D

2479

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-105

Fifth Paper

(Programming in Visual Basic)

Time allowed : Three Hours

Maximum Marks : 80

Part - A (Marks : 10)

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B (Marks : 10)

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C (Marks : 60)

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. Define the word "FORM" in Visual Basic.

2. Full from of MDI.

3. Write Data Types available in Visual Basic.

4. Write the alternative control structure of the "If... Then... Elself'

5. What Combo Box do ?

6. Which event is used to identify the pressed key?

7. Write syntax for function Input Box.

8. Explain the concept of Control Array.

9. What is the purpose of "Tab Index" ?

10. Define the term "Run-time errors"

Part - B

11. Explain the concept of IDE.

12. How the menu are created in Visual Basic ?

13. Differentiate between Picture Box and Image Box.

14. Explain the controls available for File System.

15. How the debugging can be used while program is under execution ?

Part - C

16. (a) Create a form which accepts the values for name, age, address, email and mobile number and create a button "Save". Write procedures to store above values into customer table of your database.

(b) Explain the concept of Event Driven Programming.

17. Write short note on the following : 20

(a) Characteristics of Visual Basic.
(b) Dynamics Forms
(c) Use of Slider Control
(d) Error Handling
(e) Graphics in Visual Basic

18. (a) Explain the Structure of VB.Net
(b) Advantages of VB. Net over VB
(c) Discuss the loops in VB.Net
(d) Explain the Database connectivity in VB.Net
(e) Explain the use API in VB.Net

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2475

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-101

First Paper

(Computer Organization)

Time allowed : Three Hours

Maximum Marks : 80

Part - A **(Marks : 10)**

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B **(Marks : 10)**

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C **(Marks : 60)**

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. Draw Von Neumann diagram.

2. What is the differences in representation of floating point and fixed point numbers.

3. Perform following operations:

   (a) (-125) - (-3)

   (b) $(25)_{10} + (15)_{10}$

4. What is a bus and why it is used.

5. Define decoder.

6. What is microinstruction.

7. Develop a K-Map for :

   $f = (A,B,C,D) = \Sigma (0,3,5,7,9,11,13,15)$

8. What is selective set.

9. Write down arithmetic instruction.

10. What is memory-reference registers.

Part - B

11. What is the need of having Master-Slave flip flop ? Draw the block diag. of Master Slave flip-flop.

12. What is half adder. How can a full adder be made using few half adders and gates? Draw the resulting logic diagram.

13. What is a register ? Draw the logic circuit for a 4 bit register. If a register needs to have feedback circuit, what kind of a flip flop should it be made of ? Justify your answer.

14. List any five instructions of 8086 microprocessor.

15. What is interrupt ? When can it occurs and explain its types.

Part - C

16. (a) Explain the difference between combinational and sequential logic.

(b) Show the realization of D-FF form a JKFF and explain.

(c) Design a digital circuit that perform the four logic operations of exclusive-OR, exclusive-NOR, NOR and Nand. Use two selection variables.

OR

17. (a) An n-bit digital multiplexor is a universal logic circuit. Explain.

(b) Design a 4-bit shift register with the following capabilities using D flip-flops.

(i) Serial in Parallel out

(ii) Parallel in - Parallel out.

18. What is micro-operation ? How is micro-operation different from an instruction ? Compare and contrast micro-operation with microinstruction with an example.

OR

19. **(a)** Write a program in 8086 assembly language to find even numbers in the list of 10 numbers available in the data segment.

(b) Write a program in assembly language to concatenate two strings.

20. **(a)** Describe the following addressing modes with the help of an example :

(i) Index addressing mode.

(ii) Relative addressing mode.

(iii) Indirect addressing mode.

(b) Can a machine have zero address instruction ? If yes, then explain its functioning with an example.

OR

21. What is synchronous counter ? How it is different from ripple counter ? Where are ripple counters used ? Draw the logic diagram for a 3-bit ripple counter.

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2480

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-106

Sixth Paper

(Web Technology)

Time allowed : Three Hours

Maximum Marks : 80

Part - A **(Marks : 10)**

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B **(Marks : 10)**

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C **(Marks : 60)**

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. Define E-Commerce.

2. What do you mean by firewall ?

3. Give uses of DHTML.

4. What do you mean by Mobile Computing ?

5. Define exception handling.

6. What do you understand by Gopher and Telnet.

7. What is web server ?

8. Give the operations that can be performed on an image.

9. What do you mean by client-server network security.

10. Define a tag with example.

Part - B

11. Write a HTML code to display frames of different sizes (Three frames).

12. Explain local and remote applet applications.

13. Give various ways how you can maintain network security.

14. Explain E-Commerce framework.

15. Discuss the life cycle of applet.

Part - C

16. Give various features of Java Script language ? How server side programming is useful ?

OR

Explain Electronic and Media Convergence. Also give difference between Traditional and electronic Business applications.

17. Define applets. How do you create and pass parameters to applets. Give example.

OR

Define DHTML. Expalin its various functionalities. Also explain only DHTML is better than HTML.

18. How two web pages can be linked ? Write an HTML code for showing the use of multimedia applications.

OR

What are different types of transmission protocols. Write a note on threading and multi-threading.

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2477

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-103

Third Paper

(Relation Database Management System)

Time allowed : Three Hours

Maximum Marks : 80

Part - A (Marks : 10)

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B (Marks : 10)

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C (Marks : 60)

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. What do you mean by the Database ?

2. List Database user's and describe one of them.

3. What is a Relation ?

4. List name of data types of SQL.

5. What is primary key ?

6. What is Foreign key ?

7. What is Domain ?

8. List commands used to handle a Database.

9. List SQL operaters with examples.

10. What is Document ?

Part - B

11. Explain DDL.

12. Explain object Oriented Modeling.

13. Write algorithm for external storing.

14. Explain multi-media database.

15. Write Oracle transactions.

Part - C

16. Draw and explain database system architecture.

OR

Explain ER-model with example.

17. Explain architecture of distributed processing system.

OR

Explain set operating with suitable examples.

18. Explain security of Database with example.

OR

Write SQL procedure in from of menu driven for any operations of a database.

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2481

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

INFORMATION TECHNOLOGY

MIT-107

Seventh Paper

(Data Communication and Networks)

Time allowed : Three Hours

Maximum Marks : 80

Part - A **(Marks : 10)**

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B **(Marks : 10)**

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C **(Marks : 60)**

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. Define the Protocol.

2. Define cyclic redundancy.

3. What is the use of Link Control Protocol ?

4. What is Multiplexing ?

5. What is DTE ?

6. Name the ATM Layers ?

7. How many types of errors in Multiplexing.

8. What is cable Modem ?

9. What is time domain ?

10. What is Encoding ?

Part - B

11. Give the HDLC frame format and explain the bit stuffing scheme is used. Also give the control field format of the different type frames used.

12. What are the advantage of digital communication over Analog Communication ?

13. What is the difference between simple and full duplex transmission.

14. What are the Major difference between go-back-n and select-repeat protocol.

15. Change the Multicast IP address Z30·43·14·7 to an Ethernet Multicast Physical Address.

Part - C

16. (a) Draw and discuss the IP datagram frame format. Discuss in detail the various field what is subnetting.

(b) Show by calculations how many host per network each IP Address class A, B and C can have.

OR

(a) What are the different type of error detection method. Explain CRC error detection technique using polynomial $X^4 + X^3 + 1$ and data 1110011.

(b) Describe the stop and wait flow control technique.

17. (a) Explain the following term with example.

(i) Multicast addressing.

(ii) Unicast addressing.

(iii) Anycast addressing.

(b) Explain different type of header supported by IPV6.

OR

(a) Explain ATM cell architecture and transmission of ATM cell with suitable diagram.

(b) Explain the terminology of virtual circuit approach with suitable diagram.

18. (a) Briefly describe the different type of copper cable media used in physical layers of typical Ethernet LAN.

(b) What are the service catagories in ATM Networks briefly describe.

OR

(a) Differentiate the periodic and aperiodic signals.

(b) Explain in brief :

(i) EIA232

(ii) x·25

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2482

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-108

Eighth Paper

(Data Warehousing and Mining)

Time allowed : Three Hours

Maximum Marks : 80

Part - A **(Marks : 10)**

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B **(Marks : 10)**

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C **(Marks : 60)**

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. What is the data warehouse ?

2. Write uses of data warehouse.

3. What do you mean by data in flow process ?

4. What is the Star Flake Schema ?

5. What is the hardware partioning ?

6. What is the Data Marts ?

7. What is the Capacity Planning ?

8. What is the Data Mining ?

9. What is the backup recovery ?

10. What do you mean by Data Mining approaches?

Part - B

11. Discuss the data warehouse delivery methods.

12. Discuss the function of Local Managers.

13. What do you mean by Query Generations ? Explain.

14. Discuss the backup strategies of Data Warehousing.

15. Explain concepts of Technical and Social context of Data Mining.

Part - C

16. **(a)** Explain the backup an Query management Process.

(b) What do you mean by Database Schema? Explain the process of designing star flake schema of multi dimentional.

OR

(a) Explain the data Transformation and load in reference of disigning data Marts.

(b) Explain the Meta data and tools of Data Warehouse process.

17. (a) Explain the capacity planning of Data Warehouse in detail.

(b) What do you mean by Testing database and its applications ? Explain.

OR

Discuss the different Data Mining Methodologies in detail.

18. (a) Define the service agreement at operations of Warehouse.

(b) Discuss the features of testing Operational Environment.

OR

Explain the followings :

(a) Building good Effective Models.

(b) Data Warehouse Planning Stages.

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2478

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-104

Fourth Paper

(Discrete Mathematical Structures)

Time allowed : Three Hours

Maximum Marks : 80

Part - A **(Marks : 10)**

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B **(Marks : 10)**

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C **(Marks : 60)**

Answer all **three** questions (**400** words each).
Each question carries equal marks.

PTO

Part - A

1. Define rooted tree.

2. Define planar graph.

3. Define complemented Lattice.

4. Define combinations.

5. Define normal subgroup.

6. Define product set.

7. Define Adjacency matrix.

8. Define Logical equivalence.

9. Define Maximal and minimal elements. 1

10. Define Pigeonhole principle. 1

Part - B

1. If A, B and C are three sets, then prove that

   $A \times (B \cup C) = (A \times B) \cup (A \times C)$ 2

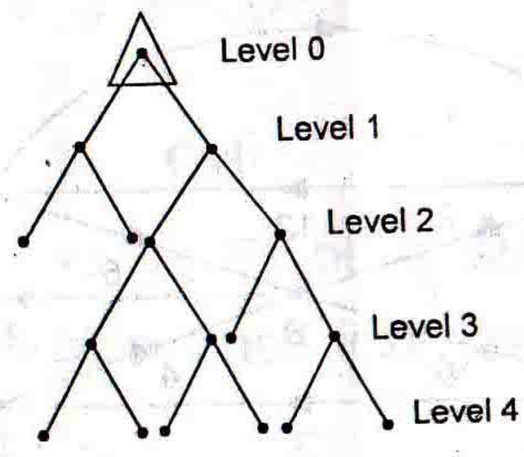
12. Show that the proposition $(P \wedge Q) \wedge (\sim P)$ is a contradiction. 2

13. Eight boys and five girls constitute a group. In how many ways seven of them can be selected if the selections always have at least three boys and two girls ? 2

14. In the Boolean algebra B, for all $a, b \in B$

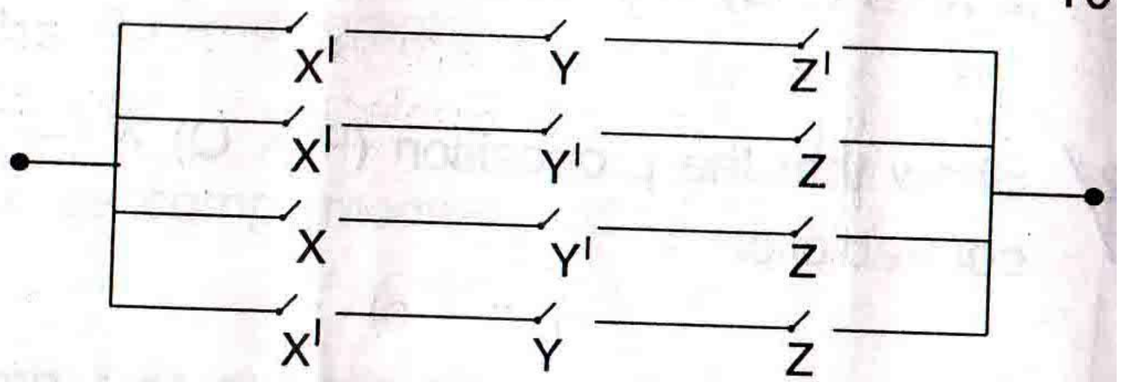
    $(a + b)^{l} = a^{l} b^{l}$ 2

15. Find the path length of a Binary Tree with 17 vertices and four levels of the following figure. 2



Part - C

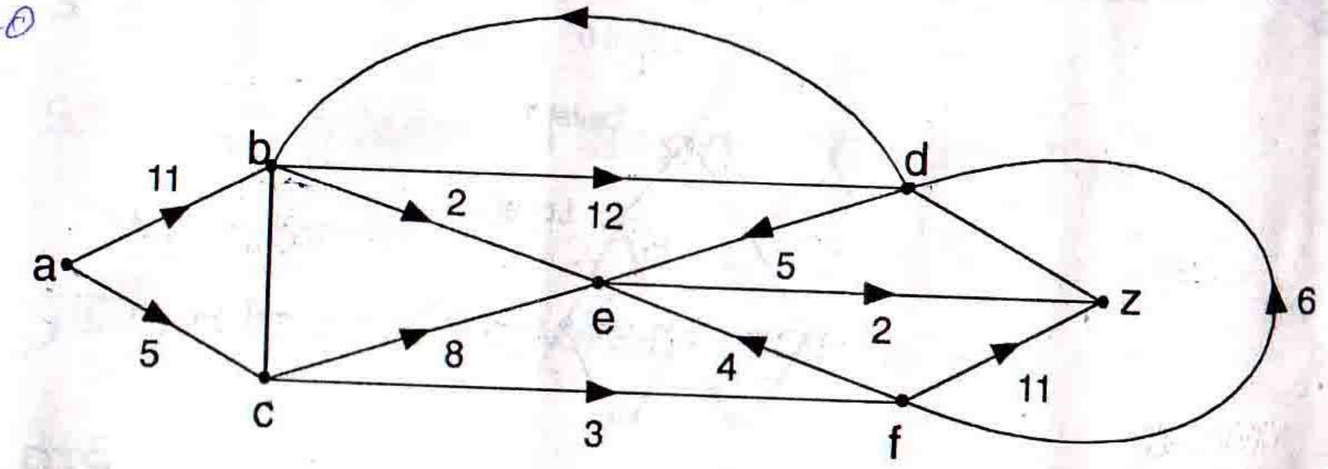
16. **(a)** Prepare a truth table for the following switching circuit. Also find the equivalent simplified circuit. 10



(b) Test the validity of the following arguments: The earth is spherical implies that the moon is speherical. The earth is not spherical. There fore the mooon is not spherical. 10

OR

17. **(a)** Find the shortest path and its length between the vertices a and z in the following weighted diagraph : 10



OR

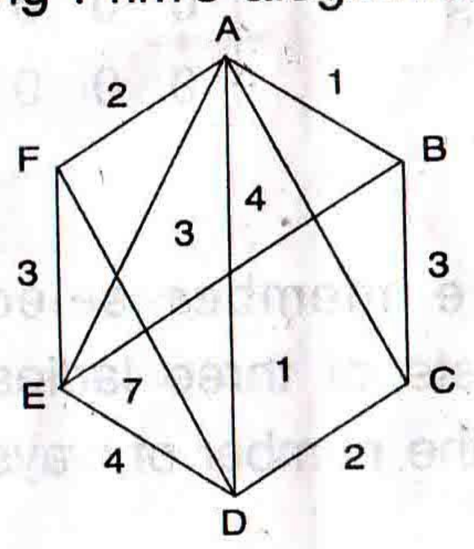
(b) Generate 'NAND' function, using only 'NOR' gates.

18. (a) If a, b and c are any three arbitrary elements of a Boolean alegebra B, then prove that :

(i) $(a + b)(a' + c)(b + c) = ac + a'b + bc$

(ii) $(a + b)(a' + c) = ac + a'b$ 5 + 5

(b) Find the minimal spanning trees for the weighted graph shown in the following figure using Prim's alogrithm. 10



OR

19. (a) Let $H = \{0, 3, 6\}$ be a subgroup of Z_9 under addition. Then find cosets of H in Z_9. 10

(b) Show that mapping f form a multiplicative group of non zero complex numbers Co in to Co given by $f(x) = x^4$, is a homomorphism. Determine Kerf. 10

20. (a) Let A = {1,2,3,4,5} then draw the Hase diagram of the partial order relation R whose matirx representation is : 10

$$M_R = \begin{array}{c} \\ 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{array} \begin{array}{c} \begin{array}{ccccc} 1 & 2 & 3 & 4 & 5 \end{array} \\ \begin{bmatrix} 1 & 1 & 1 & 1 & 1 \\ 0 & 1 & 1 & 1 & 1 \\ 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix} \end{array}$$

(b) A five member selection committee consists of three ladies and two gents. Find the number of ways they can sit in a row if

(i) The ladies and gents are to sit together,

(ii) both the gents are to sit together. 5 + 5

OR

21. (a) If h (an integer) is the height of a balanced complete binary tree on n vertices, then prove that :

$$h = \log_2 \left(\frac{n+1}{2} \right)$$ 10

(b) For the sets A, B, C and D, prove that

(i) $A \times (B \cup C) = (A \times B) \cup (A \times C)$

(ii) $(A \times B) \cup (C \times D) = (A \cup C) \times (B \cup D)$

5 + 5

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2476

M.Sc. (Previous) Examination, 2012

INFORMATION TECHNOLOGY

MIT-102

(Data Structure and Algorithm)

Time allowed : Three Hours

Maximum Marks : 80

Part - A (Marks : 10)

Answer all **ten** questions (**20** words each).
Each question carries equal marks.

Part - B (Marks : 10)

Answer all **five** questions (**50** words each).
Each question carries equal marks.

Part - C (Marks : 60)

Answer all **three** questions (**400** words each).
Each question carries equal marks.

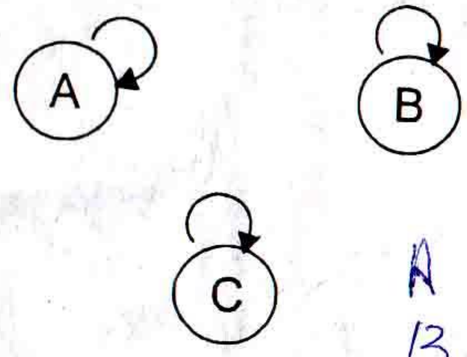
PTO

Part - A

1. What is the difference malloc ( ) and calloc ( )?

2. Explain the role of static variable.

3. What is the significance of Header node in circular linked list ?

4. 

write the adjacency matrix for the graph.

5. How a polynomial can be represented using linked list ?

6. What do you understand by abstract data type?

7. What are the rules for constructing/creating a B-Tree of order m ?

8. What are the benefits of linked list over array ?

9. Write the 'C' structure code for a Binary Tree ?

10. What is the difference b/w tree and graph ?

Part - B

11. Write a c function to find the fibbanacci number using recursion.

12. Discuss the sequential and linked memory representation of a Tree.

13. Evaluate given Prefix expression into Postfix.

/, *, P, +, Q, R, S

14. Write down the algorithm to implement 2 stack using 1 array.

15. Draw the Tree which corresponds to the expression : $E = (2x + y)(5a - b)^3$

Part - C

16. (a) Construct Binary Tree using following info.

INORDER TRAVERSAL :- B G C H I A E L J M D K F

PREORDER TRAVERSAL :- A B C G H I D E J L M F K 10

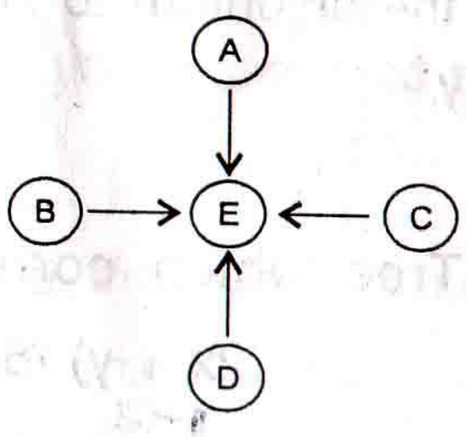
(b) Write an algorithm to delete a particular mode from a Binary Search Tree. 10

OR

(a) Derive the wrost case complexity of quick sort. 10

(b) Write any sorting algorithm whose best case, worst case and average case for an input of N number is same. 10

17. (a) Explain Depth first search for the given graph. 10



(b) Differentiate among θ (theta), Ω (omega) and (Big on) notation. (use diagram, if necessary) 10

OR

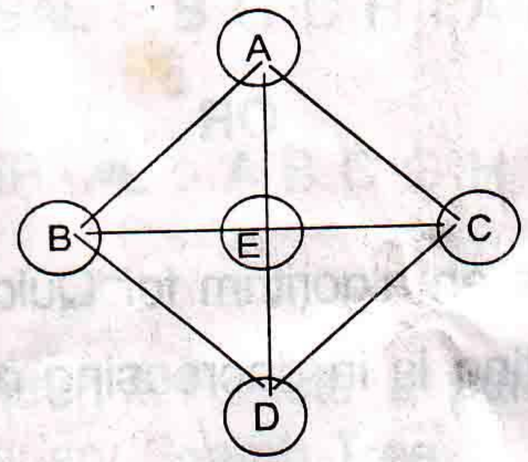
(a) Write an algorithm for Quick Sort Technique (sorting is in decreasing order). 10

(b) Using a pointer write a function that receive a charater string as an argument and delete all accurance of spaces in the string. The function should return the corrected string. 10

18. Write a c function to store the elements of a 2-D array using double pointer (for eg.**p). Use dynamic memory allocation for allocating memory to the pointer. (The size of row and column should be taken from the user.) 20

((p+i)+j) **OR**

(a) Explain the representation of the given graph using linked list. 10



(b) What is priority queue ? Explain the array and linked representation of priority queue. 10

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