Exam. Code : 107204
Subject Code : 1750

Bachelor of Computer Application (BCA) 4th Semester
DATA STRUCTURE AND FILE PROCESSING
Paper—I

Time Allowed—3 Hours]   [Maximum Marks—75

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

1. Name and explain in brief different types of Data Structures.
    Explain the significance of each.

2. How is the complexity of an algorithm calculated ? Write
    note on Time Space Trade Off in complexity.

3. Explain the algorithm for any one of the following and
    then execute the algorithm through an example.
    (a) Selection Sort
    (b) Quick Sort.

4. Differentiate between linear and binary search techniques.
    Explain with examples. Write an algorithm to perform
    linear search on a list of N numbers.

5. (a) What do you mean by Circular Queue ? How is it
        implemented in the memory ? Explain the process
        of insertion of a new element in Circular Queue.

    (b) Convert the following Infix notation into Postfix
        notation using stack :
        $((A*B) + D)/((E–F)*G)$

6. (a) Define the term Hashing. Explain the techniques used to resolve collision.

(b) Explain Indexed file organization. Write down the advantages and disadvantages of Indexed file organization.

7. (a) Explain the following terms associated with file structure :

(1) Master File

(2) Transaction File

(3) Report File

(4) Back-up File

(5) Work File

(b) Explain Index Sequential Files. Write down the advantages and disadvantages of this file Organization.

8. What is File Organization ? Explain different concepts of file organization with relevant examples.

Sr. No. 3096

Exam Code: 107204
Subject Code: 7495

Bachelor of Computer Application (BCA) - 4th Sem.
(Old Syll.2018)
(2519)
Paper: V
Environmental Studies-II

Time allowed: 3 hrs.   Max. Marks: 50

Section A (15 Marks): It consists of five short answer type questions. Candidates are required to attempt any **three** questions, each question carrying **5** marks. Answer to any of the questions should not exceed two pages.

Section B (20 Marks): It consists of four essay type questions. Candidates are required to attempt **two** questions, each question carrying **10** marks. Answer to any of the question should not exceed four pages.

Section C (15 Marks): It consists of two questions. Candidates are required to attempt one question only which carries **15** marks. Answer to the question should not exceed five pages.

Section-A

1. Write a brief note on biodiversity of India.
2. Differentiate between genetic diversity and species diversity.
3. Give the role of financial and support service institutions in entrepreneurship development?
4. What do you understand by term 'hot-spots of biodiversity'?
5. Write a note on endangered species of India.

Section-B

6. What are nuclear hazards? Mention a case study related to it.
7. Write a note on different measures adopted at national and global levels to conserve biodiversity.
8. Give a detailed account on Soil Pollution
9. Give role of information technology in environment and human health.

Section-C

10. Give definition, causes, effects and control measures of Water Pollution.
11. Give a detailed note on road safety rules and regulations. Mention various steps towards the first aid to road accident victims.

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Exam. Code : 107204
Subject Code :   1751

Bachelor of Computer Application (B.C.A.) 4ᵗʰ Semester
INFORMATION SYSTEMS
Paper—II

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— (1) Attempt **five** questions in all. All questions carry equal marks.

(2) Use of Non-programmable and Non-storage calculator is allowed.

1. (a) What is the significance of information ? Explain the capturing of information in detail.   8

(b) How information is extracted from various sources ? Explain.   7

2. (a) What are the benefits of converting information into Computer readable form ? Explain in detail.   8

(b) How information is captured On-line ? Explain. 7

3. (a) Explain various components of a system. Examplify.   8

(b) Explain various technologies used to design Information Systems.   7

4. (a) What is Information System ? Why are they important ?   8

(b) Explain some latest trends in Hardware for Information.   7

5. (a) What is development life cycle ? How Information Systems are designed through it ? 8

   (b) Which are the available software trends to design information systems ? 7

6. (a) Design Transaction Processing System along with their operations. 8

   (b) How decision support systems are implemented ? Examplify. 7

7. (a) How Inventory Control Systems are applied to manage the Organization Inventory ? Explain. 8

   (b) Write a note on Accounting Information Systems. 7

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

Exam. Code : 107204
Subject Code : 1753

Bachelor of Computer Application (BCA) 4th Semester
SYSTEM SOFTWARE
Paper—IV

Time Allowed—3 Hours] [Maximum Marks—75

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

1. (a) Explain the role of different components of Compiler. 10

   (b) How recursive macro expansion takes place in compilation process ? Explain by taking an example. 5

2. (a) Differentiate between Interpreter and Assembler. 10

   (b) Discuss key functions of Linker. 5

3. (a) Differentiate between the design issues of One pass and Two pass assembler. 10

   (b) What are different tables used in second pass of two pass assembler ? Explain by taking suitable example. 5

4. How macros are useful ? Discuss the procedure for concatenation of macro parameters using pseudocode. 15

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5. (a) What are Tokens ? How tokens are useful in lexical analysis ? Explain. 10

   (b) What is semantic error ? Which phase of compilation catches the semantic errors and how they are handled ? Explain. 5

6. Discuss the following in detail :—

   (a) Cross Compiler 7.5

   (b) Shift Reduce Parsing. 7.5

7. (a) What is left recursion ? How it affects the parsing process ? Explain. 10

   (b) What is meant by storage management optimization ? 5

8. Explain the following concepts :

   (a) Relocation 7.5

   (b) Bootstrapping. 7.5