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|  | **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 : CY 2019

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. Brief about generation of computers
2. List and explain various logic and shift operations.
3. Explain the uses of direct and indirect addressing modes.
4. Compare RISC versus CISC.

**Part – B (2 x 30 = 60 Marks)**

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

1. Discuss the various data representation in computer.
2. With a neat sketch, explain the function of ALU organization.
3. Discuss the components of micro computer with a neat sketch.

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|  | **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 – 02 & Introduction to Software

Batch : CY 2019

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. Develop an algorithm to find the biggest number among the given three numbers.
2. Highlight the features of UNIX operating system.
3. Explain the importance of command interpreter in UNIX programming.
4. Describe the role of software engineer in software organization.

**Part – B (2 x 30 = 60 Marks)**

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

1. Describe the functions of Linker and Loader.
2. Discuss the structure of UNIX operating system.
3. Explain the various operators and expression evaluation in shell programming.

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|  | **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 – 03 & Data Structure through “C”

Batch : CY 2019

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 primitive data types in C?
2. Difference between structures and unions.
3. Compare and contrast linked list and queue.
4. Explain the types of file organizations in C.

**Part – B (2 x 30 = 60 Marks)**

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

1. Write short notes on control structures in C.
2. Explain passing pointers and arrays to function with suitable examples.
3. Explain the queue operations.

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|  | **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 – 04 & Elements of System Analysis and Design

Batch : CY 2019

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. Describe the characteristics of a system.
2. What is modularization? Explain.
3. Outline the need of documentation.
4. Explain the attributes of a good analyst.

**Part – B (2 x 30 = 60 Marks)**

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

1. With a neat sketch, explain the function of system development life cycle.
2. Describe the design process of structured system design.
3. Explain benchmark testing and software selection criteria.

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|  | **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 – 05 & Introduction to Database Management Systems

Batch : CY 2019

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. Describe the three views of data.
2. Compare sequential and index sequential file organization.
3. Describe the properties of normalization.
4. What are the objectives of Knowledge based management system?

**Part – B (2 x 30 = 60 Marks)**

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

1. Explain the functions of Network model with an example.
2. Discuss the multi key file organization.
3. Elaborate on types of normal forms.

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|  | **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 – 06 & Introduction to Computer Organisation

Batch : CY 2019

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 short notes on binary fixed-point representation.
2. Draw the block diagram of memory and associated registers and explain.
3. Draw the block diagram of four-bit full adder.
4. Write short notes on program loops.

**Part – B (2 x 30 = 60 Marks)**

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

1. Describe binary, octal and hexadecimal representation with suitable examples.

2. Explain in detail about the DMA with block diagram.

3. Write in detail about micro instruction formats.

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|  | **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 – 07 & Introduction to Software Engineering

Batch : CY 2019

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. Define software engineering. List its tasks.
2. Describe the objectives of project planning. the line drawing algorithms.
3. Explain how to define task set for the software project.
4. Write note on modular design.

**Part – B (2 x 30 = 60 Marks)**

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

1. With a neat sketch, explain the function of Rapid Application Development (RAD) process model.
2. Write about risk projection and risk mitigation.
3. Outline the activities involved in software configuration management.

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|  | **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 – 08 & Computer Oriented Numerical Methods

Batch : CY 2019

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 short notes on sources of error.
2. Solve the system of equations 2x+ y = 3 and 7x-3y = 4 by using Gauss elimination method.
3. Find a second degree polynomial which best fit the data (1, 4), (2, 5) and (4, 13) by using Lagrange’s interpolation Formula.
4. Fit a Straight line to the data given below by using the method of least squares.

x 0 1 2 3 4

y 1 0.8 3.3 4.5 6.3

**Part – B (2 x 30 = 60 Marks)**

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

1. Find a root which lies between 1 and 2 of x3+2x2+10x-20 = 0 by using Regula-falsi method.
2. Solve the system of equations 10x -5y-2z = 3; 4x-10y+3z = -3 and x+6y+10z = -3 by using Gauss Seidel iterative method.
3. From the following table of half - yearly premium for policies maturing at different ages estimate the premium for policies maturing at age x = 63 by using Newton’s backward interpolation formula.

Age x 45 50 55 60 65

Premium 114.84 96.16 83.32 74.48 68.48

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|  | **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 – 09 & C++ and Object Oriented Programming

Batch : CY 2019

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 concepts of Object Oriented Programming?
2. Write a note on storage classes and its types.
3. Explain character array and multi-dimensional character array.
4. Explain UML and context diagrams.

**Part – B (2 x 30 = 60 Marks)**

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

1. Explain type conversion and type casting with examples.
2. Explain the following operators with example

(a) Scope Resolution

(b) Conditional

(c) Member

(d) New and delete.

1. Write about array declaration, initialization and addressing.

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|  | **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 – 10 & Theory of Computer Science

Batch : CY 2019

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. Let U = { 1, 2, 3,,…….10}, A = {1, 2, 3, 4, 5} and B = {2, 4, 6, 8}. Then find (a)AUB (b) A ∩B (c) A – B (d) B-A (e) A'
2. What is non terminal symbol? Give some examples.
3. Construct the truth table for ~ (p ʌ q) ↔ (~p v~ q). Is it a tautology
4. .Define the terms (a) Regular Graph (b) Complete Graph (c) Degree of a vertex (d) path (e) Connected graph.

**Part – B (2 x 30 = 60 Marks)**

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

1. Let Z be the set of all integers. Define a relation R on Z by aRb if and only if a-b is divisible by 3.Prove that R is an equivalence relation.
2. Find the PDNF and PCNF of (~ P→ R) ʌ Q ↔ P by using truth table.
3. Define a Finite state automata. Explain in detail about its functioning.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 01 & Computer Fundamentals

Batch : CY 2019

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. Describe the elements of sequential circuits.
2. With an example, explain the format of microinstruction.
3. Write about program development tools.
4. Describe the operation of data flow architecture.

**Part – B (2 x 30 = 60 Marks)**

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

1. Give a note on Micro programmed control organization.
2. Explain the function of Secondary memory and I/O peripherals.
3. Explain the concept of pipeline vector processing.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 02 & Introduction to Software

Batch : CY 2019

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 note on deadlock avoidance.
2. What is Vi screen editor? Explain its uses.
3. Outline the responsibilities of system administration.
4. Write note on 4G1 and natural languages.

**Part – B (2 x 30 = 60 Marks)**

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

1. Explain the various CPU scheduling algorithms.
2. Explain the syntax of various text manipulation commands.
3. Explain the phases of software life cycle with a neat sketch.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 03 & Data Structure through “C”

Batch : CY 2019

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. List any four Input and Output functions in C.
2. Explain call by value and call by reference.
3. What are the two types of traversals in a graph?
4. Describe the sorting techniques.

**Part – B (2 x 30 = 60 Marks)**

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

1. Write about function definition and declaration.
2. Write short notes on text files and binary files.
3. Explain AVL trees and B-Tree.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 04 & Elements of System Analysis and Design

Batch : CY 2019

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 about data dictionaries.
2. Explain the types of code.
3. Describe the benefits of knowledge based system.
4. Explain the components of multimedia.

**Part – B (2 x 30 = 60 Marks)**

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

1. Explain the types of feasibility.
2. Discuss the procedure for data base design.
3. Discuss the techniques for building management information system.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 05 & Introduction to Database Management Systems

Batch : CY 2019

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 drawbacks of file management system.
2. Differentiate between RDBMS and DDBMS.
3. Highlight the pitfalls of RDBMS.
4. Write note on client/server computing.

**Part – B (2 x 30 = 60 Marks)**

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

1. Draw and E-R model for Library management system.
2. Explain about evaluation of DBMS.
3. Describe the structure of distributed databases.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 06 & Introduction to Computer Organisation

Batch : CY 2019

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. List any five digital logic gates with its truth table and graphic symbol.
2. List out any five memory devices and explain briefly.
3. Explain the rules of the assembly language program.
4. Discuss in detail about interrupts with necessary diagram.

**Part – B (2 x 30 = 60 Marks)**

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

1. Describe the Read only memories.
2. What is mapping process? Explain the types of mapping.
3. Describe in detail about the components of a CPU.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 07 & Introduction to Software Engineering

Batch : CY 2019

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. Brief about fourth generation techniques.
2. Compare product and process.
3. Highlight the importance of formal technical Reviews.
4. Elaborate on test case design and art of debugging.

**Part – B (2 x 30 = 60 Marks)**

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

1. Discuss the various project decomposition techniques.
2. Explain the ways of project scheduling and tracking.
3. Explain the concept of software prototyping and information flow.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 08 & Computer Oriented Numerical Methods

Batch : CY 2019

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 the algorithm for solving a given equation by using bisection method.
2. Find the smallest positive root of the equation 2x2 - 3x - 6 = 0 by using Newton–Raphson method.
3. Illustrate Gauss elimination method. Taking three equations in three unknowns.
4. Distinguish between direct and indirect method of solving simultaneous equations.

**Part – B (2 x 30 = 60 Marks)**

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

1. Using the Gauss – Jordan method solve the system of equations.

1. 



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2. Using Newton’s divided difference formula find the polynomial to the given data

x –1 0 1 3

y = f(x) 2 1 0 –1

3. Use Runge-Kutta method to find y at x = 0.1 given dy /dx = y – x, y (0) = 2.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 09 & C++ and Object Oriented Programming

Batch : CY 2019

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 any five reserved keywords in C++.
2. Write the operator precedence rules in C++.
3. Define recursive function with an example. Brief how it works.
4. Explain about exception handling in C++.

**Part – B (2 x 30 = 60 Marks)**

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

1. Describe with a diagram of Stream buffer class hierarchy.
2. Write short notes on looping control structures.
3. Explain call by value parameters and call by reference parameters with suitable examples.

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|  | **TAMIL NADU OPEN UNIVERSITY**  **Chennai - 15**  **School of Computer Science**  **ASSIGNMENT-2** |

Programme Code No : 271

Programme Name : Master of Computer Applications

Course Code & Name : MCA – 10 & Theory of Computer Science

Batch : CY 2019

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. Let *f* :R → R defined by *f*(*x*) = x2 and g: R → R defined by g(x) 2x + 3. Find *f* ∘*g* and g ∘ *f*. Are they equal?
2. Construct truth table for.
3. Establish that

(x)(P(x) → Q(x)) ∨ (x)(Q(x) → R(x)) ⇒ (x)P(x) →R (x))

1. Find the language generated by the context free grammar ) G = (N T P S) where N = {S}, T = {a,b}, S, {S →aSb, S → ab}

**Part – B (2 x 30 = 60 Marks)**

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

1. Let *f* :R → R defined by *f(x) = 5x+3* . Check whether (a) f is 1-1 (b) f is onto. (c) Find *f* - 1 if it exists.
2. Prove that the conclusion R ∨ S follows logically from the premises

C ∨ D, (C ∨ D) → ~H, ~H → (A ∧ ~B) and (A ∧ ~ B) → (R ∨ S).

1. Explain the process of constructing a Finite state automata by using a regular grammar.