Exam Code: 107204 **Paper Code: 4258**

Programme: Bachelor of Computer Applications

Semester: IV

Course Title: Data Structures

Course Code: BCAL-4111

Time Allowed: 3 Hours **Max Marks: 60**

Note: Attempt five questions in all, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries equal 12 marks.

Section A

Q1: What do you mean by complexity of an algorithm? How can you measure it? (12)

Q2: a) Write Bubble sort algorithm along with its complexity. (6)

b) Using Binary search, find the location of an element 55.
99, 11, 33, 88, 22, 55, 77 (6)

Section B

Q3: What is Hashing? How can you resolve collisions in it? (12)

Q4:a) Explain types of Linked list. (8)

b) Write advantages of linked list over array. (4)

Section C

Q5 : Explain the procedures with examples

a) Convert an arithmetic expression from infix notation to postfix notation

b) Evaluation of postfix expression. (12)

Q6: a) Explain the structure of queue. (4)

b) How can you represent priority queue in memory? (8)

Section D

Q7: Explain traversals of binary tree with examples. (12)

Q8: Write a note on the following (3*4 = 12)

a) DFS Vs BFS
b) Adjacency matrix
c) Structure of Path matrix.

Exam Code: 107204 **Paper Code: 4259**
(60)

Programme: Bachelor of Computer Applications
Semester-IV

Course Title: Information Systems

Course Code: BCAL-4112

Time Allowed: 3 Hours **Max Marks: 60**

Note: Attempt five questions selecting at least one from each section, fifth question may be attempted from any section. All questions carry equal marks (12).

SECTION A

1. Why is Information important for an organization? Explain characteristics of information. (12)
2. Discuss Online access and Capture of information. (12)

SECTION B

3. Explain Rapid Application Development model of SDLC. (12)
4. What are various types of Systems. Explain with Examples. (12)

SECTION C

5. What are the Characteristics and Components of Decision Support Systems? (12)
6. What are the Objectives of MIS. Explain its Benefits and Limitations also. (12)

SECTION D

7. Compare and Contrast Transaction Processing System and Decision Support System. (12)
8. Discuss the Case Study of Marketing Information System. (12)

Exam Code: 107204 **Paper Code: 4260**

Programme: Bachelor of Computer Applications

Semester IV

Course Title: Internet Applications

Course Code: BCAL-4113

Time Allowed: 3 Hours **Max. Marks: 60**

Note: Attempt five questions in all, selecting at least one question from each section Fifth question may be attempted from any section. Each question carries 12 marks.

Section A

1. What is Internet? How is it different from ordinary network? How does the Internet work?
2. What is Search Engine? Explain the components and working of Search Engine?

Section B

3. What do you mean by list in HTML? What are the different types of lists available in HTML?
4. What is a table? Perform the following:
   a. Create a table with 3 rows and 2 columns and align it to the center.
   b. Now add the background image to this table.
   c. Create a table as shown below:

<table>
<tr><td colspan="2">1</td><td>2</td><td rowspan="3">3</td></tr>
<tr><td>4</td><td>5</td><td rowspan="2">6</td></tr>
<tr><td>6</td><td>7</td></tr>
<tr><td>8</td><td colspan="2">9</td><td></td></tr>
</table>

Section C

5. What is CSS? Discuss various parts of CSS rule? Explain various types of stylesheet available in CSS?
6. Write a note on:
   a. Background properties in CSS
   b. z-index
   c. float
   d. clear

Section D

7. What is a WordPress? How can we manage pages in a WordPress?
8. a. Explain the role of Google analytics in evaluating the performance of a website?
   b. Write a note on Google maps?

Exam Code: 107204 **Paper Code: 4261**

Programme: Bachelor of Computer Applications

Semester IV

Course Title: Computer Architecture

Course Code: BCAL-4114

Time Allowed: 3 Hours **Max. Marks: 60**

Note: Attempt five questions in all, selecting at least one question from each section Fifth question may be attempted from any section. Each question carries 12 marks.

SECTION-A

1. What are various types of Timing Signals? Discuss instruction cycle with example. **(12)**
2. What is register transfer language? Briefly explain role of various registers. **(12)**

SECTION-B

3. Explain microprogrammed control unit along with advantages and disadvantages. **(12)**
4. Explain features of General register organization and Stack organization of CPU. **(12)**

SECTION-C

5. What is virtual memory? Explain role of paging in implementation of virtual memory. **(12)**
6. Why memory hierarchy organization is required in computer? Draw hierarchy map and discuss various memories used. **(12)**

SECTION-D

7. Write short notes on:
   a.) I/O interface b.) Program Interrupt **(2x6=12)**
8. Explain concepts of Parallel Processing and Vector Processing. **(12)**