiting state of process.
   a) Translation look aside buffer
   b) Deadlock
   c) Segmented
   d) All the above

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

10) Size of page frame is _____ in paging method.
   a) Variable
   b) Unsafe
   c) Fixed
   d) Varies

2. Attempt the following :   **20**
   1) What is paging ? Explain with example.
   2) What is segmentation ? Explain with example.

3. Attempt the following :   **20**
   1) Discuss the different functions of operating system.
   2) What is semaphore ? Explain with example.

4. What is Disc Scheduling ? Explain different disc scheduling algorithm in detail.   **20**

5. What is deadlock ? Explain conditions for deadlock with deadlock avoidance.   **20**

6. Explain different page replacement algorithms in detail.   **20**

7. Write short note on :   **20**
   1) File types
   2) Process control block.   **10**

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Seat No.

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

Day and Date : Thursday, 12-5-2016   Max. Marks : 70

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

Instructions : 1) Question **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. Choose the correct alternative from the given alternatives :   **14**

   1) _____ is the ability of the package to support the best business practices followed in the company's line of business world be a crucial factor in determining the smoothness of implementation.

     A) Technology   B) Functionality   C) Implementability   D) Correctness

   2) Most crucial factor in the successful implementation of an ERP system is _____

     A) analysis   B) gap analysis   C) design   D) Post maintenance

   3) A _____ is a process that takes place prior to the actual performance of a course of action that has been chosen.

     A) Support   B) Decision   C) Selection   D) Solution

   4) The _____ applications provide the reports with specific key decisions in the production function.

     A) Operations Updates   B) Action Update
     C) Decision Analysis   D) Information Update

   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

P.T.O.

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 these

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) Explain the concept of ERP. Also explain need and advantages of ERP.   **7**

    B) Define and explain management Information System with suitable example.   **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. Explain the process of OLAP with suitable example.   **14**

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

    A) Supply Chain Management.

    B) Data Mining.

_____