

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 :

$((A*B) + D)/((E-F)*G)$

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(Contd.)

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.

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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. Exemplify. 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 ? Exemplify. 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

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Bachelor of Computer Application (BCA) 4th Semester

INTERNET APPLICATIONS

Paper—III

Time Allowed—3 Hours]

[Maximum Marks—75

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

1. What is Internet ? What are the services offered by Internet ?
2. What information do you need to hook to Internet using windows dial up networking ? Write the steps to do it.
3. What are the features available in Outlook Express to manage emails ?
4. What is Telnet ? How will you use it to connect to another machine ?
5. Write the salient features of DHTML.
6. What is a Web directory ? How is it different from search engine ?
7. How will you differentiate between extranet and intranet ?
8. Write short notes on any **three** of the following :—
 - (a) IP Addressing
 - (b) HTML
 - (c) Search Engine
 - (d) TCP/IP.

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**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

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

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Subject Code : 1754

**Bachelor of Computer Application (BCA) 4th Semester
ENVIRONMENTAL STUDIES
Paper—VII**

Time Allowed—3 Hours]

[Maximum Marks—75

Note :— Part A (25 marks) : Attempt any **five** questions out of **seven**. Each question carries **5** marks. Answer to each question should not exceed **2** pages.

Part B (50 marks) : Attempt any **five** questions out of **eight**. Each question carries **10** marks. Answer to each question should not exceed **5** pages.

PART—A

1. Give the effects of timber extraction.
2. What are the consequences of modern agriculture ?
3. Write note on 'India as a mega-diversity nation'.
4. Write a brief note on 'Thermal pollution'.
5. Discuss the hot spots of biodiversity.
6. Write a note on Forest Conservation Act.
7. What is Value Education ? Explain.

PART—B

8. What is HIV/AIDS ? Explain in detail.
9. Explain the term 'Environmental Ethics'. What are the issues related to it and its possible solutions ?

10. Explain the causes, effects and remedial measures of Soil Pollution.
11. What is Solid Waste Management ? Give causes, effects and control measures of urban and industrial waste.
12. Give a detailed note on renewable and non-renewable energy resources.
13. Write a note on endangered and endemic species of India.
14. Give the biogeographical classification of India.
15. Give the role of information technology in Environment and Human health.