MASTER OF COMPUTER APPLICATIONS

MCA - I SEMESTER

Internal Assignment Questions

2022

PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION

(Recognised by the Distance Education Bureau, UGC, New Delhi.)
OSMANIA UNIVERSITY, HYDERABAD – 500 007 Telangana State INDIA

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Dear Students,

   All the students of **Master of Computer Application(MCA) I - Semester** has to write 2 Assignments for each paper and submit **Assignment** for each paper compulsorily. Each assignment carries **30 marks.** University Examinations will be held for **70 marks**. The concerned faculty evaluates these assignment scripts. The marks awarded to you will be forwarded to the Controller of Examination, OU for inclusion in the University Examination marks. If you fail to submit Internal Assignments before the stipulated date, the internal marks will not be added to University examination marks under any circumstances. **The assignment marks will not be accepted after the stipulated date.**

You are required to **pay Rs.500/- fee** towards Internal Assignment marks through online http://oucde.net and submit the payment receipt along with assignment at the concerned counter **on or before 12ᵗʰ September, 2022** and obtain proper submission receipt.

ASSIGNMENT WITHOUT THE PAID RECEIPT WILL NOT BE ACCEPTED

Assignments on Printed / Photocopy / Typed papers will not be accepted and will not be valued at any cost.   Only hand written Assignments on A/4 size paper (one side only) will be accepted and valued.

Methodology for writing the Assignments:

1. First read the subject matter in the course material that is supplied to you.
2. If possible read the subject matter in the books suggested for further reading.
3. You are welcome to use the PGRRCDE Library on all working days including Sunday for collecting information on the topic of your assignments.
   (10.30 am to 5.00 pm).
4. Give a final reading to the answer you have written and see whether you can delete unimportant or repetitive words.
5. The cover page of the each theory assignments must have information as given in FORMAT below.

FORMAT

  a. NAME OF THE COURSE :

  b. NAME OF THE STUDENT :

  c. ENROLLMENT NUMBER :

  d. NAME OF THE PAPER :

  e. DATE OF SUBMISSION : _____

6. Write the above said details clearly on every assignment paper, otherwise your paper will not be valued.

7. Tag all the assignments paper-wise and submit.

8. Submit the assignments on or before **12ᵗʰ September, 2022** at the concerned counter at PGRRCDE, OU on any working day and obtain receipt.

MCA - I SEMESTER
ASSIGNMENT – I
Mathematical Foundations of Computer Science

Paper : <u>PC-101</u>

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**
1. Define Tautology and Contradiction.
2. What is Homogeneous Recurrence Relation ? Give an example.
3. Explain the following terms (a) Semi-groups   (b) Monoids
4. State and proof Principle of Inclusion and Exclusion.
5. Define Planar graph. Give an example.

<u>SECTION – B</u>

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**
1. What is Binary Relation ? What are the Properties of Binary Relations ? Give an example for each.
2. Solve the Recurrence Relation
   $S(K) - 7 S(K-1) + 12 S(K - 2) = 0$ Where $S(0) = 4$, $S(1) = 4$

MCA - I SEMESTER
ASSIGNMENT – II
Mathematical Foundations of Computer Science

Paper :   <u>PC-101</u>   Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**
1. Explain Division Algorithm.
2. Explain Pigeonhole Principle and Give an example.
3. Explain the following terms   (a) Residue Arithmetic   (b) Homomorphism
4. What is Hamiltonion path and Cycle in a graph ? Give an example
5. Define the following terms
   (a) Inverse Function   (b) Bijective function

<u>SECTION – B</u>

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**
1. What is an Equivalence Relation ?
   Let X = {1,2,3....., 7} and R = {(x, Y) /x – y is divisible by 3 }
   Show that R is an equivalence Relation. Draw the graph of R.
2. Define Spanning tree.
   Find a railway network of minimum cost for the cities shown below

3
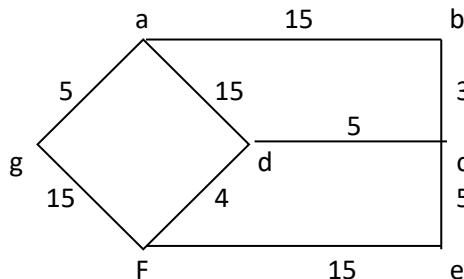
MCA - I SEMESTER
ASSIGNMENT – I
Data Structures Using C

Paper : PC-102

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**
1. Discuss about (i) Data types (ii) Looping Statements

2. Write notes on call-by-value and call-by-reference with suitable example for each.

3. Briefly discuss about stacks and their operations

4. Explain the representation of Binary trees.

5. Write notes on Binary Search Tree.

SECTION – B

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**
1. (a) Write notes on Recursion with example.
   (b) Briefly discuss about structures and unions

2. (a) Write notes on storage classes.
   (b) Discuss about Hashing and collision Reduction techniques

ASSIGNMENT – II
Data Structures Using C

Paper : PC-102

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**
1. Write a program to multiply two matrices.

2. Write notes on Pointers and Pointer Arithmetic

3. Briefly discuss about single linked lists and double linked lists

4. Briefly discuss about Graphs Traversals & Graph Representations

5. Write program to implement Quick Sort Technique.

SECTION – B

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**
1. (a) Discuss about strings & String operations.
   (b) Discuss about Input and output operation's in C.

2. (a) What are the pre-processor directives ? Discuss each with example
   (b) Discuss about Binary Tree Traversals.

MCA - I SEMESTER
ASSIGNMENT – I
Object Oriented Programming Using Java

Paper : PC-103

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks) **5 x 4 = 20**

1. What gives Java its 'write once and run anywhere' nature?

2. How many types of constructors are used in Java?

3. What are the differences between this and super keyword?

4. Give the hierarchy of InputStream and OutputStream classes.

5. Difference between method Overloading and Overriding.

SECTION – B

Answer the following questions (each question carries <u>five</u> marks) **2 x 5 = 10**

1. How Exception Handling is done? Give example

2. What are the differences between String and StringBuffer?

MCA - I SEMESTER
ASSIGNMENT – II
Object Oriented Programming Using Java

Paper : PC-103

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks) **5 x 4 = 20**

1. Describe about serialization?

2. What is an applet?

3. What is multithreading? How it is done?

4. What is the difference between final, finally and finalize?

5. How to create packages in Java?

SECTION – B

Answer the following questions (each question carries <u>five</u> marks) **2 x 5 = 10**

1. What are the differences between abstract class and interface?

2. What is the difference between compile-time polymorphism and runtime polymorphism?

MCA - I SEMESTER
ASSIGNMENT – I
Computer Architecture

Paper : PC-104

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**

1. Explain about decimal point / Floating point and 2's Complement by taking an example to each.

2. With a flow chart explain about Instructions interrupt life cycles.

3. Define an addressing mode. Explain about various addressing modes.

4. What are memory mapping procedures ? Explain them.

5. Discuss about DMA and priority interrupt.

SECTION – B

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**

1. What is microprogrammed control ? Explain about microprogrammed sequencer.

2. Write short notes on
    (i) State Organizations
    (ii) Arithmetic and shift microoperations

MCA - I SEMESTER
ASSIGNMENT – II
Computer Architecture

Paper : PC-104

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**

1. Explain about Fixed and Floating point representation and Bus Structures.

2. Discuss about Instructions cycle and Memory reference and register reference instructions.

3. Explain about Mocro programmed control in detail.

4. Describe about memory mapping procedures.

5. Describe about performance evaluation factors of CPU and DMA.

SECTION – B

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**

1.Write brief notes on
    (i) state organizability. And
    (ii) Instructions formats.

2. Explain the following
    (i) Addressing Modes
    (ii) Boath's Multiplication Algorithms.

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MCA - I SEMESTER
ASSIGNMENT – I
PROBABILITY & STATISTICS

Paper : PC-105

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**

1. Define vector spaces and sub spaces-Null spaces
2. Explain classical, statistical and axiomatic probability.
3. Define binomial distribution and its applications
4. Explain probability and non-probability sampling methods
5. Define type-I and Type-II errors.

<u>SECTION – B</u>

Answer the following questions (each question carries <u>five</u> marks)   2 x 5 = 10

1. State and prove Baye's Theorem
2. State the important properties of the normal distribution

MCA - I SEMESTER
ASSIGNMENT – II
PROBABILITY & STATISTICS

Paper : PC-105

Total Marks: 30

SECTION – A
Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**

1.   Define Poisson distribution and its applications

2.   Explain about chi-square test of independence.

3.   Define different types of correlation.

4.   Write about probability sampling methods.

5.   Define analysis of variance(ANOVA)

<u>SECTION – B</u>

Answer the following questions (each question carries <u>five</u> marks)   2 x 5 = 10

1.   Explain concept of simple Liner Regression

2.   Explain Concept of one and two sample t-test

MCA - I SEMESTER
ASSIGNMENT – I
Managerial Economics & Accountancy

Paper : PC-106

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**

1. Write a note on opportunity cost and Discounting Principle.

2. Tell about Cross Elasticity of Demand.

3. Explain the Break even chart.

4. What do you mean by capital Budgeting ? What are the types of capital Budgeting methods ?

5. State about the contra-entry situations.

<u>SECTION – B</u>

Answer the following questions (each question carries <u>five</u> marks)   2 x 5 = 10

1. Describe the law of variable proportions.

2. Explain the concepts and conventions of accountancy.

MCA - I SEMESTER
ASSIGNMENT – II
Managerial Economics & Accountancy

Paper : PC-106

Total Marks: 30

SECTION – A

Answer the following short questions (each question <u>two</u> marks)   **5 x 4 = 20**

1. Differentiate between the Risk and Uncertainity.

2. How substitutes and complementary of goods influences demand of a consumer ? Explain.

3. Write about the Cobb-Doughlas Production function.

4. What are the sources & types of working capital ?

5. What do you mean by Journal proper ?

<u>SECTION – B</u>

Answer the following questions (each question carries <u>five</u> marks)   **2 x 5 = 10**

1. How price and output determined both in perfect competition and monopoly markets ? Explain with diagrams.

2. What are the factors that influence a consumer to demand a product / service ? Explain.