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| **P.V.P Siddhartha Institute of Technology** |
| **Department of Computer Science and Engineering** |
| **Course: B.Tech** | **Year: II** | **Semester: II** | **Descriptive: I** | **A.Y:2024-25** |
| **Subject Code: 23CS3402** | **Subject Name: Database Management Systems** | **Regulation:PVP23** |
| **Duration:1 hr 30 min** | **Maximum Marks:30 Marks** | **Date: 28-02-25** | **Session: F.N** |
| **Answer ONE Question from each section. Each Question carries 10 Marks. 3×10M=30M** |
| **Q. No**  | **Question** | **Marks** | **CO** | **Level** |
| **1 a)** | Discuss the key characteristics that differentiate the database approach from traditional file processing systems. | **5** | CO1 | L2 |
| **1 b)** | Explain various categories of Data Models. | **5** | CO1 | L2 |
|  | **OR** |  |  |  |
| **2 a)** | Explain the three-schema architecture for database systems with a neat diagram. | **5** | CO1 | L2 |
| **2 b)** | Discuss the role of data independence and how it is achieved in the database approach.  | **5** | CO1 | L2 |
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| **3 a)** | Draw an ER Diagram for the Company database. | **5** | CO4 | L4 |
| **3 b)** | Discuss the design phases of ER diagrams? | **5** | CO1 | L2 |
|  | **OR** |  |  |  |
| **4 a)** | * Drawing of ER model of university database application considering the constraints −
* A university has many departments.
* Each department has multiple instructors (one person is HOD). Here the HOD refers to the head of department.
* An instructor belongs to only one department.
* Each department offers multiple courses, each subject is taught by a single instructor.
* A student may enroll for many courses offered by different departments.
 | **5** | CO4 | L4 |
| **4 b)** | Discuss the following terms : i) Cardinality ii) Single valued attributeiii) Multivalued attribute iv) Derived attribute | **5** | CO1 | L2 |
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| **5 a)** | Explain Database system environment with a neat diagram. | **5** | CO1 | L2 |
| **5 b)** | Compare centralized and client-server architectures in the context of Database Management Systems. | **5** | CO1 | L2 |
|  | **OR** |  |  |  |
| **6** | Explain how entities in an ER model are transformed into relational tables. Provide an example. | **10** | CO1 | L2 |