**Bahria University, Islamabad Campus**

Department of Computer Sciences

Mid-Term Examination

Class/Section: BSCS(4A+4B)

**(Spring 2021 Semester)**

**Paper Type: Descriptive**

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| Course: | **Database Management Systems** | Date: 17-05-21 |
| Course Code: | CSC-220 | Time: 1500 to 1630 Hrs |
| Faculty’s Name: | Dr. Q. Abbas/Dr. M. Imran | Max Marks: 20 |
| Time Allowed: | 1.5 Hours | Total Pages: 2 (including this) |

**INSTRUCTIONS:**

1. All questions are compulsory.
2. There are total three questions.
3. Use blue, black or blue-black ink only. Do NOT use lead pencil especially.

**Malik Zohaib Mustafa 01-134192-030 BSCS-4B**

**Question#1:**

Consider the below scenario and identify the entities and their relationships and then draw and ER diagram and then its physical design:

*Consider the following environment of a university. There are academic departments. Each department is identified by a 4 letter code, and has a name, a chairperson, an office and a telephone extension. Each department offers a set of courses. Each course is identified by the department code and a 3 digit number, and has a title and number of units; each course may require any number of prerequisite courses. Certain courses are currently offered; an offering of a course is called a class. A class is identified by a 9 digit class number, is taught by a particular faculty, and meets 1-3 times a week at the particular location. Each faculty is assigned to a single department. Each faculty is identified by a social security number, and has a name, a rank (e.g., assistant professor, associate professor, full professor), and a telephone extension and a set of office hours. The chairperson of a department is always assigned to that department. Each student is identified by a SSN, and has a name, a major department, and an academic status (e.g., undergraduate, graduate, non-degree). Each student is currently enrolled in a number of classes. For each course that the student had taken in the past, a letter grade is available. All locations and office consist of a 3 letter building code and a 3 digit room number. All telephone extensions are 4 digits* [8]

Answer:

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**Question#2:** [6]

Suppose you are assigned a task to design database schemas of any commercial bank providing various financial services to customers in Pakistan, you are assigned to design a sample External level schema and Conceptual level schemas database schemas in order to process

i) Customer information

ii) Product/services information

iii) Employee information

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| --- | --- | --- | --- | --- |
| External View 1   |  | | --- | | Customer\_Info(Cname:string,Cpasscode:int) |   External View 2   |  | | --- | | Product\_Info(P\_ID:string,pcode:int,p\_name:string) |   External View 3   |  | | --- | | Employee\_Info(eName:string,eID:int) |   Conceptual Schema View 1   |  | | --- | | Customer (eID:string, :string,c\_Login:string,c\_name:string  ,c\_address:string)  Product(P\_ID:int,p\_name:string,p\_price:int)  Employee( e\_ID:string, e\_name:string,e\_login:string,  e\_Rank:string,e\_Age:int) | |

**Question#3:** Consider the relation of Employee\_Branch given as follows [6]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| EmployeeID | Name | Designation | Salary | Company\_  Branch\_Code | Branch\_ Address | Contact # |
| 101 | Maryam | Writer | 50000 | 1023 | I-8, ISB | 12345 |
| 102 | Sajjad | Cashier | 25000 | 1320 | H-10, ISB | 54321 |
| 103 | Ali | HR- manager | 75000 | 1023 | I-8, ISB | 12456 |
| 104 | Aziz | Cashier | 25000 | 1023 | I-8, ISB | 65421 |
| 105 | Zahra | Staff | 20000 | 1320 | H-10, ISB | 14725 |
| 106 | Waleed | Staff | 20000 | 1320 | H-10, ISB | 52741 |

Text

Description automatically generated

Apply the following queries on the above relation

1. Find the ID and name of all employees located in I-8, Islamabad. Also write the output table.

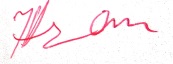
|  |
| --- |
|  |

1. Find list of all employees whose designation is Cashier. Don’t Forget to write output table.

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|  |

1. Select Salary and Branch Address of employees whose salary is greater or equal to 25000, also write out put table.

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**The End of Question Sheet**