



TAMIL NADU OPEN UNIVERSITY
Chennai - 15
School of Computer Science

ASSIGNMENT-1

Programme Code No	: 271
Programme Name	: Master of Computer Applications
Course Code & Name	: MCA – 01 & Computer Fundamentals
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. i) What is Number Systems? Explain it.
ii) Write short notes on Shift operations.
2. List and describe the CPU registers.
3. Give a brief account on need of Multiprocessor.
4. Explain simple structure of Control Unit in detail.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Discuss in detail about the elements of Combinational Circuits.
2. Discuss in detail about method of vector processing.
3. Explain briefly ALU Organization.



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Programme Code No	: 271
Programme Name	: Master of Computer Applications
Course Code & Name	: MCA – 02 & Introduction to Software
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. Give the role of the process control block.
2. Write a shell script to find factorial of a given number.
3. What is loader? What are the types of loader?
4. Explain about I/O device management.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Explain the Vi editor with various options.
2. Discuss in detail about trends in software development.
3. Explain the functions of memory management scheme.



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Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. What are the data types available in C? Explain in detail.
2. Write about Library functions.
3. Write a program to find smallest among n numbers using array.
4. What is Graph? Explain its representation using adjacency matrix in detail.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. With Syntax, Explain While() and Switch() in detail.
2. With suitable program, Explain the concept of call by value and call by reference in detail.
3. What are the Graph Traversals? Explain in detail.



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Programme Code No	: 271
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Course Code & Name	: MCA – 04 & Elements of System Analysis and Design
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. What is meant by 'prototyping'? Explain briefly.
2. Explain the components of MIS.
3. Explain the types of forms and the requirements of forms design.
4. Write a note on coding system.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Explain about system development life cycle.
2. What is meant by knowledge based system? Explain briefly.
3. Explain in detail about the functions of project management.



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Programme Code No	: 271
Programme Name	: Master of Computer Applications
Course Code & Name	: MCA – 05 & Introduction to Database Management Systems
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. Discuss the functional dependency.
2. Explain network data model.
3. Explain the following :
 - (a) Super key
 - (b) Candidate key.
4. What are the various set operators in SQL?

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Explain 1NF, 2NF and 3NF with suitable example.
2. What are the basic relational algebra operations?
3. Discuss the design of distributed databases.



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Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. Write basic identities of Boolean algebra.
2. Explain memory hierarchy.
3. Write an assembly language program to add two numbers.
4. What is an interrupt? Discuss priority interrupt.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Define gate. What are universal gates and explain?
2. Explain the following:
 - (a) Half adder
 - (b) Full adder
3. What is ALU? Explain one stage of ALU.



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Programme Code No	: 271
Programme Name	: Master of Computer Applications
Course Code & Name	: MCA – 07 & Introduction to Software Engineering
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. Explain the line drawing algorithms.
2. Explain the Transformation principles.
3. Discuss the basics of clipping and shielding.
4. Explain the components of user interface.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Discuss about the circle generation algorithms.
2. Describe the viewing transformations.
3. Explain the Sutherland Hodgman algorithm.



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Programme Code No	: 271
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Course Code & Name	: MCA – 08 & Computer Oriented Numerical Methods
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. What are the types of numerical methods? Explain it.
2. State Gauss–Elimination method and obtain their expression.
3. State and explain the principle of last squares method.
4. State the second order Runge Kutta algorithm equations with example.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Solve the following system of equation using Gauss–Elimination method.

$$2x + y + 4z = 12$$

$$8x - 3y + 2z = 20$$

$$4x + 11y - z = 33$$

2. Explain about the Simpson's 1/3 rule with example.

3. Using Newton's Formula, find y when x = 27, from the following data:

X: 10 15 20 25 30

Y: 35.4 32.2 29.1 26.0 23.1



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Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. Explain the usage of object oriented language.
2. Explain two dimensional array with example.
3. Explain – Virtual base classes with example.
4. Explain the Basic Concept of oops.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. Explain different types of inheritance.
2. Explain various stream classes.
3. Explain the steps to create templates with example.



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Course Code & Name	: MCA – 10 & Theory of Computer Science
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

1. What is non terminal symbol? Give some examples.
2. Design a finite state automata that accepts precisely those string over $\{a,b\}$ that contains odd number of a 's .
3. "A set is generated by a regular grammar if and only if it is a regular set". Prove.
4. Construct a machine that will accept the set of strings in (a,b,c) .

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

1. What are the Kleene closures of the set
2. $A = \{0\}$, $B = \{0,1\}$ and $C = \{1, 1\}$
3. Find a Turing machine that recognizes the set $\{0^n 1^n / n \geq 1\}$.
4. Explain recursive function theory with example.



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ASSIGNMENT-2

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Course Code & Name	: MCA – 01 & Computer Fundamentals
Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. Explain about the computational data.
6. Write short notes on Assembly Language Program.
7. Discuss about the Inter processor arbitration.
8. Explain about the Microinstruction Formats.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. Write about the elements of sequential circuits.
5. Discuss in detail about Parallel Organization and RISC.
3. Explain in detail about method of vector processing.



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Batch	: AY 2018-19
No.of Assignment	: One Assignment for Each 2 Credits
Maximum Marks	: 100
Weightage	: 25%

Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. Explain different types of translators.
6. Write a shell script to find factorial of a given number.
7. Explain about swapping in detail.
8. Write short notes on Spooling.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. Explain C-SCAN scheduling of device management.
5. Describe about file access permission in UNIX OS.
6. Explain different Environment variables in detail.



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Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. Write short notes on AVL Tree.
6. Explain the representation of Singly Linked List in detail.
7. What is Queue? How do you represent it?
8. Write any file related commands.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. Explain Sequential and Indexed File organizations in detail.
5. Write algorithm for inserting and deleting an item into stack.
6. With Syntax, Explain if() and Switch() in detail.



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Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. What are the network topologies? Explain.
6. Explain different types of documentation.
7. Write short notes on elements of a system.
8. Discuss in detail about structured design.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. What are the primary functions of a second-level managerial position in MIS division?
5. Explain HIPO in detail.
6. Discuss the overview of system implementation.



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Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

3. What are elements of DBMS? Explain.
4. Write the advantages and disadvantages of relational approach.
5. What is multi key file organization? Explain.
4. Write short notes on procedural languages.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. Explain E-R diagram with example.
5. Discuss different types SQL commands.
6. Discuss in detail about different of methods of file organization.



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Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. Discuss about CPU components.
6. Discuss about Arrays with example.
7. Draw and explain the working principle of DMA.
8. Covert the Decimal number 225.25 to binary.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

9. Discuss about Error detection and Error correction codes.
10. Write shorts on I/O process.
11. Draw and explain Microcomputer Architecture.



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Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. Bring out the ISO 9000 software quality standards.
6. Briefly discuss about the risk.
7. Write short notes on formal methods.
8. Explain the functions of system testing.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. Explain spiral and RAD process models.
5. Describe the significance of fourth generation techniques.
6. Explain the COCOMO estimation model.



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Part – A (4 x 10 = 40 Marks)

Answer the following in 200 words each. Each question carries 10 marks

5. Explain the term 'Pivoting'.
6. Illustrate Gauss elimination method. Taking three equations in three unknowns.
7. Distinguish between direct and indirect method of solving simultaneous equations.
8. Define the term errors and explain any two types of error.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

5. Using the Gauss – Jordan method solve the following equations.

$$10x + y + z = 12$$

$$2x + 10y + z = 13$$

$$x + y + 5z = 7.$$

6. Find a root of the equation $x^3 - 4x - 9 = 0$ correct to two decimal places by using the bisection method.

7. Given $\frac{dy}{dx} = x^3 + y$, $y(0) = 2$, compute $y(0.2)$, by Runge – Katta method of fourth order.



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Answer the following in 200 words each. Each question carries 10 marks

5. Explain various looping statement with examples.
6. Explain the general structure of OOPS.
7. Describe the importance of destructor.
8. What is template? Explain its usage.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

4. Explain about the basic concepts of OOPS.
5. Explain the control structure and write the syntax and example.
6. Explain inline function with example.



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Answer the following in 200 words each. Each question carries 10 marks

5. Construct truth table for $(P \vee Q) \vee \neg P$.
6. Design a TM that recognizes the language of all strings of even lengths over the alphabet $\{a, b\}$.
7. What are the isomorphic graphs? Explain with example.
8. Write about the matrix representation of graphs.

Part – B (2 x 30 = 60 Marks)

Answer **any two** of the questions given below in 1000 words each.

5. Write in detail about equivalent in automation.
6. Construct an NDTM to accept the language $\{a^n, b^m, n > 1, m > 0\}$.
7. Construct truth table for the formula $(Q \wedge (P \rightarrow Q)) \rightarrow P$.
8. Explain in detail transition function in Finite automation.