** D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**Set-: II**

**Q. Paper Code:**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

T. Y. B. Tech/B. Arch

**END SEMESTER EXAMINATION (ESE), Nov. – 2022**

Course Name: **Database Engineering** Course Code: **201CSL303**

Seat No:

**Day and Date: Friday, 09/12/2022**

**Time: 2.00 pm to 4.00pm Max. Marks- 50**

***Instructions:***

1. ***All Questions are compulsory.***
2. ***Figures to the right indicate full marks.***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **BT** | **CO’s** | **Q. No.** |  | | **Marks** |
|  |  | **Q.1** | **All Questions are compulsory** | | **20** |
| **2** | **CO1,CO2** | **a** | Explain Entity-Relationship Model (E-R) in detail with a suitable example. | | **6M** |
| **3** | **CO3** | **b** | Illustrate SQL DDL commands with suitable example. | | **7 M** |
| **3** | **CO4** | **c** | Discuss functional dependencies with example.  Determine the set of candidate keys for following sample relation. Let R (A, B, C, D, E) is a relation with following functional dependencies-  (A → BC, CD → E, B → D, E → A) | | **7 M** |
|  | | | | | |
|  |  | **Q.2** | | **All Questions are compulsory** | **10** |
| **2** | **CO4** | **a** | | What are the causes of bucket overflow in a hash file organization? What can be done to reduce the occurrence of bucket overflow? | **4** |
| **2** | **CO4** | **b** | | Explain variable length record representation in brief.  **OR**  Explain multitable clustering file organization. | **6** |
|  | | | | | |
|  |  | **Q.3** | | **All Questions are compulsory** | **10** |
| **2** | **CO5** | **a** | | Define transaction. Give properties of transaction. Draw and explain transaction state diagram. | **5** |
| **2** | **CO5** | **b** | | Explain Timestamp ordering protocol with an example. | **5** |
|  | | | | | |
|  |  | **Q.4** | | **Attempt any two out of three questions** | **10** |
| **2** | **CO6** | **a** | | Explain immediate database modification and deffered database modification in log based recovery with suitable example. | **5** |
| **2** | **CO6** | **b** | | What is the need of checkpoint? Explain how checkpoints are performed with suitable example. | **5** |
| **2** | **CO6** | **c** | | Write short note on buffer management. | **5** |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*