

# **MASTER OF COMPUTER APPLICATIONS**

**MCA - II SEMESTER**

**Internal Assignment Questions(Theory)**



**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) II - Semester** has to write 2 Assignments for each paper and submit **Assignment** for each paper compulsorily. Each assignment carries **15 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 Last date of Exam Fee Date** and obtain proper submission receipt.

**ASSIGNMENT WITHOUT THE PAID RECEIPT WILL NOT BE ACCEPTED**

**Assignments on Printed / Photocopy / Typed papers / written with black pen 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 **Last date of Exam Fee Date** at the concerned counter at PGRRCDE, OU on any working day and obtain receipt.

**DIRECTOR**



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**INTERNAL ASSIGNMENT QUESTION PAPER – 2023**  
**MCA - II SEMESTER**  
**ASSIGNMENT – I**

Paper : PCC-201

**OPERATING SYSTEMS**

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. a) What are the deadlock necessary conditions and explain about bankers algorithm  
b) What is access matrix? Brief about file system interface and implementation [5]
2. a) What is Demand paging ?  
b) Explain page replacement algorithms. [5]
3. a) Mention access methods and protection of file system interface  
b) Elaborate Firewalling and Computer security Classification [5]

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**MCA - II SEMESTER**  
**ASSIGNMENT – II**

PCC-201

**OPERATING SYSTEMS**

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. a) Elaborate Unix file system implementation and directory implementation  
b) List the scheduling criteria? Consider the following set of process that arrives at time 0, with the length of the CPU burst given in milliseconds.

<u>Process</u>	<u>Burst time</u>
P1	20
P2	5
P3	3

If the process in the order p1, p2, p3 and are served in FCFS order and SJF draw the Gantt chart, calculate TAT of each process (turn around time) ,waiting time of each process and response time of each process. [5]

2. Explain following  
i) Semaphores ii) Mutex Locks iii) Monitors [5]
3. a) Give case study for design principles and kernel modules  
b) If FIFO page replacement is used with four page frames and eight pages ,how many page fault will occur with reference string 0 1 7 2 3 2 7 1 0 3 if the four frames are initially empty? Now repeat this problem for LRU? [5]

Name of the Faculty :**A.VenuGopal**  
PGRRCDE, OU



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**ASSIGNMENT – I**

PCC-202

DBMS

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. What is Normalization? Explain different Normal forms with an example. [5]
  2. Explain about B+ Tree with an example. [5]
  3. Explain about Time Stamp based protocols. [5]
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**ASSIGNMENT – II**

PCC-202

DBMS

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. Explain different relational algebra operations [5]
2. Explain Linear and Extendible hashing with examples. [5]
3. Explain about Deadlocks. [5]

Name of the Faculty : **G BHASKAR**  
College : NRUPATUNGA DEGREE  
& PG COLLEGE



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**ASSIGNMENT – I**

PCC-203

DESIGN ANALYSIS & ALGORITHMS

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. Illustrate the working of quick sort algorithm with an example [5]
2. Explain knapsack problem in greedy method with an example [5]
3. Discuss Dijkstra's algorithm with an example [5]



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PCC-203

DESIGN ANALYSIS & ALGORITHMS

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. Illustrate all pairs shortest path algorithm [5]
2. Elaborate about 8 queens problem [5]
3. Describe P, NP, NP-Complete and NP-Hard [5]

Name of the Faculty : **Dr Humera S**  
College : Nizam College



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**ASSIGNMENT – I**

PCC-204

ARTIFICIAL INTELLIGENCE

**Total Marks: 15**

**3 x 5 = 15**

**Answer the following questions (each question Five marks)**

1. a) Briefly discuss about Python's Control Flow.  
b) Write notes on subareas of AI. [5]
2. a) Differentiate between Expert Systems and Traditional Systems  
b) Briefly discuss about Predicate Logic [5]
3. a) Write notes on Heuristic Search Techniques  
b) Explain about Knowledge Representation using Semantic Network [5]



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**ASSIGNMENT – II**

PCC-204

ARTIFICIAL INTELLIGENCE

**3 x 5 = 15**

**Answer the following questions (each question Five marks)**

1. Write notes on the following with respect to Python:
  - i) Functions
  - ii) Lists
  - iii) Tuples
  - iv) Packages [5]
2. a) Briefly discuss about Alpha Beta Pruning  
b) Discuss about Semantic Table, Propositional Logic and Refutation in Propositional Logic [5]
3. a) Briefly introduce about Probability Theory and Bayesian Network  
b) Write notes on Natural Language Processing [5]

Name of the Faculty : **M.Narendar Reddy**  
College : Dept. of CSE, UCE, OU.



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**ASSIGNMENT – I**

PCC-205

**MACHINE LEARNING**

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. Explain about linear and logistic regression [5]
  2. Write about SVM and Bayesian decision theory [5]
  3. Describe the equation of partial least regression? [5]
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**ASSIGNMENT – II**

PCC-205

**MACHINE LEARNING**

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. Elaborate naive bayes algorithm [5]
2. explain working of k-mediod [5]
3. discuss reinforcement learning and explain its applications [5]

Name of the Faculty : **BP Dhanalaxmi**

College : Aurora PG College



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MCA – I SEMESTER

PCC-206

**OPERATIONS RESEARCH**

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. Write about LPP methods and special cases with examples. [5]
  2. Explain Transportation problem, using any method solve an example. [5]
  3. Explain Assignment problem and Integer programming problem using cutting-plane algorithm. [5]
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**ASSIGNMENT – II**

PCC-206

**OPERATIONS RESEARCH**

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Total Marks: 15

Answer the following questions (each question Five marks)

**3 x 5 = 15**

1. What are the applications of dynamic programming problem? [5]
2. Explain game theory with pure and mixed strategies. [5]
3. Solve an example using  $2 \times n$  or  $m \times 2$  game with graphical method. [5]

Name of the Faculty : **K. Sushma**  
College : Nizam College