Fifth Semester B.C.A Degree Examinations
JANUARY/FEBRUARY 2024
(CBCS NEP Scheme)
NBE 0210: DESIGN AND ANALYSIS OF ALGORITHMS

Time: 2 hrs]

[Max. Marks: 60

Instructions to Students:

1. *The students should legibly write Section number along with question numbers.*
2. *The answer without Section number and question numbers will not be valued.*
3. *The question numbers should be legibly written with in margin only.*
4. *Normal calculator can be used.*

SECTION – I

I. *Select the most appropriate answer from the options provided:* 10 ×1 = 10

I - 1) $t(n) \in O(g(n))$ means _____

    a) $t(n) \geq g(n)$ b) $t(n) \leq g(n)$

    c) $t(n) = g(n)$ d) None

I - 2) The best case complexity of sequential search is 0 (?)

    a) θ b) n

    c) d d) 1

I - 3) The efficiency of an algorithm depends on

    a) Input size   b) Output size

    c) Both   d) None

I - 4) Among $n, n^2, n^3, \log n, 2^n$ orders of algorithm the highest growing is _____

    a) n^3,   b) $\log n$

    c) 2^n d) n

I - 5) TSP is an example of _____

    a) Dynamic Program   b) Exhaustive search
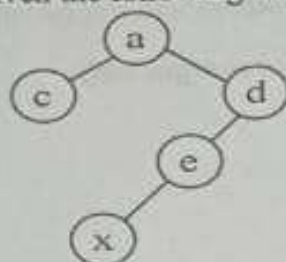
    c) Both a and b   d) None

I - 6) Backtracking is used in _____

    a) BFS   b) DFS

    c) None   d) both a and b

I - 7) The merge and quick sort techniques, have _____ order of complexity (Average case).

    a) Different   b) Same

    c) Not comparable   d) None

I - 8) Given the following binary tree, the node at the middle of in order traversal is _____

    a) c   b) e

    c) d   d) x

I - 9) In graphs, topological sorting can be done only when graph is a _____

    a) Directed Cyclic Graph   b) Undirected a Cyclic Graph

    c) Undirected Cyclic Graph   d) Directed a Cyclic Graph

I - 10) A minimal spanning tree contain _____

    a) All edges of graph   b) All vertices of graph

    c) both a and b   d) Only option a

SECTION – II

II. *Answer any FIVE of the following:*   5 × 3 =

II - 1) For the algorithm of finding sum of 'n' numbers specify the following.

    i) Input size

    ii) Basic operation

    iii) Number of basic operations performed

II - 2) Draw the flowchart of algorithm design and analysis process.

II - 3) Write the Eulid's algorithm to find the GCD of two numbers.

II - 4) Check whether the following are true using informal definition of 0 and Ω

    i) $n(n+1)/2 \in 0(n^3)$ ii) $n(n+1)/2 \in 0(n^2)$ iii) $n(n+1)/2 \in \Omega(n)$.

II - 5) Given the list of elements $[4\ 2\ 1\ 5\ 6\ 3]$, sort them using bubble sort. Find out no. of comparisons used and number of swaps done.

II - 6) With a simple example explain Knapasack problem.

II - 7) Analysis the binary search algorithm and derive the expression for its time complexity. (Order of growth)

II - 8) Write an algorithm for insertion sort method.

SECTION – III

III. *Answer any THREE of the following:* $\qquad$ $3 \times 5 = 15$

III - 1) Explain the steps involved in analysis framework.

III - 2) Find the order of growth of the following series.

$$a)\ \sum_{i=0}^{n-1}\sum_{j=0}^{i-1}(i+j) \qquad b)\ \sum_{i=0}^{n-1}\left(i^2+1\right)^2$$

III - 3) Given the graphical representation of travelling salesman problem, find its optimal solution where the starting city is Ventex B.
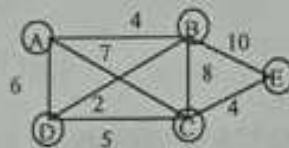
III - 4) Given the in order and pre order traversal of a binary tree, write the node sequence of post order traversal.

Inorder traversal: d, g, b, e, a, f, c

Preorder traversal: a, b, d, g, e, c, f

III - 5) Apply the Prim's Algorithm to find the minimum spanning tree for the given graph. Also find its cost.

SECTION – IV

$2 \times 10 = 20$

IV. *Answer the following:*

(10)

VI - 1) Explain the steps involved in algorithm design and analysis process.

OR

a) With neat graphical representation explain the three asymptotic notations used in algorithm analysis.

b) Write an algorithm to find the number of digits in the binary representation of a decimal number and analyse its complexity. (6+4

VI - 2) a) i) With an example explain depth first search algorithm.

ii) What is meant by Brute Force approach? Explain the use of this approach in analysis of sequential search algorithm. (5+5

OR

a) Analysis quick sort algorithm.

b) Explain the greedy technique in finding MST using Dijkstra's algorithm.

(5+5

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Fifth Semester B.C.A Degree Examinations
JANUARY/FEBRUARY 2024
(2019 – 20 Scheme)
BCE 420: WEB PROGRAMMING

Time : 3 hrs]   [Max. Marks: 80

Instruction to the Students:
1. Answer any FIVE full questions
2. Students should attend at least one question form each unit.

PART – A

1. a) Explain the structure of HTML program with example.

   b) Write a note on evolution of web.

   c) Define the following: a) Web page b) Web site c) Search Engine
      d) WWW e) URL.   (6 + 5 + 5)

2. a) What is a list? Explain various types of list.

   b) What is the need of CSS in web programming? Explain different levels of CSS with suitable examples.

   c) Explain the <TABLES> tag with its attributes. Give Suitable example.   (5 + 5 + 6)

PART – B

3. a) Explain any six advantages of JavaScript.

   b) Explain any five event handling functions in Java Script.

   c) What do you mean by pattern matching? Write a note on pattern matching using regular expression.   (5 + 5 + 6)

4. a) Explain client-Server architecture and its benefits.

   b) Differentiate between Stateless and Stateful protocols.

   c) Write a note on ports and sockets.   (6 + 5 + 5)

PART – C

5. a) Explain Enterprise application and Web Application.

   b) Explain different types of tiers in Enterprise Application.

   c) Expand JEE. Explain characteristics of JEE.   (5 + 6 + 5)

6. a) Compare between traditional approach and J2EE approach towards applica development.

b) Write a note on the following
   i) web container   ii) EJB container

c) Explain JEE Components and services with a diagram.

PART – D

7. a) Differentiate Java and JSP

b) Explain the advantages of JSP and write JSP characteristics.

c) Explain the steps in writing and executing JSP programs.

8. a) Write a note on Session variable in PHP.

b) Write a note on:
   i) Functions in PHP   ii) MYSQL integration with PHP

c) Write a program to upload file using PHP.

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Fifth Semester B.C.A Degree Examinations
JANUARY/FEBRUARY 2024
(2019 – 20 Syllabus)
BCE 440: DATA COMMUNICATION

Time : 3 hrs]
[Max. Marks: 80

Instruction to the Students:
1. Answer any FIVE full questions
2. Students should attend at least one question form each unit.

PART – A

1. a) What is data communication? With a neat diagram explain data Communication model.

   b) What is analog and digital transmission?

   c) Explain different types of transmission impairments.   (7 + 4 + 5)

2. a) Write a note on LAN.

   b) Explain any two guided transmission media.

   c) Explain broadcast radio transmission with its application.   (4 + 8 + 4)

PART – B

3. a) Write a note on NRZ.

   b) Explain biphase coding technique.

   c) Write a note on delta modulation.   (5 + 5 + 6)

4. a) Explain synchronous and asynchronous transmission.

   b) Differentiate AM and FM.   (6 + 6 + 4)

   c) Write a note line configuration.

PART – C

5. a) Explain sliding window protocol.

   b) Explain error detection using CRC with an example.   (5 + 6 + 5)

   c) Explain stop and wait ARQ.

6. a) Explain frame structure of HDLC.

b) Write a note an ALOHA.

c) Explain Collision free protocol.

PART – D

7. a) Explain FDM.

b) Explain ISDN user interface network.

c) Write a note on TDM.

8. a) Explain packet switching networks.

b) Write a note on time division switching.

c) Differentiate circuit switching and packet switching.

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Fifth Semester B.C.A Degree Examinations
JANUARY/FEBRUARY 2024
(2019 – 20 Syllabus)
BCE 430: OPERATING SYSTEM

Time : 3 hrs]   [Max. Marks: 80

Instruction to the Students:
1. Answer any FIVE full questions
2. Students should attend at least one question form each unit.

PART – A

1. a) Explain batch systems and time sharing system.

   b) Explain parallel and distributed system.

   c) Explain real time and embedded system.

   d) Define multiprogramming. $(4+5+5+2)$

2. a) Explain multimedia system and handheld system.

   b) Explain client server and peer-peer system.

   c) Explain web based and open source operating system.

   d) Explain multimedia systems. $(4+5+4+3)$

PART – B

3. a) Explain PCB in detail.

   b) What you mean by thread? Explain.

   c) Explain scheduler and context switching.

   d) Explain inter process communication. $(5+3+4+4)$

4. a) Explain communication in client server system- RPC and RMI.

   b) Explain the contents included in scheduling criteria.

   c) Explain priority scheduling with a suitable example.

   d) Write a note on real time scheduling. $(5+4+4+3)$

PART – C

5. a) Define deadlock. Write a note on system model.

   b) Explain deadlock characterization.

    c) Explain deadlock prevention.   D

    d) Explain banker's algorithm   (4-

6. a) Explain deadlock avoidance.

    b) Explain deadlock detection.

    c) Explain recovery from deadlock

    d) Explain resource allocation graph.   (4+

PART – D

7. a) Explain swapping of two processes.

    b) Explain contiguous memory allocation.

    c) Define i. Pure segmentation. ii. Pure paging.
           iii. Fragmentation.   iv. Thrashing.

    d) Explain the basics of page replacement.   (4+4+

8. a) Explain disk management and disk reliability.

    b) Explain file system structure.

    c) Explain protection and consistency semantics.

    d) Write a note on free space management.   (4+4+

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Fifth Semester B.C.A Degree Examinations
JANUARY/FEBRUARY 2024
(CBCS NEP Scheme)
NBE 0240: PAPER: CLOUD COMPUTING

2 hrs]

[Max. Marks: 60

tions to Students:

The students should legibly write Section number along with question numbers.

The answer without Section number and question numbers will not be valued.

The question numbers should be legibly written with in margin only.

SECTION – I

et the most appropriate answer from the options provided: $10 \times 1 = 10$

1) Which of the following is the Leading cloud platform service

 a) Area   b) Azure
 c) Bing   d) MSN

2) Amazon provides _____ Cloud Service.

 a) AWS   b) Azure
 c) Google Cloud   d) Alibaba Cloud

3) What type of computing technology refers to services and applications network through virtualized resources?

 a) Distributed computing   b) Cloud computing
 c) Soft computing   d) Parallel computing

4) Cloud deployment models are _____

 a) Public cloud   b) Private cloud
 c) Hybrid cloud   d) All the above

5) Cloud container are used in _____

 a) Run Micro Services   b) Modification of Data
 c) Update the software   d) Revoke the software

6) Which of the following is not a cloud service model

 a) Saas   b) Paas
 c) Haas   d) Taas

I - 7) Expand S3 _____

    a) Simple Storage Service   b) Simple Structure Storage

    c) Storage Structure Service   d) Sample Storage Service

I - 8) Expand EC^2 _____

    a) Elastic Compute Cloud   b) Effective Cloud Computer

    c) Elastic Cloud Compute   d) Erasable Compute Cloud

I - 9) ECG is used for _____

    a) Record electrical signals from Heart   b) Generate Heart Signal

    c) Change the heart beat   d) Find heart size

I - 10) Cloud application are as follows

    a) Social networking   b) Media Applications

    c) Multiplayer online gaming   d) All the above

SECTION – II

II. Answer any FIVE of the following:

II - 1) Explain characteristics of Cloud Computing.

II - 2) What you mean by Virtualization? Mention its types.

II - 3) Define Aneka. Explain its overview.

II - 4) Explain Windows Azure platform appliance.

II - 5) Mention the uses of image processing in cloud.

II - 6) Explain hybrid and public cloud.

II - 7) Mention the cloud computing paradigms.

II - 8) Mention the uses of Iaas.

SECTION – III

III. Answer any THREE of the following:

III - 1) Explain trends in cloud computing.

III - 2) Explain layered architecture with a labelled diagram.

III - 3) Mention the uses of Aneka Platforms.

III - 4) Explain google app engine architecture.

III - 5) Explain geosciences application used in cloud.

SECTION – IV

Answer the following:

$2 \times 10 = 20$

VI - 1) a) Explain different types of cloud.

(10)

OR

b) Explain the different cloud deployment models.

(10)

VI - 2) a) Explain the uses of Aneka containers.

(10)

OR

b) i) Explain Amazon cloud services.

ii) Explain multiplayer online gaming.

$(5 + 5)$

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Fifth Semester B.Sc., Degree Examinations

January / February 2024

(CBCS NEP Scheme)

COMPUTER SCIENCE

NSE0740 : Computer Network

Time: 2 hrs.]   [Max.Marks:60

Instruction to the Candidates :

1. The students should legibly write Section number along with question numbers.
2. The answers without Section number and question numbers will not be valued.
3. The question numbers should be legibly written within the margin only.

SECTION – I

Select the most appropriate answer from options provided :   10X1=10 Marks

I-1) How many layers in the OSI model _____

   a) 2 layers   b) 4 layers
   c) 7 layers   d) 9 layers

I-2) The full form of OSI is _____

   a) Operating system interface   b) Optical system interconnection
   c) Operating system internet   d) Open system interconnection

I-3) Identify the full form of HTTP _____

   a) Hyper text transfer protocal   b) Hyper text transfer package
   c) Hyper transfer text package   d) Hyper transfer text practice

I-4) Identify the In correct network topology _____

   a) Bus   b) Star   c) P2p   d) Ring

I-5) "Parity bits" are used for which of the following purposes _____

   a) Encryption of data   b) To transmit faster
   c) To detect errors   d) To identify the users

I-6) In pure ALOHA, the vulnerable time is _____ the frame transmission time

   a) The same as   b) Two times
   c) Three times   d) None of these

I-7) Which of the following is not a guided media _____

   a) Twisted - pair   b) Co-axial cable

   c) Fiber – optic   d) Atmosphere

I-8) The term "CSMA" stand for _____

   a) Carrier sense multiple access   b) Carrier server multiple

   c) Control sense multiple access   d) None of these

I-9) A local telephone network is an example of a _____ network

   a) Packet switched   b) Circuit switched

   c) Bit switched   d) Line switched

I-10) URL stands for _____

   a) Unique reference label   b) Uniform reference label

   c) Uniform resource locator   d) Unique resource locator

SECTION – II

II. Answer/Write notes on any FIVE of the following.   5X3=15

II-1) Write a short note on connection oriented and connection – less services.

II-2) Define circuit switching, packet switching , message switching.

II-3) Mention the different types of guided transmission media.

II-4) Explain the function of Data Link Layer

II-5) Expand FTP and write any 2 importance of FTP.

II-6) Explain HDLC [High Level Data Link Control]

II-7) Write a note on ALOHA.

II-8) Explain the types of Network.

SECTION – III

III. Answer any THREE questions from the following: 3X5=1

III-1) Write a note on design issues for layers.

III-2) Differentiate between analog signal and digital signal.

III-3) Explain the Goals of Computer Network.

III-4) Explain the working of CSMA / CD.

III-5) Explain DNS, www, HTTP, POP

SECTION – IV

IV. Answer the following:

2X 10= 20 Marks

IV-1) Answer the following questions

i) Explain different network topologies

ii) Explain OSI reference model

(5+5)

OR

i) Explain coaxial cable with a neat diagram.

ii) Explain packet switching.

(5+5)

IV-2)

i) Explain CRC methods with an example.

ii) Explain crash recovery

(5+5)

OR

i) Explain Go Back - N ARQ

ii) Explain UDP

(5+5)

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Fifth Semester B.Sc., Degree Examinations
January / February 2024
(CBCS NEP Scheme)
COMPUTER SCIENCE
NSE0730 : Programming in Python

Time: 2 hrs.]

[Max.Marks:60

Instruction to the Candidates :

1. The students should legibly write Section number along with question numbers.
2. The answers without Section number and question numbers will not be valued.
3. The question numbers should be legibly written within the margin only.

SECTION – I

Select the most appropriate answer from options provided :   10X1=10 Marks

I-1) Which of the following is used to define a block of code in Python language

   a) Indentation   b) Key
   c) Brockets   d) All of the mentioned

I-2) Total number of basic keywords present in Python version 3.10

   a) 20   b) 32
   c) 26   d) 35

I-3) Which of the following keyword used to define function in Python

   a) def   b) function
   c) define   d) user function

I-4) What is the default value of encoding in encode ( ) ?

   a) Ascii   b) Qwerty   c) Uff-8   d) Uff-16

I-5) To add a new element to a list which function can be used ?

   a) add ( )   b) append ( )
   c) addlast ( )   d) add end ( )

I-6) _____ is used as index in dictionary

   a) Key   b) Value
   c) Both   d) None

I-7) What is second parameter is open ( ) in file handling

a) File name
b) Mode
c) Type
d) value

I-8) An exception is _____

a) An object
b) A special function
c) A standard module
d) A module

I-9) Name of the constructor method in python is _____

a) Class name
b) Constructor ( )
c) _ init _
d) All the above

I-10) Which of the following tools provides a GUI in Python?

a) nunpy
b) scipy
c) tkinter
d) os

SECTION – II

II. *Answer/Write notes on any FIVE of the following.*

II-1) Explain range ( ) and exit ( ) function

II-2) Explain variable usage in python with example.

II-3) Explain raw and Unicode strings

II-4) Write a note on file paths in Python.

II-5) Write a note on dictionaries in Python.

II-6) List and explain Builtin-Functions on sets.

II-7) Explain multipath inheritance.

II-8) Write a note on matplotlib library.

SECTION – III

III. *Answer any THREE questions from the following:*

III-1) Explain console input and console output.

III-2) Write a Python program to demonstrate string operations.

III-3) Demonstrate polymorphism with example.

III-4) List and explain types of errors in Python.

III-5) Write a Python program to implement stock using list. Explain.

SECTION – IV

IV. Answer the following:

2X 10= 20 Marks

IV-1) a) Explain all looping structure available in Python with example. (1X10)

OR

b) i) Explain function definition in Python with an example.

5

ii) Explain : 1) Command line augments

- 2

2) Recursive functions with example

- 3

IV-2) a) Explain operations on list in python.

10

OR

b) i) Explain two types of charts with example.

ii) Write a note on exception handling in python.

(5+5)

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Fifth Semester B.C.A Degree Examinations
JANUARY/FEBRUARY 2024
(CBCS NEP Scheme)
PAPER: NBE 0220: STATISTICAL COMPUTING AND 'R' PROGRAMMING

[Time: 2 hrs]

[Max. Marks: 60

Instructions to Students:

1. The students should legibly write Section number along with question numbers.
2. The answer without Section number and question numbers will not be valued.
3. The question numbers should be legibly written with in margin only.
4. Normal calculator can be used.

SECTION – I

Select the most appropriate answer from the options provided: $10 \times 1 = 10$

I. 1) Which of the following is an assignment operator in R – programming.

a) $\leftarrow$ b) $=$

c) $<=$ d) $>=$

I. 2) Find The keyword of R from the given option

a) Repeat   b) Repeated

c) Main   d) Statistical

I. 3) The method used for reading tabular data from text file is

a) read.tabular ( )   b) read.table ( )

c) read.text ( )   d) read.tabulated ( )

I. 4) the method is used to read whole file in R is

a) read.complete ( )   b) read.full ( )

c) read.file ( )   d) read.whale ( )

I. 5) The Sum of observations divided by the total number of observations is _____

a) Median   b) Standard deviation

c) Mean   d) Mode

Contd..........

QP CODE 34522

I - 6) ___ is a basically the Set of all possible outcomes of any random Experim

    a) Random variable b) Mode

    c) Mean   d) probability distribution

I - 7) In hypothesis testing type II Error is denoted by

    a) Alpha b) Beta

    c) Gama d) Delta

I - 8) A testing is a statistical method that is used in marking a Statistical dec Experimental data is called _____

    a) Statistical test   b) Software test

    c) Hypothesis test   d) Model testing

I - 9) Which of the following function is used to create basic graphs of different t

    a) graph ( )   b) plot ( )

    c) create.graph ( ) d) create.plot ( )

I - 10) The function is used to create histograms in r – programing is

    a) histograms ( )

    c) create.hist ( )   b) hist ( )

                             d) sort ( )

SECTION – II

II. *Answer any FIVE of the following:*

II - 1) Write a note on matrix.

II - 2) Explain while loop in R.

II - 3) Write a note on reading CSV files in R.

II - 4) Explain list. file ( ) function in R.

II - 5) Define standard deviation, mode, variance.

II - 6) Differentiate null hypothesis and alternative hypothesis.

II - 7) List one – dimensional plotting graphs, explain any one.

II - 8) Write a short note on scatter plot.

SECTION – III

Answer any THREE of the following:

$3 \times 5 = 15$

1) Explain the features of R – programming.

2) Explain reading and writing JSON files in R – programming with an example.

3) Explain the process of descriptive analysis.

4) What is hypothesis testing? Explain the steps involved in hypothesis test.

5) Explain types of charts in R- programming

SECTION – IV

Answer the following:

$2 \times 10 = 20$

1) a) Mention different data structures used in R – programming. Explain any four with an example.

(10)

OR

b) i) How do you read and write XML files in R? Explain.

ii) Write a note on read.table ( ) function.

$(5+5)$

2) a) i) Explain binomial distributions with its functions.

ii) Differentiate covariance and correlation in R.

$(5+5)$

OR

b) i) Explain the parameters of hypothesis Test.

ii) Write a note on plot customization.

$(5+5)$

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Fifth Semester B.C.A Degree Examinations
Page No...1
JANUARY/FEBRUARY 2024
BCE 410: ADVANCED PROGRAMMING IN JAVA

Time: 3 hrs]
[Max. Marks: 80

Instruction to the Students:
1. *Answer any FIVE full questions*
2. *Students should attend at least one question form each unit.*

PART – A

1. a) Mention any two differences between an applet and an application.

   b) Explain the hierarchy of window classes in AWT.

   c) What is a Frame? Explain the Frame class constructor and methods in it.

   d) What is the difference between the constructors
   Color (int red, int green, int blue) and Color (int rgb value)? Explain with example.

   e) Write a Java program to display the message "Welcome to Advanced Java
   Programming" in the centre of a frame window. $(2 + 4 + 4 + 3 + 3)$

2. a) Write a note on the methods used to transform a graphical objects in Java Graphics
   2D.

   b) How do you create checkboxes and radio buttons in an user interface using AWT?
   Explain with an example.

   c) Design an user interface to add two numbers as below

Addition	
Num 1	[ ]
Num 2	[ ]
Sum	[ ]
[OK]	[EXIT]

   When [OK] button is pressed, the data entered in the first two
   text fields are validated and sum must be displayed in the third
   text field. The third text field should be made non editable. The
   application should be terminated when [EXIT] button is pressed.
   Use appropriate layout manager for the design of user
   interface.

   d) List any four types of layout managers available in Java. Explain any one.
   $(4 + 4 + 5 + 3)$

PART – B

3. a) Explain delegation event model in Java.

   b) With its methods and constrctor, explain Key Event class. Also explain the required
   listener interface to handle key events.

c) Write a Java Programm to handle mouse moved and mouse Dragged events. When mouse is moved its path should be traced with '*' and when mouse is dragged path should be traced with a straight line.

d) What is an Adapter class? List various Adatper classes available in Java. Give example to any one.

(3 + 5)

4. a) List any four differences between swing and AWT.

b) Write a note on model – view – controller in swing.

c) Write a Java program to design and user interface using swing for job application / student admission. Assume appropriate controls for designing. [Event handling not necessary]

d) Mention the swing controls appropriate for the following.
   i)   To input the name of a student
   ii) To select the qualification a student. (only one)
   iii) To display the contents a SQL table.
   iv) To key in the address of a person.

(4 + 4 +)

PART – C

5. a) Write methods in java to perform the following operations.
      i) To create a file   ii) to store text in a file
      iii) To delete a file   iv) to close a file object

b) Write a java program to read the contents of a text file.

c) Explain the JDBC architecture with the help of a neat block diagram.

d) Write a note on JDBC drivers.

6. a) How do you establish JDBC connection? Explain.

b) List various types of statement objects in JDBC with examples, explain any one type.

c) What is the difference between the methods execute query ( ) and execute update( ) Explain.

d) Write a java program to display the contents student table stored in any database (Oracle/MySQL/Access……). The structure of student table is student (id, name, date-of-birth, course, Sem)

(6 + 3 + 2)

PART – D

7. a) Explain the goals of collection framework.

b) Briefly describe various collection interface available in Java.

c) Write a simple program to demonstrate Array list operations. (any two operations)

d) Describe the naming convention in generics (type parameter)

e) List and explain the advantages of generics.

(4 + 4 + 3 + 2 + 3)

8. a) Write a program to demonstrate the use of generic constructors.

b) What is meant by Java Bean? Mention its advantages.

c) Explain the simple and indexed properties of Java Bean with example.

d) How do you create Jar files in Java? Explain the process with an example.

(4 + 4 + 4 + 4)

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