

M Sc. IT (Preivous) Examination 2010

MIT (101) Computer Organization

Part A

(Answer all Ten Questions, 20 Words Each)

1. Convert $(25)_{10}$ into Binary
2. Explain AND gate in detail
3. Which gates are known as Universal Gates
4. How many bits are required to encode all 26 letters, 10 symbols and 10 numerals
5. What is multiplexer
6. If a number written in floating point notation is $.6132784E+4$ then write the mantissa and exponent
7. What do you mean by cache memory
8. What do you mean by trap
9. Write the 2's complement of 11001000.
10. What is virtual memory

Part B

(Answer all five questions, 50 words each)

1. What do you mean by Encoder? Explain it.
2. Explain Cache Memory
3. What do you mean by priority Interrupt? Explain it
4. Explain XOR gate in detail
5. What is control money? Explain in detail

Part C

Attempt any Three Questions, 400 word each

1. What do you mean by combinational logic circuit? Explain half adder, full adder and half subtractor in detail.

OR

What is sequential circuit? Explain R-S flip flop, J-K Flip-flop, and Master slave flip flop in detail

2. Explain Register Transfer languages, Explain arithmetic micro-operation and shift micro operation, logic micro operation and shift micro-operation with suitable examples.

OR

(a) Explain stack organization

(b) Write addition and subtraction algorithm in detail.

- 3 What do you mean by addressing mode? Explain all addressing mode with suitable examples.

OR

Explain DMA Controller

What do you mean by input-output processor? Explain it.

M Sc. IT (Preivous) Examination 2010
MIT (102) Data Structure and Algorithm

Part A

(Answer all Ten Questions, 20 Words Each)

1. Write the basic operations performed on a stack
2. Transform the infix expression $(A*B)+(C-D)$ to equivalent postfix expression.
3. Transform the infix expression, $(A/B/C)+D$ to equivalent prefix expressions
4. How many edges in a complete binary tree with n terminal nodes
5. What are the factors to be considered during the selection of a sorting technique
6. What are the different types of search techniques? Which is more efficient among them
7. What is the prerequisite for the binary search
8. How does a structure different from an array
9. Describe the use of break and continue statements
10. Which of the following sorting technique will take longest time to execute and which will take the shortest time;
A) Insertion, B) Selection, C) Bubble, D) Quick

Part B

(Answer all five questions, 50 words each)

11. How the character array is initialized? Explain by giving an example
12. Draw a Graph with five vertices each of degree 4
13. When do you get the queue full and queue empty message
14. Write the application of the stack in computers
15. What are control statement in C Language

Part C

Attempt any Three Questions, 400 word each

- 16 (a) Explain the Bit wise operators with example.
(b) Write a program to check whether the input number is prime or not
- Or
- (a) Explain the data types in c Language
(b) Write a program to find factorial of n numbers using function.
- 17 (a) Explain the control statements in "C" language,
(b) Write a program to calculate sum of first ten numbers using pointers

Or

- (a) What do you mean by an algorithm?
- (b) How do you measure the efficiency of the algorithms
- (C) Write a algorithm to perform push and pop-operations in a stack

18 (a) Describe the operation to be performed on queue

- (b) What is a single linked list? Why do we need it? Explain the insertion and deletion in a single linked list taking suitable example.

Or

(a) Write an algorithm for each of the following:

- a. In order traversal
- b. Post order traversal

M Sc. IT (Preivous) Examination 2010

MIT (103) Relational Database Management System

Part A

(Answer all Ten Questions, 20 Words Each)

- (1) What is data base model
- (2) What is candidate key
- (3) What is super key
- (4) What is cryptography
- (5) What is data mining
- (6) What is generalization
- (7) What is aggregation
- (8) What is two piece looking
- (9) What is data placement
- (10)What is mapping constraints

Part B

(Answer all five questions, 50 words each)

- 11) Explain the association rules
- 12) Explain security specification in SQL
- 13) What is a difference between Data-warehouse and views
- 14) Explain the package function in PL/SQL
- 15) What do you mean by encryption of public key?

Part C

Attempt any Three Questions, 400 word each

16 An E-R diagram can be viewed as a graph. What do the following mean in terms of the structure of an enterprise schema:

- 1) The Graph is disconnected
- 2) The Graph is cyclic

Or

Design a relational database for university registrar's office. The office maintains the data about earth class, including the instructor, the number of students enrolled, and the time and place of the class meetings, For each student-class pair, a grade is recorded.

17 Consider the below relational database, Give an expression in SQL, for each of the following queries:

Employee (Employee –name, street, city)

Works (Employee name, Company Sale, Salary)

Company (Company Name, City)

Manager (Employee Name, Manager Name)

- (i) Modify the database so that Kamal now lives in Jaipur
- (ii) Give all employees of first Bank Corporation a 10% raise
- (iii) Delete all tuples in the works relation for employees of Small Bank Corporation.
- (iv) Give all managers of First Bank Corporation of 10% raise.

Or

Write an SQL Query, without using a 'with' clause, to find all branches where the total account deposit is less than the average total account deposit at all branches:

- (i) Using a nested query in 'form' clause.
- (ii) Using a nested query in a "having" clause.

18. What do you think of data mining from a data base perspective? What is data minining issues.

Or

Write Short Notes on the following:

- 1) XML tree data model
- 2) DTD Schema
- 3) Triggers
- 4) Houristics in query optimization.

M Sc. IT (Preivous) Examination 2010
MIT (104) Discrete Mathemetical Structures

Part A

(Answer all Ten Questions, 20 Words Each)

1. Define bounded lattice
2. Define Product Set
3. Define compound proposition
4. Define bipartite
5. Define Root Tree
6. Define total ordered set
7. Define adjacency matrix
8. Define equipollent set
9. Define Fallacy
10. Define planar graph

Part B

(Answer all five questions, 50 words each)

11. If A and B are any two sets, then prove that $A \cap (B - A) = \emptyset$
12. How many words can be formed from the letters of the word 'KRISHAN'
13. Show that the proposition $P \vee \sim (P \vee Q)$ is a tautology.
14. Find all spanning trees of the following graph G:

15. If a,b, and c are elements of a Boolean algebra B, then prove that:

$A +$

Part C

Attempt any Three Questions, 400 word each

16. (a) Find the closures of reflexive, symetric and transitive relation on the set:

$A = \{1,2,3\}$ define by

M Sc. IT (Preivous) Examination 2010
MIT (105) Programming in Visual Basic

Part A

(Answer all Ten Questions, 20 Words Each)

- 1) How do you center a form
- 2) How do you use the mouse off event
- 3) How do you made text box that displays asterisks when the user types in data such as passwords
- 4) How do you call a command button without clicking it
- 5) How many event is in VB6 form
- 6) Why we need a MDI form
- 7) What keyword is associated with raising system level events in VB
- 8) Which property of menu cannot be set at run time
- 9) What is difference between ADODC and ADODP
- 10) What is the difference between property Get, Set and let

Part B

(Answer all five questions, 50 words each)

- 11) What are the different types of cursor in ADODB
- 12) What is Byval and Byref in VB? How does is work?
- 13) What is difference between model and Modeless form in VB
- 14) What is serialization in .net?
- 15) Why do we use option explicit?

Part C

Attempt any Three Questions, 400 word each

- (a) (1) What is oops? Does VB Support oops concept in totality?
(2) How VB is better than conventional programming language? Explain event driven programming
- (b) Brief describe each of the following:
 - (1) Project
 - (2) Form

(3) Menu Bar

(4) Tool Box

(5) Controls

(C) Identify and correct the error(s) in each of the following:

(1) Assume that z has been initialized to 50, the value from 0 to 50 should be totaled

```
While (z>=0)
```

```
Sum= sum+z
```

(2) Assume that y and total are declared as Integers:

```
Total= 0
```

```
Do Until y =-1
```

```
Print y
```

```
Y= input Box (Enter a Value, value input)
```

```
Total= total+y
```

```
Loop
```

(3) Assume x to be declared as an integer. The code should print the values 888 to 1000:

```
X= 888
```

```
While x<=1000
```

```
X=x-1
```

```
Wend
```

(4) Assume that the variable k is declared as integer. The loop should iterate until -1 is input:

```
Do while k < > -1
```

```
Input box ("Enter a number-1 to quit:", VB6)
```

```
Loop
```

(5) Assume that the variable y has been declared as variant.

```
For y= 0.1 to 10.0 step.2
```

```
For y=0.1 to 10.0 step 02
```

```
Print y
```

```
Next .2
```

(6) Write a program that will produce following patterns:

```
      *  
    * *  
  * * *  
* * * *  
* * * * *
```

- D) (1) Explain data Manager. Explain different data controls available in VB..
(2) Explain testing and debugging program
(3) Write a program to write records randomly into a file "emp.dot" with following record structure

Type Emprecord

EMP Code as integer

Name as string

Address as string

Desig as string

Empsalary as long

End type

M Sc. IT (Preivous) Examination 2010

MIT (106)

Web Technology

Part A

(Answer all Ten Questions, 20 Words Each)

- Q1. Define Internet. List its Hardware requirement
- Q2. What do you mean by ISP? List the major ISPs, in India
- Q3. Define Firewall.
- Q4. What is web browser? List its examples.
- Q5. Define searh Engines. List name of any 3 major search engines on the internet.
- Q6. List any 3 major mobile communications technologies.
- Q7. What is an E-mail?
- Q8. What is the use of FTP services
- Q9. Answer in short, Mobile computing application.
- Q10. What is Home Page.

Part B

(Answer all five questions, 50 words each)

- 11. What is Java Script and what are its uses
- 12. What do you mean by Escape sequences
- 13. What are the fundamentals of the Java Script applets
- 14. What are local and remote applet application?
- 15. Explain in brief, what is exception handling?

Part C

Attempt any Three Questions, 400 word each

- 16. What is CSS? What are its uses? Design and write syntax for a basis CSS Style sheet and write syntax to add it in a HTML page?

Or

- 17. What is DHTML? Write features. What do you mean by DHTML events? Justify your answer by giving examples.

18. What do you mean by Java Script? What are its uses? What are operators in Java Script? Define control structures and statement objects.

or

19 What is Document Object Module(DOM)? What are its features? How do integrate Java Script with HTML and D HTML?

20 What do you mean by applet? Define the life cycle of applet, Define the functional steps for Applet?

Or

21 What do you understand by control statements? Define the various control statement in Java Script? Also define the jump statements in Java Script?

M Sc. IT (Preivous) Examination 2010
MIT (107) Data Communication and Networks

Part A

(Answer all Ten Questions, 20 Words Each)

1. What is Protocol
2. Define Topology
3. What is periodic Signal
4. List four guided media
5. What is an error
6. What is an analog signal
7. What is a digital signal
8. Define DTE
9. Define DCE
10. What is a modem

Part B

(Answer all five questions, 50 words each)

11. What is time and frequency domain?
12. What is error detection
13. List the types of errors
14. What is fourier analysis concept
15. List the networking protocols

Part C

Attempt any Three Questions, 400 word each

16. Explain OSI model in detail
Explain CRC
17. Explain TDM, FDM, WDM, DSL and HDLC
18. Explain ATM Cell and architecture
19. Explain circuit switching and packet switching

20. Explain link control protocol, network control protocol and routing concept

M Sc. IT (Preivous) Examination 2010
MIT (108) Data ware housing & Data Mining

Part A

(Answer all Ten Questions, 20 Words Each)

1. What is Data Warehousing
2. What do you mean by System Process
3. Define a Query Manager
4. What is Data Mart
5. What do you mean by Meta Data
6. What do you mean by Disaster Recovery
7. Define a security in Data Ware house
8. What do you mean by data load
9. What is Data mining
10. What is Modal Set

Part B

(Answer all five questions, 50 words each)

11. Write down a short note planning stage
12. What is Backup and Achieve Process
13. Define network and Client Hardware
14. Write down future of Data Recovery
15. Write down steps of Develop Test Plan.

Part C

Attempt any Three Questions, 400 word each

16. Define a Delivery Process. Explain various Data Ware house delivery Methods.

Or

Write down short notes on:

- i) Data Inflow process
- ii) Clean and Transform Process
- iii) Load Manager

iv) Query Manager

17. What do you mean by Hardware Partition? Explain Horizontal and Vertical Partition.

Or

Explain Hardware Architecture for Data Warehouse.

18. What are various impacts of security on design and performance. Explain the Process of tuning of Data Warehouse.

Or

Write down various data mining methods. Explain Data Mining Techniques.