

ALAGAPPA UNIVERSITY

[Accredited with 'A+' Grade by NAAC (CGPA:3.64) in the Third Cycle and Graded as
Category-I University by MHRD-UGC]
(A State University Established by the Government of Tamil Nadu)

Karaikudi. 630003.

Directorate of Distance Education

CONTINUOUS INTERNAL ASSESMENT (CIA)

ASSIGNMENT QUESTIONS



PROGRAMME CODE: 315

Master of Computer Applications (M.C.A)

(2021 - 2022)



ALAGAPPA UNIVERSITY, KARAIKUDI
DIRECTORATE OF DISTANCE EDUCATION
CONTINUOUS INTERNAL ASSESSMENT (CIA)
ASSIGNMENT QUESTIONS -(2020-2021 Academic Year Onwards)
Learning Centre : Karaikudi (100)



| Programme code | Programme Name | Semester |
|----------------|--|----------|
| 315 | MASTER OF COMPUTER APPLICATIONS (M.C.A) | I |

Instructions

- **Assignments should be written in the candidate's own handwriting in the A4 sheets on only one side of the paper.**
- **Combine all subject assignments into single spiral binding for submission.**
- **Maximum. Marks. 25 for each Course (Theory and Practical).**
- **Model Practical Test will be conducted during PCP schedule for Practical courses of every semester.**

The list of assignment topics for each course is furnished below:

| Course Code: 31511 | Digital Computer Organization |
|---|--------------------------------------|
| <ol style="list-style-type: none"> 1. Discuss the fundamentals concepts and laws of Boolean Algebra. 2. Draw the logic diagram of Half adder. 3. Discuss about Sum of Products (SOP) and Products of Sum (POS). 4. Explain about different types of Instructions (Memory reference, I/O interrupts) | |

| Course Code: 31512 | Object Oriented Programming and C++ |
|---|--|
| <ol style="list-style-type: none"> 1. Discuss the basic concepts of Object-oriented programming. 2. Explain about function overloading or operator overloading. 3. Write note on : Class templates. 4. Define: Constructor. | |

| Course Code: 31513 | Data Structures and Algorithms |
|--|---------------------------------------|
| <ol style="list-style-type: none"> 1. Define: Data Structure. 2. Briefly explain about searching of elements using Linear Search Technique 3. Explain about soring of numbers using Bubble sort algorithm. 4. Discuss in detail about implementation of queue or stack with example. | |

| Course Code: 31514 | Discrete Mathematics |
|---|-----------------------------|
| <ol style="list-style-type: none"> 1. Verify whether $(P \wedge Q) \rightarrow (P \vee Q)$ is a tautology 2. Prove that for any three sets A,B,C; $A \cap (B - C) = (A \cap B) - (A \cap C)$ 3. Define Graph, Degree of vertex, subgraphs with examples | |

| Course Code: 31515 | Data Structures using C++ Lab |
|---|--------------------------------------|
| <p>Write an Aim, algorithm, Source code, Input and Output;</p> <ol style="list-style-type: none"> 1. Write a C++ program to check given string is palindrome or not? 2. Write a C++ program to implement the operations of stack. 3. Write a C++ program to sort N given numbers using Bubble sort. | |



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| Programme code | Programme Name | Semester |
|----------------|---|----------|
| 315 | MASTER OF COMPUTER APPLICATIONS (M.C.A) | II |

Instructions

- *Assignments should be written in the candidate's own handwriting in the A4 sheets on only one side of the paper.*
- *Combine all subject assignments into single spiral binding for submission.*
- *Maximum. Marks. 25 for each Course (Theory and Practical).*
- *Model Practical Test will be conducted during PCP schedule for Practical courses of every semester.*

The list of topics for assignment for each course is furnished below:

| | |
|-------------------------------|--|
| Course Code: MCA-31541 | Accounting and Financial Management |
|-------------------------------|--|

- 1) *From the following Trial Balance of Shri - Atul Sheth prepare Trading and Profit and Loss A/c for the year ended 31st March, 2020 and a Balance Sheet on that date.*

Trial Balance as on 31st March, 2020

| Particulars | Dr. Rs. | Cr. Rs. |
|----------------------|-----------------|-----------------|
| Machinery | 90,000 | |
| Building | 50,000 | |
| Stock (01-04-09) | 10,200 | |
| Purchases | 80,800 | |
| Wages & Salaries | 17,000 | |
| Carriage Outwards | 3,000 | |
| Sundry Debtors | 50,000 | |
| General expenses | 9,100 | |
| Rent | 1,700 | |
| Bad Debts | 650 | |
| Income Tax | 600 | |
| Legal Charges | 800 | |
| Atul Sheth's Drawing | 18,000 | |
| Cash In hand | 24,000 | |
| Cash at bank | 18,000 | |
| Atul Sheth's Capital | | 1,20,200 |
| Sundry Creditors | | 18,000 |
| Bills Payable | | 23,000 |
| Returns Outwards | | 1,800 |
| Interest | | 3,300 |
| Sales | | 2,07,550 |
| | 3,73,850 | 3,73,850 |



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Adjustments :-

The following adjustments should be taken into consideration: -

- a. Stock on 31st March, 2020 was Rs.70,000/- valued at cost and market price Rs.82,000/-.
 - b. Depreciate Machinery at 10% and building @ 5%.
 - c. Rent Outstanding Rs.800/-.
- 2) *The following are summarized Profit and Loss Account for the year ending 31st March, 2020 and the Balance Sheet as on that date of A Ltd.*

Profit & Loss Account

| Dr. | | Cr. | |
|----------------------------|----------|------------------|----------|
| Particulars | Rs. | Particulars | Rs. |
| To Opening Stock | 10,000 | By Sales | 1,00,000 |
| To Purchases | 55,000 | By Closing Stock | 15,000 |
| To Gross Profit | 50,000 | | |
| | 1,15,000 | | 1,15,000 |
| To Administrative Expenses | 15,000 | By Gross Profit | 50,000 |
| To Interest | 3,000 | | |
| To Selling Expenses | 12,000 | | |
| To Net Profit | 20,000 | | |
| | 50,000 | | 50,000 |

Balance Sheet

| Liabilities | Rs. | Assets | Rs. |
|------------------------------|----------|-------------------|----------|
| Share Capital (Rs.10/- each) | 1,00,000 | Land & Building | 50,000 |
| Profit & Loss Account | 20,000 | Plant & Machinery | 30,000 |
| Creditors | 25,000 | Stock | 15,000 |
| Bills Payable | 15,000 | Debtors | 15,000 |
| | | Bills Receivable | 12,500 |
| | | Cash & Bank | 17,500 |
| | | Furniture | 20,000 |
| | 1,60,000 | | 1,60,000 |

Average Debtors Rs.12,500/-
 Credit Purchases Rs.40,000/-
 Credit Sales Rs.80,000/-



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Calculate –

- | | |
|---------------------------------|--------------------------------------|
| (i) Stock Turnover Ratio | (ii) Debtors turnover ratio, |
| (iii) Creditors turnover ratio, | (iv) Working Capital turnover ratio, |
| (v) Sales to Capital employed | (vi) Return on shareholders funds, |
| (vii) Gross Profit Ratio | (viii) Net Profit ratio |
| (ix) EPS | (x) Operating ratio. |

| | |
|--|--|
| Course Code:31522 | Relational Database Management System |
| <ol style="list-style-type: none"> 1. With neat diagram explain the architecture of DBMS. 2. Discuss in detail about various forms of normalization. 3. Explain about various Data Manipulation Language(DML) Statements with examples. | |

| | |
|--|--------------------------|
| Course Code:31523 | Computer Graphics |
| <ol style="list-style-type: none"> 1. Discuss in detail about DDA Line drawing Algorithm 2. Explain about 2D basic transformation with neat diagram. 3. Describe about Back face detection techniques | |

| | |
|---|-------------------------------------|
| Course Code:31524 | Visual Programming with .NET |
| <ol style="list-style-type: none"> 1. Explain the different types of branching statements and loops along with their syntax. 2. Write the syntax for creating class. 3. Explain how you will create an event and delegate. | |

| | |
|--|-----------------------------|
| Course Code:31525 | VB.NET and RDBMS Lab |
| <p>Write aim, algorithm, Source code, Input and Output;</p> <ol style="list-style-type: none"> 1) Write a VB.NET program to generate the factorial of a given number. 2) Write a VB.NET program to create an Advertisement using Ad rotator. 3) (a) Create table <i>student</i> with the following fields; <p style="text-align: center;"><i>student(regno,name,mark1,mark2,mark3,total,result)</i></p> <ul style="list-style-type: none"> • Write SQL query to insert 5 records • Write SQL query to calculate total = mark1+mark2+mark3 • Write SQL query to update result field with 'PASS' if total >= 150 otherwise 'FAIL' <p>(b) Design and develop an application using PL/SQL for student mark processing.</p> | |



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| Programme code | Programme Name | Semester |
|----------------|--|------------|
| 315 | MASTER OF COMPUTER APPLICATIONS (M.C.A) | III |

Instructions

- *Assignments should be written in the candidate's own handwriting in the A4 white sheets on only one side of the paper.*
- *Combine all course assignments of this semester into single spiral binding for submission.*
- *Maximum. Marks. 25 for each Course (Theory and Practical).*
- *Model Practical Test will be conducted during PCP schedule for Practical courses every semester.*

The list of assignment topics for each course is furnished below:

| Course Code: 31531 | Software Engineering |
|--|----------------------|
| 1. Explain in detail about the Water fall model with neat diagram. 2. What are the approaches for software testing? Explain. 3. Write short note on: Walkthroughs. 4. Briefly explain about scenario-based modelling and class-based modelling. | |

| Course Code: 31532 | Operating System |
|--|------------------|
| 1. Define Operating system. 2. What is Deadlock? Explain the dead lock avoidance with Bankers algorithm. 3. Briefly explain about Priority scheduling. 4. Explain about Round Robin Scheduling algorithm. | |

| Course Code: 31533 | Internet and Java Programming |
|---|-------------------------------|
| Define Applet. Name any two web browsers. How will you define and access package in java? Explain Define thread. Discuss about multithreading with suitable example. Explain in detail about any two types of inheritance with suitable example | |

| Course Code: 31534 | Computer Networks |
|---|-------------------|
| 1. Define Computer Networks. 2. Explain various components computer networks. 3. Discuss about the network topology with neat diagrams. 4. Explain about the working method of OSI reference model with neat sketch. | |



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| | |
|--|------------------------------------|
| Sub.code – 31535 | Data Mining and Warehousing |
| <ol style="list-style-type: none">1. Explain the life cycle of data mining with neat diagram.2. Briefly explain about Apriori algorithm.3. Discuss in detail about Bayesian classification algorithm.4. What is clustering? Explain k-means clustering algorithm. | |

| | |
|---|--|
| Course Code: 31536 | Internet and Java Programming Lab |
| <i>Write Aim, Algorithm, Source code, Input, output and result;</i> | |
| <ol style="list-style-type: none">1. Write a java program to display IP address and host name of the localhost.2. Write a java program to create a thread by extending the thread class.3. Write a java applet program to draw 3D rectangle and square. | |

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| Programme code | Programme Name | Semester |
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| 315 | MASTER OF COMPUTER APPLICATIONS (M.C.A) | IV |

Instructions

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The list of assignment topics for each course is furnished below:

| Course.Code: 31541 | Internet of Things (IoT) |
|--|--------------------------|
| 1. Briefly explain about IoT Protocol with neat diagram. 2. Differentiate between IoT and Machine to Machine (M2M). 3. Discuss in detail about list and its built-in functions in Python. 4. Write short note on: Python packages of Interest for IoT | |

| Course.Code: 31542 | Artificial Intelligence and Soft Computing |
|--|--|
| 1. Explain about forward and backward reasoning in Artificial Intelligence. 2. Briefly explain about back propagation neural network. 3. Write short note on : Fuzzy Inference System 4. Discuss in detail about Genetic Algorithm. | |

| Course.Code: 31543 | Big Data Analytics and R Programming |
|--|--------------------------------------|
| 1. Write short note on : Hadoop Eco system. 2. What is Map Reduce? Explain about nearest neighbour search. 3. Briefly explain about page ranking. 4. Discuss in detail about Vector and its manipulation in R Programming with example. | |

| Course.Code: 31544 | Mobile Application Development |
|--|--------------------------------|
| 1. What do we mean by mobile eco system? 2. Explain the usage of mobile web widgets. 3. Explain about mobile Information architecture mobile design. 4. Write short note on : J2ME Architecture | |

| Course.Code: 31545 | Project Work |
|---|--------------|
| Prepare and submit your mini project abstract contains latest project title, aim, objectives, existing system, proposed new system etc., under the guidance and approval of your guide allotted by using cutting-edge technologies. | |
