

SEAT No. \_\_\_\_\_

C117J

SARDAR PATEL UNIVERSITY  
External Examination (CBCS)  
B. Sc. (IT) – 3<sup>rd</sup> - Semester

US03CINT22: Relational Database Management System – I  
1<sup>st</sup> January, Friday – 2021

Time: 2:00 pm to 4:00 pm

Total Marks: 70

Q-1 Select an appropriate option.

[10]

1. Columns of the relation are referred as \_\_\_\_\_.  
(a) Relationship (b) Tuples (c) Attributes (d) Record
2. Which integrity constrains states that no primary key value can be null?  
(a) Entity (b) Referential (c) Domain (d) Simple
3. Which of the following is not three-schema architecture for a database?  
(a) Hierarchical (b) Relational (c) Physical (d) Network
4. Rollback query is belonging to \_\_\_\_\_ type of query.  
(a) DCL (b) DDL (c) TCL (d) DML
5. \_\_\_\_\_ command is use to change a content of table.  
(a) Update (b) Change (c) Alter (d) Modify
6. \_\_\_\_\_ SQL PLUS command is use to execute a command file.  
(a) Connect (b) Save (c) Start (d) Spool
7. Business rules, which are enforced on data being stored in a table, are called \_\_\_\_\_.  
(a) NULL (b) Unique (c) Constraints (d) Protocol
8. The \_\_\_\_\_ function converts char, a CHARACTER value expressing a number, to a NUMBER data-type.  
(a) TO\_NUMBER (b) TO\_CHAR (c) TO\_NUM (d) TO\_DATE
9. Sub query is also termed as \_\_\_\_\_ query.  
(a) Nested (b) View (c) Index (d) Joins
10. The \_\_\_\_\_ statement provides various types of access to database object.  
(a) Revoke (b) Commit (c) Having (d) Grant

Q-2 Fill in the blanks / True or False

[08]

1. \_\_\_\_\_ integrity constrains is used to maintain the consistency among in the two relations.
2. Relation can be represented as table. (True/False)

3. Insert Query is of type DDL. (True/false)
4. Alter command is use to modify structure of a table. (True/False)
5. When a column is defined as not null, that column becomes a \_\_\_\_ column.
6. The data held across the primary key column must be null. (True/False)
7. To make the change permanent a \_\_\_\_\_ statement has to be given at the SQL statement.
8. The address field of an index is called View. (True/False)

Q-3 Answer the following questions. (Attempt any **TEN**)

[20]

1. Explain Commit statement.
2. Explain Having Clause with Example.
3. Explain TAB table.
4. List down types of Relationship.
5. Explain the use of Rollback.
6. List the diff. types of joins.
7. List all the Operators used in SQL.
8. Explain distinct clause in brief.
9. Explain use of OrderBy clause.
10. List down Integrity Constraints.
11. List down advantage of sql.
12. What is sub query? Explain.

Q-4 Answer the following question. (Attempt any **FOUR**)

[32]

1. Explain Codd Rules in detail.
2. Explain different types of architecture for DBMS.
3. Explain update statement and Create statement with its syntax and example.
4. Explain various ways to change structure of a table using alter statement.
5. Define Primary key and foreign key concept with appropriate illustration.
6. List all Agreegate functions available in oracle and explain all of them with appropriate syntax and example.
7. What is index? Explain creation of simple & composite index.
8. What is view? Why it is created, explain it syntax & example.

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[116]

**SARDAR PATEL UNIVERSITY**  
**S.Y. B.Sc. SEMESTER-III EXAM (CBCS)**  
**INSTRUMENTATION (Transducers, Probes and Lasers)**  
**SUB. CODE: US03CINS22**

1st January - 2021

Time: 2:00 pm to 4:00 pm

Mark: 70

**Q.1 Multiple choice questions.**

[10]

1. A transducer of the variable type consists of a coil wound on a \_\_\_\_\_ material.  
 (a) paramagnetic (b) ferromagnetic (c) diamagnetic (d) taramagnetic
2. Which of the following transducer are piezo-electric sensors?  
 (a) active (b) passive (c) semiconductor (d) resistive
3. Which of the following transducer are measure pressure?  
 (a) Resistive (b) Inductive (c) both (a) and (b) (d) Capacitive
4. The gauge factor is defined as  $K = \frac{\Delta R/R}{\Delta l/l}$ .  
 (a)  $\Delta R/R \times l/\Delta l$  (b)  $R/\Delta R \times l/\Delta l$  (c)  $\Delta R/R \times \Delta l/l$  (d)  $\Delta R \times l/\Delta l$
5. A variable plate area transducer is made up of a fixed plate called \_\_\_\_\_ and a movable plate called the \_\_\_\_\_.  
 (a) Rotor, Stator (b) Stator, Rotor (c) Rotor, Steeper (d) Steeper, Rapper
6. An active voltage probe is depending to \_\_\_\_\_ networks.  
 (a) RC (b) LC (c) LR (d) IR
7. In capacitive loading, the effect of rise time is \_\_\_\_\_ RC.  
 (a) 2.2 (b) 2.3 (c) 2.4 (d) 2.5
8. Which of the following is a unique property of laser?  
 (a) Directional (b) Coherence (c) Wave length (d) Speed
9. Which of the following is an example of optical pumping?  
 (a) Ruby laser (b) Helium-Neon laser (c) Semiconductor laser (d) Dye laser
10. \_\_\_\_\_ is pumping source in Nd: YAG laser.  
 (a) Chemical (b) Optical (c) Electrical (d) Mechanical

**Q.2 (a) Fill in the blanks.**

[08]

1. \_\_\_\_\_ transducer measured by standard method used for electrical measurements.
2. \_\_\_\_\_ are non-metallic resistors made by sintering mixtures of metallic oxides.
3. In differential probe, CMMR is called \_\_\_\_\_.
4. The relative phase difference between to point in time remain fixed is called \_\_\_\_\_ coherence.

[13]

[P.T.O.]

**(b) Answer the following sentences in form of true or false.**

1. In potentiometer, the motion of sliding contact may be cylinder.
2. The inductive transducer a motion between conductor and magnetic field induce a voltage in conductor.
3. In ac current probe head is a secondary coil that has been wound to precise specifications on a magnetic core.
4. Laser is called as non material knife.

**Q.3 Short Answer Questions. (Attempt any ten)**

**[20]**

1. List different types of transducers.
2. What is the difference between passive and active transducer.
3. Draw the figure of helical gauge and rosette gauge.
4. State the advantages of differential output transducer.
5. Draw the block diagram of LVDT.
6. Define the advantages of resistance thermometers.
7. State the features of ideal probe.
8. State the advantages of high voltage passive probe.
9. Draw the wave form of probe attenuation compensation.
10. Define: Stimulated absorption, Spontaneous emission and Stimulated emission.
11. Draw the diagram of semiconductor laser.
12. State the advantages of gas laser.

**Q.4 Answer in details of any four from the following questions. (Each of 8 marks)**

**[32]**

1. Explain in brief unbounded and bonded strain gauge and define gauge factor.
2. Write a note on platinum resistance thermometer with advantages and limitations.
3. Describe with the help of a diagram the construction of an LVDT. Also its applications, advantages and disadvantages.
4. Write a note on: (i) Capacitive transducer (ii) Piezo-electrical transducer with necessary figure.
5. Write a detailed note on active probe and differential probe.
6. Define: Capacitive loading. Discuss the probe and source of capacitive loading effect on rise time, bandwidth and probe attenuation ratio.
7. Write a detail note on semiconductor laser and Dye laser and its applications.
8. Discuss the Nd: YAG laser with necessary diagram and its applications.