उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment)   2015-2016
Master of Computer Applications (MCA)

Subject   : MCA   Subject Code :   MCA/PGDCA
Course Title : Discrete Mathematics   Course Code   :   MCA-1.1/
                                                            PGDCA1.1

अधिकतम अंक   : 30
Maximum Marks: 30

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A
खण्ड - अ

अधिकतम अंक   : 18
Maximum Marks: 18

1.a)   Construct truth tables for
    (i) $[(P \Rightarrow Q) \wedge (Q \Rightarrow R)] \Rightarrow (P \Rightarrow R)$
    (ii) $\sim (P \Rightarrow Q) \vee [(-P) \wedge Q] \vee Q$.

  b)   Prove that $\sqrt{2}$ is irrational by giving a proof of contradiction.

2.a)   Find the logic networks corresponding to Boolean expression.
    (i) $x'y'z + y'yz + xyz' + xy'$
    (ii) $(A+B)(A'+C) + B(B'+C)$

  b)   Write short notes :
    (i)   Regular graph
    (ii)   Bipartite graph
    (iii) Hamiltonian graph.

3. a)   Show that the relation (x,y) R (a,b) $\Leftrightarrow$ $x^2 + y^2 = a^2 + b^2$ is an equivalence relation on the plane. Also describe the equivalence classes.

  b)   Describe Dijkastra's Algorithm for shortest path in weighted graphs.

Section – B
खण्ड - ब

अधिकतम अंक   : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

1. Write negation of the statement : For all real numbers x, if x > 3 then x^2 > 9.

2. What is Lattice? Explain the properties of Lattice.

3. What is planar graph? Also explain Euler's formula.

4. Show that n^2 > 2n+1 for n ≥ 3 by mathematical induction.

5. Define Cartesian product of two sets and prove that A x (B∩C) = (A×B) ∩ (A×C).

6. Let R and S be two relations on a set A. Then if R and S are reflexive then prove that R∩S is reflexive.

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अधिन्यास (Assignment) | 2015-2016

Master of Computer Applications (MCA)

Subject   : MCA   Subject Code : MCA
Course Title : Problem solving and   Course Code : MCA-1.2 /
                    Programming through C   PGDCA1.2

| DeefOekeâlece Debkeâ |
| :30 | Maximum Marks: 30 |

Note. Answer should be given in 800 to 1000 words. Answer all
questions. All questions are compulsory.

Section – A

खण्ड - अ

| अधिकतम अंक   : 18 |
| Maximum Marks: 18 |

1.   Write an algorithm and program in C to swap the values of two
     variables using pointers concepts.

2.   Write an algorithm and programme to insert and delete a node
     from a doubly-linked list.

3.   Write a program in C to sort list of n integers, using any of the
     sorting algorithms.

Section – B
खण्ड - ब

| अधिकतम अंक   : 12 |
| Maximum Marks: 12 |

Note: Short Answer Questions. Answer should be given in 200 to 300
words. All questions are compulsory.

4.   What are the rules for naming variables in C?

5.   Write a program to calculate the first smallest divisor of a number
     using break statement.

6.   What is call by value? Give example.
7.   Explain Function Prototypes with an example for each.

8.   Explain recursion program with a suitable example.

9.   What is a BST?

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अधिन्यास (Assignment)　　　　2015-2016

Master of Computer Applications (MCA)

Subject　　　: MCA　　　　　　　Subject Code : MCA
Course Title : Computer Organisation　Course Code　: MCA-1.3
　　　　　　　And Assembly Language　　　　　　　PGDCA1.3

DeefOekeâlece Debkeâ
Maximum Marks: 30

: 30

Note. Answer should be given in 800 to 1000 words. Answer all
questions. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक　: 18
Maximum Marks: 18

1. What do you mean by Flip-Flop? Discuss the functions and circuit
   diagram of different type of flip flop?

2. What do you understand by hardware enterrupt and software
   enterrupt?

3. Draw the connections between memory module and processor and
   explain how data transfer takes place between them.

Section – B

खण्ड - ब

अधिकतम अंक　: 12
Maximum Marks: 12

Note:　Short Answer Questions. Answer should be given in 200 to 300
words. All questions are compulsory.

4. What is PLA?

5. Draw the circuit diagram of Half address and full address..

6. List the type of addressing mode.

7. What do you mean by segment?

8. What do you mean by type of instruction set?

9. What are the functions of Assembles?

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अधिन्यास (Assignment)   2015-2016

Master of Computer Applications (MCA)

Subject   : MCA   Subject Code : MCA
Course Title: System Analysis and   Course Code : MCA-1.4
                   Design.   PGDCA1.4

DeefOekeâlece Debkeâ

: 30

Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक   : 18
Maximum Marks: 18

1.   What is an information System? Explain classification of systems in brief. Also explain the need of SDLC for proper development of a system.

2.   What is SRS? Briefly explain any four characteristics of SRS. Develop an SRS for Library Management System. Make appropriate assumptions.

3.   What is CASE tool? Categories various types of CASE tools.

Section – B
खण्ड - ब

अधिकतम अंक   : 12
Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4.   What is a decision tree? Draw a decision tree for a system of your choice.

5.   What is the need of system maintenance?

6.   Give levels and components of MIS. Who are the key persons at all the levels of MIS?

7.   Differentiate between coupling and cohesion.

8.   What do you mean by internal information, external information and turnaround document?

9.   What activities are performed during design phase? Explain them.

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Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक   : 18
Maximum Marks: 18

1. Give the ISO-OSI ref. model for Data Communication and explain the function of each layer in brief. How it is different than TCP/IP model?

2. What is the difference between a frame and a packet? Why framing is required? What is the significane of padding used in some of frame format? Explain.

3. Write the short note on following:
   i) Multiplening   ii) TCP Congestion Control Techniques.

Section – B

खण्ड - ब

अधिकतम अंक   : 12
Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.
4. Give the classification of IPV-4 addressing scheme.

5. How BGP is different from other distance vector routing protocols?

6. What do you mean by digital signature?

7. What are the various type of Network?

8. What do you mean by Baand rate? How is it different from Bit rate?

9. What is Attenuation?

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अधिन्यास (Assignment) | 2015-2016

Master of Computer Applications (MCA)

Subject : MCA   Subject Code : MCA
Course Title : Database Management   Course Code : MCA-2.1
System   PGDCA 2.1

DeefOekeâlece Debkeâ
Maximum Marks: 30

: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A
खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. What is entity and attribute? Give some examples of entities and attributes in a manufacturing environment. Why are relationships between entities important?

2. What do you mean by data redundancy? What is the difference between controlled and uncontrolled redundancy? What is data independence?

3. Identify the entities and relationships for this organization and construct an ER diagram. From the E-R diagram, write the scripts for creaging a schema.

Section – B
खण्ड - ब

अधिकतम अंक : 12
Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. Discuss on the various ways in which we can arrive at a good database design.

5. Explain the various ways in which concurrency control can be implemented in a database.

6. What is data? What do you mean by information? What are the differences between data and information?

7. Who is a DBA? What are the responsibilities of a DBA?

8. What is a transaction? Which are the properties of a transaction and explain each.

9. What is a database trigger? Which are the different kinds of triggers?

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अधिन्यास (Assignment)　　2015-2016

Master of Computer Applications (MCA)

Subject　　　: MCA　　　　　　　Subject Code :　MCA
Course Title : Object Oriented Techno-　Course Code　:　MCA-2.2
　　　　　　logy and Java programming　　　　PGDCA 2.2

DeefOekeâlece Debkeâ

: 30

Maximum Marks:　30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A
खण्ड - अ

अधिकतम अंक　　:　18
Maximum Marks:　18

1. What is inheritance? Explain two benefits of inheritance, with an example of each. 　　6

2. What is a constructor? Write a Java program to explain how super class constructors are called in their subclasses. 　　6

3. What is multithreading? Explain this with an example of how interthread communication takes place in Java. 　　6

Section – B
खण्ड - ब

अधिकतम अंक　　:　12
Maximum Marks:　12

Note:　Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. What is a global variable? 　　2

5. What is encapsulation? 　　2

6. What is multithreaded programming ? Explain how threads are created in Java. 　　2

7. What is JDBC? 　　2

8. What is an exception? 　　2

9. What is an instance variable? Explain how an instance variable of a class can have different value for each object of that class. 　　2

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अधिन्यास (Assignment) | 2015-2016 |

Master of Computer Applications (MCA)

Subject   : MCA   Subject Code :   MCA
Course Title: Software Engineering   Course Code :   MCA-2.3
                                                       PGDCA 2.3

| DeefOekeâlece Debkeâ |
| Maximum Marks: 30 |

: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A
खण्ड - अ

| अधिकतम अंक   : 18 |
| Maximum Marks: 18 |

1. What are project metrics? Explain different types of project metrics with an example for each.

2. What is prototyping? Explain the problems and advantages of prototyping in detail.

3. Explain various testing techniques.

Section – B
खण्ड - ब

| अधिकतम अंक   : 12 |
| Maximum Marks: 12 |

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. What is data dictionary?

5. What are the steps involved in software project estimation?

6. How is software configuration management done in software?

7. What do you mean by Coupling?

8. Discuss the Waterfall Model.

9. What do you mean by Software crisis?

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अधिन्यास (Assignment) | 2015-2016

Master of Computer Applications (MCA)

Subject : MCA
Course Title : Operating System
 Concepts & Networking

Subject Code : MCA
Course Code : MCA-2.4
 PGDCA 2.4

DeefOekeâlece Debkeâ

Maximum Marks: 30

: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A
खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. What is an operating system? Discuss the functions and classifications of advanced operating system.

2. What do you mean by Transmission media? Discuss the advantage and disadvantage of different type of Transmission media.

3. Write short note of following:
 (i) Routers (ii) Gateways

Section – B
खण्ड - ब

अधिकतम अंक : 12
Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. What are different states of a Linux operating system?

5. Find out how to set the system date. Why do you think only the super user is allowed to do this?

6. What happens if a user logs out after you have started writing to him?

7. What is Active Directory?

8. How will you secure guest account?

9. What do you understand by Windows 2000 DNS?