Exam. Code : 107204
Subject Code : 2069

BCA Semester—IV

DATA STRUCTURE & FILE PROCESSING

Paper–I

Time Allowed—3 Hours]   [Maximum Marks—75

Note : Attempt any **five** questions. All questions carry equal marks.

1. Discuss the features of following data structures with examples :

   (a) Queue   7.5

   (b) Trees.   7.5

2. (a) Explain the insertion and deletion operations on a stack.   7.5

   (b) Compare the features of linked list and binary trees.   7.5

3. Discuss the Breadth first search algorithm for graph using an example.   15

4. (a) Compare quick sort algorithm with bubble sort algorithm.   10

   (b) Discuss the linear search technique in detail. 5

5. Discuss the following file organization :

   (a) Indexed   7.5

   (b) Sequential.   7.5

3091(2517)/STB-14037   (Contd.)

6. (a) Illustrate binary search for searching '6' in the following list :

2   4   6   8   10

7.5

(b) Compare the concept of master and transaction files.

7.5

7. What is space time complexity trade off ? Explain with examples.

15

8. Write notes on the following :

(a) Compaction

7.5

(b) Master and transaction files.

7.5

Exam. Code : 107204
Subject Code : 2070

BCA Semester—IV

INFORMATION SYSTEMS

Paper–II

Time Allowed—3 Hours]   [Maximum Marks—75

Note : (1) Attempt **five** questions in all selecting at least **one** from each of the Units I, II and III.

(2) All questions carry equal marks.

UNIT—I

1. (a) Define Information. Why is it important ? Explain various sources of information in detail.   2+2+4

(b) How information is converted into computer readable form ? Explain.   7

2. (a) Explain various ways of capturing information along with their limitations.   8

(b) Write briefly about on-line information access through examples.   7

UNIT—II

3. (a) When a system is called an information system ? Explain through example the various components of an information system.   2+6

(b) Which are the latest Hardware trends for information systems ? Explain.   7

3092(2517)/STB-14038   (Contd.)

4. (a) Explain latest software trends for information systems with examples. 8

(b) How do you categorize the information systems ? Explain. 7

5. Demonstrate Development life cycle of any information system of your choice with suitable inputs and outputs. 15

UNIT—III

6. (a) Design Transaction Processing System by elaborating its each operation in detail. 8

(b) How Marketing Systems are developed to promote sales and purchase ? Explain. 7

7. Explain various tasks carried out to develop office automation system. Take example to justify. 15

8. How information systems can be better understood through their case study in practical life ? Explain through example of your choice. 15

Exam. Code : 107204
Subject Code : 2072

BCA Semester—IV

SYSTEM SOFTWARE

Paper—IV

Time Allowed—3 Hours]   [Maximum Marks—75

Note:— Attempt any **FIVE** questions. All questions carry
    equal marks.

1. Explain the working of following phases of compilers :

    (a) Syntax Analysis   7½

    (b) Code optimization.   7½

2. (a) Differentiate between Compiler and Assembler. 7½

    (b) Discuss key functions of loader.   7½

3. (a) Differentiate between pass one and pass two
        assembler.   7½

    (b) Why macros are needed in assembly process ?
        Explain.   7½

4. Discuss different data structures used in two pass assembler.
    15

5. (a) What is lexical analysis ? How it is different from parsing ? Explain. 7½

(b) What is meant by semantic error ? At which phase of compilation, semantic error is caught ? Explain. 7½

6. (a) What is recursive macro explain ? Explain macro expansion by taking suitable example. 7½

(b) What are the tasks performed in optimization ? Explain. 7½

7. (a) What is meant by LL Parser ? Explain left recursion in LL parsing process. 7½

(b) Differentiate between Top Down and Bottom Up Parser. 7½

8. Explain the following :

(a) Dynamic Linking 7½

(b) Relocation Procedure. 7½

9-5-17

B.C.A. 4ᵗʰ Semester

ENVIRONMENTAL STUDIES—II

Paper—V

Time Allowed—Three Hours]   [Maximum Marks—50

Note :— **Section-A (15 marks) :** It consists of **FIVE** short answer type questions. Candidates are required to attempt any **THREE** questions, each carrying **5** marks. Answer to any of the questions should not exceed **2** pages.

Section-B (20 marks) : It consists of **FOUR** essay type questions. Candidates are required to attempt any **TWO** questions, each carrying **10** marks. Answer to any of the questions should not exceed **4** pages.

Section-C (15 marks) : It consists of **TWO** questions. Candidates are required to attempt **ONE** question which carries **15** marks. Answer to the question should not exceed **5** pages.

SECTION—A

1. What are Biosphere Reserves ?

2. Give an account of indoor air pollution ?

3095(2517)/STB-17009   1   (Contd.)

3. Why do earthquakes occur ?

4. What are the objectives and elements of value education ?

5. What is meant by Civil Defense ? Explain its aims and objectives.

SECTION—B

6. Comment upon the Indian biodiversity with special reference as megadiversity nation.

7. Write short notes on :—
   (a) Biomagnification
   (b) Nuclear pollution
   (c) Population explosion
   (d) Traffic signs

8. What do you understand by disasters ? Discuss the significance of Disaster management.

9. How does Information Technology play role in dissemination of Environmental information ?

SECTION—C

10. Explain in detail about the threats to biodiversity. How can the biodiversity be conserved ?

11. What do you understand by Solid waste management ? Discuss in detail the ways of managing the solid waste.