**ABES Engineering College, Ghaziabad**
**B. Tech Odd Semester Sessional Test-1**

**Printed Pages: 2**
**Session: 2023-24**

**Semester: V**
**Course Code: KCS 501** **Roll No.:**
**Course Name: DBMS** **Time: 1.15 Hrs.**
**Maximum Marks: 30**
**Instructions:**

1. **Attempt All sections.**
2. **If require any missing data, then choose suitably.**

<table>
<tr><th>Q. No.</th><th>Question</th><th>Marks</th><th>CO</th><th>KL</th><th>PI</th></tr>
<tr><td colspan="4">Section-A</td><td colspan="2">Total Marks : 20</td></tr>
<tr><td>1</td><td>Attempt ANY ONE part from the following</td><td colspan="4">Same K Levels Questions</td></tr>
<tr><td>a)</td><td>List the advantages and disadvantages of file system over the database approach?</td><td>5</td><td>CO1</td><td>K2</td><td>1.4.1</td></tr>
<tr><td>b)</td><td>Compare and Contrast between physical and logical data independence with example?</td><td>5</td><td>CO1</td><td>K2</td><td>1.4.1</td></tr>
<tr><td>2</td><td>Attempt ANY ONE part from the following</td><td colspan="4">Same K Levels Questions</td></tr>
<tr><td>a)</td><td>Given an instance of the STUDENTS relation as shown below:<br><table><tr><th>StudentId</th><th>StudentName</th><th>StudentEmail</th><th>Student Age</th><th>CPI</th></tr><tr><td>2345</td><td>Shankar</td><td>shankar@math</td><td>X</td><td>9.4</td></tr><tr><td>1287</td><td>Swati</td><td>swati@ee</td><td>19</td><td>9.5</td></tr><tr><td>7853</td><td>Shankar</td><td>shankar@cse</td><td>19</td><td>9.4</td></tr><tr><td>9876</td><td>Swati</td><td>swati@mech</td><td>18</td><td>9.3</td></tr><tr><td>8765</td><td>Ganesh</td><td>ganesh@civil</td><td>19</td><td>8.7</td></tr></table>What should not be the value of X. Justify your answer?<br>GATE2014</td><td>5</td><td>CO1</td><td>K3</td><td>1.4.1</td></tr>
<tr><td>b)</td><td>Define arity of relation in RDBMS. Also find the same for the Healthcare system: -<ul><li>Patient(Patient ID, FirstName, LastName, DoB, Gender)</li><li>Doctor(DoctorID,FirstName,LastName, Specialization)</li><li>Appointment(AppointmentID,PatientID,DoctorId, Appointment Date, Status)</li><li>MedicalRecord(RecodID,PatientID,DoctorID,Diagnosis, Prescription)</li></ul>GATE 2023</td><td>1+4</td><td>CO1</td><td>K3</td><td>2.3.1</td></tr>
</table>

| 3 | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
|---|---|---|---|---|---|
| **a)** | A database is being constructed to keep track of the teams and games of a sport league. A team has a number of players, not all of whom participate in each game. It is desired to keep track of players participating in each game for each team, the positions they play in that game and the result of the game.<br>1. Design an E-R schema diagram for this application.<br>2. Map the E-R diagram into relational model. | **6+4** | **CO1** | K2 | 2.3.1 |
| **b)** | Draw overall structure of DBMS and explain its components in brief with neat diagram? | **4+6** | **CO1** | K2 | 1.3.1 |
| **Section-B** | | **Total Marks : 10** | | | |
| **4** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | What are different integrity constraints? Explain each one of them briefly? | **5** | **CO2** | K1 | 2.3.1 |
| **b)** | Define database language? List out different types of datatypes in SQL? | **5** | **CO2** | K1 | 1.3.1 |
| **5** | **Attempt ANY ONE part from the following** | ***Same K Levels Questions*** | | | |
| **a)** | Consider the following relational database schema consisting of the four relation schemas:<br>**passenger ( pid, pname, pgender, pcity)**<br>**flight (fid, fdate, time, src, dest)**<br>**booking (pid, aid, fid, fdate)**<br><br>Write relational algebra queries for the following;<br>1. Get the details about all flights from Chennai to New Delhi.<br>2. Get the Flight id and flight date of all flights to Kolkata.<br>3. Get the passengers name, who lived in Delhi.<br>4. Get the passenger name, passenger city and flight date who booked the flight.<br>5. Rename pid as pes_id attribute of the passenger relation. | **1+1 +1+ 1+1** | **CO2** | K3 | 2.1.3 |
| **b)** | Define DDL? Consider a Table - **Emp (EID, Ename, Esal)**<br>Write the SQL query for table Emp--<br>1. Add one column (Eadd) to the relation Emp<br>2. Add constraints to Eid as PRIMARY KEY and Eadd as UNIQUE.<br>3. Modify the type of the column (Varchar2(50)) of EMP.<br>4. Drop column Esal of Emp.<br>5. Truncate table EMP | **1+1 +1+ 1+1** | **CO2** | K3 | 2.1.3 |

CO Course Outcomes mapped with respective question
KL Bloom's knowledge Level (K1, K2, K3, K4, K5, K6)
K1- Remember, K2- Understand, K3-Apply, K4- Analyze, K5: Evaluate, K6- Create