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| **Semester: Nov – April 2025****Maximum Marks: 50 Examination: ESE Examination Date: 11-04-2025 Duration: 2 Hrs.** |
| **Programme code: 01/06****Programme: MBA /MBA HCM** | **Class:** FY | **Semester II** |
| **College:**  **K. J. Somaiya Institute of Management** | **Name of the department/Section/Center:** Data Science & Technology |
| **Course Code:** 317P01E203 | **Name of the Course: Database Modeling using SQL** |
| **Instructions: State your assumptions (if any)** |

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| **Question No.** |  |  **Max.****Marks** |
| 1 | **Answer any ONE of the following**1. One of the leading **music record label Inc. in India**, earns money primarily through its music division, which generates revenue from various sources including YouTube, music streaming platforms, and film production.  The company facilitates experienced professionals as well as young talented artists to create albums comprising of songs and classifies it according to a genre (special characteristics). Identify the various tables in a database schema that will enable the company to store and retrieve all the relevant details. Identify the primary keys and foreign keys. Give appropriate data types and constraints. Specify 2-3 specific queries that the company would execute frequently.
2. LittleGitters, an NGO funded by City Municipal Corporation (CMC) run public campaign to encourage people to stop littering. Since it is funded by CMC, NGO is expected to present the result of the campaign to CMC every quarter. CMC will continue to fund only if there is a measurable impact of the campaign in terms of educating the masses and reduction in tonnage of waste/litters collection. Currently, NGO employees the following as a part of its continuous campaign:

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| * Public service announcements
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| * Clean-up events
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| * Education in schools
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| * Publications
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Design an ER diagram to capture all the above requirements that will enable NGO to store and retrieve data while presenting the impact to CMC officials. The database should efficiently manage multivalued attributes and ensure effecting tracking of its campaign management. | 15 |
| 2 | **Answer any THREE of the following**1. “Database organization can be viewed using three distinct level of abstraction”. Describe the three levels.
2. Explain the reason for adopting DBMS over conventional file management system
3. Giving appropriate example represent employees record using network and hierarchical model.
4. “DBMS is governed by ACID property”. Explain its significance.
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| 3 | **Answer any ONE of the following**1. Design a form to collect details of the candidates applying for a job in an organization. Normalize the tables required for recording the attributes. State rules clearly.
2. Normalize the following (University conducts several Programme and each of the Programme has several courses. The courses can be core course or an elective) :

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| Name of the UniversityName of the Constituent Institute/CollegeExamination Timetable for Month/YearProgramme Code: \_\_\_ Programme Name: \_\_\_\_\_\_\_\_ |
| Date | Time | Course Code | Course Name | Course Type | No. of Students |
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| Controller of ExaminationExamination In-ChargeRelease Date |

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| 4 | **Answer the following**1. “Joins are used to retrieve data from multiple tables”. Using appropriate example explain self joins, inner joins, and outer joins.
2. Table\_1 and Table\_2 has some common records. Write an SQL query that will retrieve a) the distinct records and b) the common records
3. “A NULL value is different from zero or blank space”. Justify
4. Correct the following query to retrieve **top 5 customers with the highest total order amounts**

SELECT CustomerID, SUM(OrderAmount) AS TotalOrderAmountFROM Orders;1. Explain the concept of subqueries with an appropriate example.
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