M J College,BHILAI
Half yearly Examination
Session-2017-18

B.C.A.(Part2)EXAMINATION

COMPUTER NETWORKING & INTERNET TECHNOLOGY

Time:ThreeHours   *MaximumMarks :50*

Section-'A'

1. Very short answer type questions. Answer in one or two lines.   (2 x10=20)

2. A protocol used in E-mail is ....

3. A device that is used to convert digital to analog and analog to digital is called ....

4. Full form of ARPANET is ....

5. UTP and STP are types of ....

6. Data flows in both direction not only one at a time in ....

7. In OSI model data security is provided by   layer.

8. Webpages are created in   language.

9. A protocol used for downloading or uploading files from remote machine is called.

10. www was given by ....

11. JavaScript was developed by ....

Section-'B'

A. Explain distributed processing.

B. Compare the OSI model and TCP/IP model.

C. Explain different types of transmission .Internet.

OR

D. What is FRAME? How these can be created in webpage?
E. Explain the various layers of OSI reference model.

OR

F. Explain Novell Netware , ARPANET and NSFNFT.

M J College,BHILAI
Half yearly Examination
Session-2017-18

B.C.A.(Part2)EXAMINATION

DATASTRUCTURE

Time: Three Hours   *MaximumMarks:50*

Note: Attempt   any   *two*   parts   from   each   question. All questions carry equal marks.

Unit –I

1. (a) Explain Data structures with example.

   (b) Explain different operations on data structures.

   (c) Explain any *two* data structures.

Unit –II

2. (a) Explain Bubble sort.

   (b) What do you mean by linear search?

   (c) What do you mean by Record? How is it different from array?

Unit –III

3. (a) Write an algorithm to search an element in a linked list.

   (b) What do you mean by Stack?   Explain primitive operations that can be performed on Stack.

   (c) What do you mean by Queue?

DBMS (ORACLE&SQL)

Time: Three Hours   *Maximum Marks:50*

Section-'A'

Very short answer type questions. Answer in one or two sentences.

(2x10=20)

1. What is DDL ?Give an example of one DDL statement in SQL.
2. Name any two commercial DBMS packages.
3. What does the cardinality ratio specify?
4. What is an alternate key ? Explain with an example.
5. Define Entity Integrity constraint.
6. What are aggregate functions?
7. What is meant by normalization of data?
8. Define multi valued dependency.
9. Write the syntax of drop command.
10. What is a cursor?

Section-'B'

1.What do you mean by a DBMS ? Explain the basic architecture of a DBMS. List any five examples of commercial DBMS packages.

OR

Explain the term data independence with an example.

2. Define first, second and third normal forms. Consider the universal relation R={A,B,C,D,E,F,G,H,I,J}and the set of functional dependencies F=$\{\{A,B\}\rightarrow\{C\},\{A\}\rightarrow\{D,E\}\{B\}\rightarrow\{F\},\{F\}\rightarrow\{G,H\},\{D\}\rightarrow\{I,J\}\}$

3. What is the key for R? Decompose R into 2NF then 3NF relations.

OR

4. .Define join dependencies and multi valued dependencies. Explain fourth and fifth normal forms with example. Construct an ER diagram for a car insurance company whose customers own one or more cars. Each car has associated with zero to any number of recorded accidents. Explain different symbols you use.

OR

5. Explain ER modeling of aggregation with a case study.

6. Explain what is join? Explain natural join ,equijoin ,left ,right outer join by giving example.

M J College,BHILAI
Half yearly Examination Session-2019-20BCA-II
LINUX

Time: Three Hours   *MaximumMarks:50*

Note: Attempt any *two* parts of each question .All questions carry equal marks.

1. (a) What is the function of kernel and shell in Linux OS?

   (b) How Linux is different from other operating system ? State *three* main features of Linux.

   (c) Give the layout of Linux System Architecture.

   (d) Explain the following commands:

      (i)   ls

      (ii)   mv

      (iii) grep

      (iv)   pwd

      (v)   chmod

2. (a) What are various modes of vi-editor? How does editor change from one mode to another ? Explain with diagram.

   (b) How to perform the following task in vi-editor?

      (i)   Open a file

      (ii)   Quit vi after saving content

      (iii) Quit vi without saving

      (iv)   Moving cur so up by one line

      (v)   Moving cur sort o*n* the line

      (vi)   Undo

      (vii) Insert text before cursor

      (viii) Replace single character under cursor

      (ix)   Change current word with new text

      (x)   Copy and paste

      All so identify the mode in which command works.

   (c) How is Emacs different from vi-editor? Explain Basic commands:

      (i)   find file

      (ii)   save buffer

      (iii) write named file

3. (a)   What are various types of shell ? Explain in brief.

     (b)   Explain the following environment variables with their syntax and use:

          (i)   PS1

          (ii)   PS2

          (iii) Setenv

          (iv) Path

          (v)   Home

     (c)   Write a shell script to perform mathematical operation (+, */)on any *two* numbers.

Time:Three Hours   *MaximumMarks:50*

Section - 'A'

1. Answer the following very short-answer-type questions in one or two sentences :   (2x10=20)

2. Define class and object.

3. What is polymorphism?

4. Can a constructor be overloaded? Justify.

5. What is meant by early & late binding?

6. Which of the following operators in C++ cannot be overloaded (a) ++   (b) : :   (c) +   (d) -

7. What is pure virtual function?

8. Write full form of MFC.

9. Write any three VC++ components.

10. What are the features of object-oriented programming?

11. Write any three access specifies of C++.

Section-'B'

1.What is a function overloading? Explain with an example.

OR

What are base & derived constructors called ?Explain.
2.What is an in line function? Give an example.

OR

Explain object type & attribute type.

3. What is a data type? Explain different data types in detail with examples.

OR

Discuss different types of inheritance with suitable example.
Write a program to swap two numbers

Time: Three Hours   *MaximumMarks:50*

Very short answer type questions .Answer in one or two sentences   (1*10=10)

1. What command is used to save the standard output in a file as well as display it on the terminal?

2. Write the command used to count just the number of lines contained in a file.

3. What command is used to remove file?

4. Mention the command used to remove the directory.

5. What command is used with Vi-editor to delete a single character?

6. Write the command which is used to create a Linux installation boot floppy.
7. How you can add Amit , an user, to your system?
8. How many primary partitions can exist in one drive?
9. In which directory can you store system user default files used for creating user directories.
10. What does FSF stand for?

    A. Is there away to erase all files in the current directory including all its sub-directory , using one command ?Explain.

OR

Explain some common shells. What are their indicators?
What do you mean by command sub situations ?Explain.
OR
Mention the features of Linux file system.
Write down the requirement of Hardware for Red Hat Linux.
OR
Explain with neat diagram about architecture of Linux.
 Explain the different file operators of Linux.

OR

Write a shell script that requests the user's age and then echoes it, along with suitable comment.

M J College, BHILAI
Half yearly Examination
Session-2019-20BCA-II
THEORETICAL FOUNDATION OF COMPUTER SCIENCE
DATASTRUCTURES

Time :Three Hours   *MaximumMarks:50*

Section-'A'
Answer the following very short-answer-type questions in one or two sentences

    i. Differentiate between data type and data structures.

    ii. Give examples of Linear and Non-Linear Data Structures.

    iii. How an array can be accessed using pointer?

    iv. What is the pre condition for binary search?

    v. How stack is different from queue?

    vi. Define linked list.

    vii. When insertion sort is efficient?

    viii. What technique merge sort makes use of?

    ix. Define the term forest in DS.

    x. What are the basic terms associated with tree.

Section-'B'

A. Explain different applications of data structures.

OR

List and explain different types of data structures with examples.

What are arrays ?How are they represented ?Also explain sparse matrix.

B. Explain the concept of linked list with diagram. What are the different type of linked list ?

OR

C. Evaluate following postfix expression:
    (i)   5,6,2,+,*12,4,/,-
    (ii)   -,*,5,+,6,2,/,12,4

D. Explain various types of operations in 5different Data Structures in detail.
OR

Calculate the address of X [0, 30] in a 2D array X [-20...20,10...35] stored in column major order in the main memory. Assume Base Address B=500.

E. Explain the binary search algorithm with an example

Session-2018-19 BCA-II
THEORETICAL FOUNDATION OF COMPUTERSCIENCE

DATA STRUCTURES

Time:Three Hours   *MaximumMarks:50*

Section-'A'

(Very short answer type questions. Answer in one or two lines.)   (1 x8=10)

1. What is data structure?

2. Write the different operations of Data structure.

3. What is Sorting?

4. What is linked list?

5. What is Stack?

6. What is Tree?

7. What is Record?

8. What is Array?
9. What is Merging?

(Section-'B')

A. Write an algorithm for inserting an element ITEM into the Kth position of a linear array of N elements.

   OR

Write an algorithm for performing binary search of an element in a linear array of N elements.

B. Write an algorithm for sorting an linear array of N elements in ascending order

C. Write an algorithm for performing linear search of an element ITEM in an array of N elements.
.
   D. Write an algorithm for selection sort
E. Write an algorithm for inserting in a Binary tree.

Time: Three Hours   *MaximumMarks:50*

DBMS(ORACLE,SQL)

Note: Attempt any *two* parts from each question .All questions carry equal marks.

1. (a) What are the advantages of DBMS over traditional file processing approach in handling a database?

   (b) Explain the following :

      (i) The role of data base administrator in a data-base management system.

      (ii) Data base languages.

   (c) Data Dictionary

2. Compare the three different database models Relational, Network and Hierarchical model.

3. (a) What is ER diagram ? Discuss various symbols use do construct ER diagram.

   (b) Explain the following: 10

      (i) Generalization

      (ii) Specialization

      (iii) Aggregation

4. Explain and discuss the rules to convert ER diagram into Relational Schema

Time:Three Hours   *MaximumMarks:50*

Note : Attempt any *two* parts from each Unit. All questions

Unit —I

1. (a)Write a CPP program to demonstrate the concept of object oriented programming.

    (b) What is procedural language ?What are the problems in procedural language and how it over comes in OOPs?

    (c) Write short notes on any *two* of the following:

    (i)   Object

    (ii) Inheritance

    (iii) Class

Unit —II

2. (a) What is inheritance ?Explain the different types of inheritance.

    (b) Write a CPP program to demonstrate construct or and destructor.

    (c) Write short notes on any *two* of the following:

    (i)   Overriding

    (ii) Access specified

    (iii) Operator overloading

Unit —III

3.(a)   Write   a CPP program to demonstrate virtual function.

    (b) Write a CPP to demonstrate inline function.

    (c) Write short notes on any *two* of the following:

    (i)   Arras and Pointer

    (ii) Loops and Decisions

    (iii) Structure

COMPUTERNETWORKANDINTERNETTECHNOLOGY

Time:ThreeHours   *MaximumMarks:50*

Note: Attempt any *two*   part   from   each   question.All questions carry equal marks.

1. (a) What is Computer Network ? Discuss various components of data communication.

(b) What is meant by topology ?Explain the topologies of the network.

   (c) Write short notes on the following:

      (i) Pulse code modulation

      (ii) Time division multiplexing

2. (a) Explain   ISO/OSI   reference   model   with   neat diagram.

(b) Compare and contrast between ISO-OSI models to that of TCP/IP reference model.

© Write short notes on the following:

      (i) Novell Netware

      (ii) NSFNET

3. (a) Explain the three data transmission modes in brief.

   (b) Define the terms:

      (i) Bridges

      (ii) Gateways

      (iii) Routers

      (iv) Switches

(c) What is Switching and what are the   different types of switching techniques?

   (d) Write short notes on the following:

      (i) Novell Net ware

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Time :Three Hours   *MaximumMarks:50*

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        (i)   Novell Netware

        (ii)   NSFNET

Time: Three Hours   *MaximumMarks:50*

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(b)   Compare and contrast between ISO-OSI models to that of TCP/IP reference model.

(c) Write short notes on the following:

   (i)   Novell Netware

   (ii)   NSFNET

2. (a)Explain distributed processing.

(b)   Compare the OSI model and TCP/IP model.

(c)   Explain different types of transmission. Internet.

3. (a)What is FRAME? How these can be created in webpage?

(b). Explain the various layers of OSI reference model.

(C) Explain Novell Netware, ARPANET and NSF NFT.

Time:Three Hours   *MaximumMarks:50*

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Time : Three Hours   *MaximumMarks:50*

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    2. Explain the three data transmission modes in brief.

    3. Define the terms:

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        4. What is Switching and what are the different types of switching techniques?

        (i)   Explain distributed processing.

        (ii)   Compare the OSI model and TCP/IP model.

        (iii) Explain different types of transmission. Internet.
    5. What is FRAME? How these can be created in webpage?
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    7. Explain Novell Netware, ARPANET and NSF NFT.

M J College,BHILAI
Half yearly Examination
Session-2015-16BCA-II
THEORETICAL FOUNDATION OF COMPUTER SCIENCE

DATA STRUCTURES

Time:Three Hours   *MaximumMarks:50*

1. What is Array?

2. What is Merging

3. Explain different applications of data structures.

4. List and explain different types of data structures with examples.
5.What are arrays? How are they represented ?Also explain sparse matrix.

6. Explain the concept of linked list with diagram. What are the different type of linked list?

7. Write an algorithm for inserting an element ITEM into the Kth position of a linear array of N elements.

   OR

Write an algorithm for performing binary search of an element in a linear array of N elements.

8. Write an algorithm for selection sort

9. Write an algorithm for inserting in a Binary tree.

10.   Write the different operations of Data structure
     OR

11.   What is Sorting? What is linked list?

M J College,BHILAI
Half yearly Examination
Session-2016-17 BCA-II
THEORETICAL FOUNDATION OF COMPUTER SCIENCE

DATASTRUCTURES

Time:Three Hours   *MaximumMarks:50*

1. What is data structure?

2. Write the different operations of Data structure.

3. Write an algorithm for performing binary search of an element in a linear array of N elements.

4. Write an algorithm for sorting an linear array of N elements in ascending order

5. What is Stack? What is Tree?

   OR

6. Explain different applications of data structures.

7. List and explain different types of data structures with examples.

8. What is merging?

10. Write an algorithm for performing binary search of an element in a linear array of N elements.

   OR

11. Write an algorithm for inserting an element ITEM into the Kth position of a linear array of N elements.

Time: Three Hours   *MaximumMarks:50*

1. What is inheritance?Explain the different types of inheritance.

2. Write a CPP program to demonstrate construct or and destructor.

3. Write short notes on any *two* of the following:

    1. Overriding

    2. Access specified

    3. Operator overloading

4. Define class and object.

5. What is polymorphism?

6. Can a constructor be overloaded? Justify.

7. What is meant by early & late binding?

8. Which of the following operators in C++ cannot be overloaded (a) ++   (b) : : (c) + (d) -

9. What are the features of object-oriented programming?

10.   Write any three access specifies of C++.

              or

11.   Discuss different types of inheritance with suitable example.

12.   Write a program to swap two numbers

Time:Three Hours   *MaximumMarks:50*

1. What is a data type? Explain different data types in detail with examples.
2. Discuss different types of inheritance with suitable example.
3. Write a program to swap two numbers
4. Write any three VC++ components.

5. Define class and object.
6. What is polymorphism?
7. Can a constructor be overloaded? Justify.
8. What is meant by early & late binding?

9. Write short notes on any *two* of the following:

    o Overriding

    o Access specified

    o Operator overloading

10. What is a function overloading? Explain with an example.

 OR

11. What are base & derived constructors called? Explain.

Time: Three Hours   *MaximumMarks:50*

1. What is a data type? Explain different data types in detail with examples.

2. Discuss different types of inheritance with suitable example.

3. Write a CPP program to demonstrate virtual function.

4. Write a CPP to demonstrate in line function.

5. Write short notes on any *two* of the following:

   o Arrays and Pointer

   ▪ Loops and Decisions

   o Structure

6. Write a program to swap two numbers

7. Write any three VC++ components.

8. Define class and object.

9. What is polymorphism?

10.   Can a constructor be overloaded? Justify.

11.   What is meant by early & late binding?

12.   Write short notes on any *two* of the following:

    o Overriding

    o Access specified

    o Operator overloading

       or

13.   What is a function overloading? Explain with an example.

Time: Three Hours   *MaximumMarks:50*

1. What is the function of kernel and shell in Linux OS?

2. How Linux is different For mother operating system ? State *three* main features of Linux.

3. Give the layout of Linux System Architecture.

4. Explain the following commands:

   (i)   ls

   (ii)   mv

   (iii) grep

   (iv)   pwd

   (v)   chmod

5. What are various modes of vi editor ? How does editor change from one mode to another ? Explain with diagram.

6. How to perform the following task in vi-editor?

   (vi)   Open a file

   (vii)   Quit vi after saving content

   (viii) Quit vi with out saving

   (ix)   Moving cursor up by one line

   (x)   Moving cursor to *n* th line

   (xi)   Undo

   (xii)   Insert text before cursor

   (xiii) Replace single character under cursor

   (xiv)   Change current word with new text

   (xv)   Copy and paste

   (xvi)   find file

7. What are various types of shell? Explain in brief.

8. Write the command used to count just the number of lines contained in a file.

9. What command is used to remove file?

10. Mention the command used to remove the directory.

        OR

11. What command is used with Vi editor to delete a single character?

Time:Three Hours   *MaximumMarks:50*

1. What command is used to save the standard output in a file as well as display it on the terminal?

2. Write the command used to count just the number of lines contained in a file.

3. What command is used to remove file?

4. Mention the command used to remove the directory.

5. What command is used with Vi editor to delete a single character?

6.   Write a shell script that requests the user's age and then echoes it, along with suitable comment.

7. How is Macs different from vi-editor? Explain Basic commands:

    i. find file

    ii. save buffer

    iii. write named file

8. What does FSF stand for?

9. Is there away to erase all files in the current directory including all its sub-directory , using one command ?Explain.

10. Explain the following commands:

    i. ls

    ii. mv

    iii. grep

    iv. pwd

    v. chmod

    or

10. Explain with neat diagram about architecture of Linux.

Time :Three Hours   *MaximumMarks:50*

1. Write the command used to count just the number of lines contained in a file.

2. What command is used to remove file?

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6. How is Emacs different from vi-editor ?Explain Basic commands:

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      ii. save buffer

7. write named file Is there away to erase all files in the current directory including all its sub-directory, using one command ?Explain.

OR

   Explain some common shells. What are their indicators? What do you mean by command substitutions? Explain.

OR

   Mention the features of Linux file system.

8. Write down the requirement of Hardware for Red Hat Linux.

OR

   Explain with neat diagram about architecture of Linux.

9. Explain with neat diagram about architecture of Linux.

11.Explain the following commands:

      i. ls

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Time :Three Hours   *MaximumMarks:50*

1. What are the advantages of DBMS over traditional file processing approach in handling a database?

2. Explain the following :

    i. The role of data base administrator in a database management system.

    ii. Data base languages.

3. Data Dictionary

4. Compare   the three different database models Relational, Network and Hierarchical model.

5. What is ER diagram ? Discuss various symbols usedto construct ER diagram.

6. Explain the following: 10

7. Generalization

8. Specialization

9. Aggregation

10.   Explain and discuss the rules to convert ER diagram in to Relational Schema

             or

11. What is DDL? Give an example of one DDL statement in SQL.

12. Name any two commercial DBMS packages.

Time:Three Hours   *MaximumMarks:50*

1) What is DDL? Give an example of one DDL statement in SQL.

2) Name any two commercial DBMS packages.

3) What does the cardinality ratio specify?

4) What is an alternate key? Explain with an example.

5) Define Entity Integrity constraint.

6) What are aggregate functions?

7) What is meant by normalization of data?

8) Define multi valued dependency.

   OR

9) Explain ER modeling of aggregation with a case study?

10)   Write the syntax of drop command.

11)   Define first, second and third normal forms. Consider the universal relation   R={A,B,C,D,E,F,G,H,I,J} and the set of functional dependencies $F = \{ \{A, B\} \rightarrow \{C\} , \{A\} \rightarrow \{D, E\} , \{B\} \rightarrow \{F\} , \{F\} \rightarrow \{G, H\} , \{D\} \rightarrow \{I, J\} \}$

                  OR

12)   What is the key for R? Decompose R into 2NF then 3NF relations.

Time: Three Hours   *MaximumMarks:50*

1. What are the advantages of DBMS over traditional file processing approach in handling a database?
   Explain the term data independence with an example

2. Construct an E-R diagram for a car insurance company whose customers own one or more cars. Each car has associated with it zero to any number of recorded accidents. Explain different symbols you use.

   OR

3. Explain ER modeling of aggregation with a case study.

4. Explain what is join? Explain natural join, equi join, left, right outer join by giving example.

5. What is an alternate key? Explain with an example.

6. Define Entity Integrity constraint.

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8. What is meant by normalization of data?

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10.   What is the key for R? Decompose R into 2NF then 3NF relations.