Rangamati Science and Technology University

Department of Computer Science and Engineering

2nd Year 2nd Semester B.Sc. (Engg.) Midterm-I (2021)

Course Code: CSE-2201; **Session:** 2019-20

Course Title: Database Management System

Time: 1 Hour **Marks:** 15

NB: 1. **Answer all questions.**
2. Figures in the right margin indicate marks.
3. All parts of a question must be answered serially.

1 (a) Define RDBMS. Explain why it is required? **2**

(b) Write down the differences between SQL and NoSQL. **2**

(c) Differentiate between i) Super Key and ii) Candidate Key with appropriate example. **2**

(d) Explain the following operation using mysql with proper example: **3**
- i) Table creation
- ii) Tuple Entry
- iii) Database Deletion

(e) Explain the following relational algebra operations with proper example: **6**
- i) Join
- ii) Cartesian
- iii) Project
- iv) Select

Rangamati Science and Technology University

Department of Computer Science and Engineering

2^{nd} Year 2^{nd} Semester B.Sc. (Engg.) Midterm-I , 2021

Course Code: CSE-2203; **Session:** 2019-20

Course Title: Computer Architecture and Organization

Time: 1 Hour **Marks:** 15

1	(a)	Describe major components of a CPU.	5
	(b)	Explain why cache memory is required and what will be the consequences if you do not use cache memory while designing computer organization.	3
	(c)	Write down the functions of the following registers: i)MBR ii) MAR iii) PC iv) IR v) IBR vi) AC	3
	(d)	Write short notes on- i) 8086 ii) 8088 iii) Intel Pentium Pro iv) Core i7	4

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Rangamati Science and Technology University

2nd Year 2nd Semester Mid Term -01 Examination-2021 Session – 2019-2020

Department of Computer Science and Engineering

Course Title: Design and Analysis of Algorithm **Course Code: CSE-2204**

Time: 1 Hour Marks: 15

1) a) Define algorithm. 01

b) What is Complexity. Explain Different types of complexity analysis. 03

2) a) Write down the pseudocode algorithm for Binary Search. 03

b) Given the unsorted number sequence as following: 04
12, 15, 86, 02, 09, 10, 05
Sort the above number sequence using Insertion sort algorithm.

c) Calculate the running time and space complexity of Insertion sort algorithm. 04

Rangamati Science and Technology University
Department of Computer Science and Engineering
2nd Year 2nd Semester B.Sc. (Engg.) Midterm-1: - 2021
Session: 2019-2020

Course Title: Microprocessor and Assembly Language **Course Code: CSE-2206**

Time: 1 hr **Full Marks: 15**

[Answer all the questions. Figures in the right-hand margin indicate full marks.]

1.	Define Microprocessor and explain the main tasks of a microprocessor.	3
2.	State Moore's Law. Draw the Basic structure of a computer.	4
3.	Briefly describe memory organization in memory system.	3
4.	Define Bus. Illustrate the buses with brief discussion.	5

Rangamati Science and Technology University
Department of Computer Science and Engineering
2nd Year 1st Semester BSc (Engg.) Mid Term-1 Examination, 2021
Session: 2019-2020

Course Title: Probability and Statistical Analysis **Course Code: Stat-2209**

Time:1Hour **Full Marks: 15**

[N.B. Answer any 3(Three) questions. All questions are of equal value.]

1. a) Define the following term with examples 4
(i) Random Experiment; (ii) Sample Space; (iii) Complementary event; (iv) Independence events; (v) Mutually exclusive event.
b) Distinguish between simple events and compound event 1

2. a) Use a tree diagram to find the sample space for the gender of three children in a family. 2
b) In a sample of 50 people, 21 had type O blood, 22 had type A blood, 5 had type B blood, and 2 had type AB blood. Set up a frequency distribution and find the following probabilities. i) A person has type O blood. ii) A person has type A or type B blood. iii) A person has neither type A nor type O blood. iv) A person does not have type AB blood. 3

3. a) Define classical probability with examples 1
b) In a class of 100 students 90 took statistics and 80 took mathematics and 75 took both courses. A student is selected at random from this class. 4
(1) What is the probability that the selected student took,
(i) At least one course; (ii) Only one course (iii) only mathematics?
(2)It is given that the selected student did not take statistics, what is the probability that he (i) took mathematics and (ii) did not take mathematics?

4. a) State Bayes theorem. 1
b) M1 Produces 55% of the output in a factory machine, and M_2 produces the rest. 0.1% output of machine M_1 is defective and 0.2% of the output of machine M_2 is defective. If an item is selected at random from a day's output and is found to be defective, what is the probability that the defective item was produced by machine M_2? 4

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