



# UNIVERSITY OF THE PUNJAB

Fifth Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig. ....

Roll No. in Words. ....

**PAPER: Database Systems (CMP)**  
**Course Code: IT-304 Part-I (Compulsory)**

**MAX. TIME: 15 Min.**  
**MAX. MARKS: 10**

.....  
Signature of Supdt.:

**Attempt this Paper on this Question Sheet only.**

**Please encircle the correct option. Division of marks is given in front of each question.**

**This Paper will be collected back after expiry of time limit mentioned above.**

- i. A relational database consists of a collection of  
a) Tables                      b) Fields                      c) Records                      d) Keys
- ii. For each attribute of a relation, there is a set of permitted values, called the \_\_\_\_\_ of that attribute.  
a) Domain                      b) Relation                      c) Set                      d) Schema
- iii. By default sql server has \_\_\_\_\_ isolation level  
a) READ COMMITTED                      b) READ UNCOMMITTED  
c) SERIALIZABLE                      d) REPEATABLE READ
- iv. The deadlock state can be changed back to stable state by using \_\_\_\_\_ statement.  
a) Commit                      b) Rollback                      c) Savepoint                      d) Deadlock
- v. An attribute is a \_\_\_\_\_ in a relation.  
a) Row                      b) Column                      c) Value                      d) Tuple
- vi. Which command is used to create a new relation in SQL  
a) create table                      b) create relation                      c) new table                      d) new relation
- vii. What does this query do?                      `select distinct dept_name from institute;`  
a) It gives all the tuples having a distinct dept\_name  
b) It gives the dept\_name attribute values of all tuples without repetition  
c) It gives all the dept\_name attribute of all the tuples  
d) It gives all the tuples having a null value under the dept\_name attribute
- viii. `Course(course_id,sec_id,semester)`  
Here the `course_id,sec_id` and `semester` are \_\_\_\_\_ and `course` is a \_\_\_\_\_  
a) Relations, Attribute                      b) Attributes, Relation  
c) Tuple, Relation                      d) Tuple, Attributes
- ix. Foreign key is the one in which the \_\_\_\_\_ of one relation is referenced in another relation.  
a) Foreign key                      b) Primary key                      c) References                      d) Check constraint
- x. The attribute AGE is calculated from DATE\_OF\_BIRTH. The attribute AGE is  
a) Single valued                      b) Multi valued                      c) Composite                      d) Derived



# UNIVERSITY OF THE PUNJAB

Fifth Semester – 2019

Examination: B.S. 4 Years Program

Roll No. ....

**PAPER: Database Systems (CMP)**

**Course Code: IT-304 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**

**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Short Questions (Marks 20)**

**Q. 2 A. Briefly explain the following questions. 2\*5=10**

- i. Explain Group By Clause in SQL.
- ii. Define theta join with an example.
- iii. What is the use of IN operator in SQL command?
- iv. What is concurrency and deadlock?
- v. Define multivalued attribute with an example.

**B- Write SQL queries for the given statements 2\*5=10**

- i. Show the name and salary of all clerks having salary grade 1 and 2 or manager.
- ii. Show the dept name, Grade and ename of all employees working in Newyork or Chicago.
- iii. Show name of those employees working with king and getting less sal than king but hired before king.
- iv. Show ename of all employees getting salary more than king but less than any employee of dept 20 and more than any employee of department 30.
- v. Show name and salary of all employees working with KING and getting salary less than the king.

Emp (empno,ename,sal,comm,hiredate,mgr,deptno)

Dept(deptno,dname,loc)

SalGrade (Grade,minsal,maxsal)

Tables for queries

**Subjective Question (Marks 30)**

- Q. 3. Explain Three Tire ANSI-SPARC Architecture. 10**
- Q. 4. Explain ACID properties of transaction with example. 10**
- Q. 5. Define 2<sup>nd</sup> Normal Form. Remove Partial Dependency form given relation. 10**  
Where StdID and CourseID is Composite key.

StdID	StdName	CourseID	CourseName	CNIC	DOB	Grade	Skills
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