**TABLE OF SPECIFICATIONS FOR EXAM QUESTIONS**

**University of Liberal Arts Bangladesh**

**Department: Computer Science and Engineering (CSE)**

**Mid-Term Examinations, Semester: Spring 2019**

**Program: B.Sc. in CSE**

**Course Code: CSE305 Course Title: Algorithm Credit Hr: 3**

**Time: 1Hour Total Marks: 20**

**Name & Designation of the Examiner: Mohammad Shahriar Rahman, PhD Associate Professor**

**Learning Outcomes (CO):**

|  |
| --- |
| 1. **Describe** the objective of design and analysis of algorithms |
| 1. **Explain** terms related to important algorithm design techniques and basic algorithms |
| 1. **Understand** a practical problem, **apply** techniques and appropriate data structures to design and implement algorithms to solve the problem. |
| 1. **Analyze** performance and resource requirements of various algorithms. |
| 1. **Design and develop** algorithmic solutions to real-life problems. |

***Levels in Bloom’s Cognitive Domain:***

***C1: Remember C2: Understand C3: Apply C4: Analyze C5: Evaluate C6: Create***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Question No.** | **Learning Outcomes (CO)** | **Level in Bloom’s Cognitive Domain along with Allocation of Marks** | | | | | |
|  |  | **C1** | **C2** | **C3** | **C4** | **C5** | **C6** |
| 1 | 3 |  |  | 5 |  |  |  |
| 2 | 1 | 5 |  |  |  |  |  |
| 3 | 2 |  | 5 |  |  |  |  |
| 4 | 2 |  | 5 |  |  |  |  |
| **Total Allocation of Marks** | **20** | 5 | 10 | 5 |  |  |  |
|  |  |  |  |  |  |  |  |
| **Question No.** |  | **Learning Outcome** | | | | | |
|  |  | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |  |
| 1 |  |  |  | 5 |  |  |  |
| 2 |  | 5 |  |  |  |  |  |
| 3 |  |  | 5 |  |  |  |  |
| 4 |  |  | 5 |  |  |  |  |
| **Total Allocation of Marks** | **20** | 5 | 10 | 5 |  |  |  |

**Signature of the Examiner Date:**

**Department of Computer Science and Engineering**

**University of Liberal Arts Bangladesh**

**Mid-Term Examination (Spring 2019)**

**Course: Algorithm (CSE 305)**

**Section: 1 --- Duration: 1 Hour**

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**PLEASE ANSWER ALL QUESTIONS. Total 20 Marks**

**QUESTION 1**

Construct a Huffman tree based on the frequencies of the characters of this message: “Messi is a genius”. Find the Huffman code for each of the characters. **(5 Marks)**

**QUESTION 2**

What are the parameters we analyze about algorithms? Briefly discuss them. **(5 Marks)**

**QUESTION 3**

i) Discuss the idea of Greedy method.

ii) Compare Direct addressing with Hashing

**(5 Marks)**

**QUESTION 4**

What is the “Big Oh” of the following code-block? Explain your answer for both the cases: when m=n and m≠n.

for (int i = 1; i <=m; i += c)

{

print “welcome to ULAB”;

}

for (int i = 1; i <=n; i += c)

{

print “welcome to cse 305”;

} **(5 Marks)**

**\*\*END OF QUESTIONS\*\***