Part I: Multiple choice (4pt. each)

1. which one of the following is not one of the DBMS responsibility?
   [c) atomicity]
2. **The logical structure of the database is defined by…**
   [a) administrator]
3. The major purpose of DBMS is to provide user with…
   [b) abstract view of data]
4. **The most widely used object based logical DB model.**
   [d) All of the above]
5. **Building relationships among data tables require _____ in relational DB models.**
   [c) common columns]
6. **____ is the language that describes database schema in DBMS.**
   [c) DDL]
7. **Consistency is the responsibility of …**
   [a) Transaction management]
8. Oracle, MYSQL, MS Access, My SQL are popular representatives of…
   [a) Relational DBMS]
9. Immunity in DBMS is to avoid…
   [a) unauthorized access]
10. The advantage of Relational DBMS over earlier data file collection DB is …
    [d) all of the above]
11. **Data dictionary is a file containing…**
    [c) Metadata]
12. **Data abstraction describe …**
    [c) How data are stored on physical medium]
13. Record based DB models contain …
    [b) Fixed format records]
14. **The most popular record based DB model is …**
    [a) The Relational model]
15. $\prod \mathbf{Name, Code}\ (\boldsymbol{\sigma \mathbf{CGPA} = 2.1}(\mathbf{Student} \bowtie \mathbf{Course})$
    [a) Mary, EE210; Alice, EE231]
16. $\prod \mathbf{Department}\ \mathbf{G}_{\mathbf{sum\ CGPA}}(\boldsymbol{Student})$
    [c) COM, 5.3; EE, 4.2]
17. $\prod \mathbf{Count\ Distinct}_{\mathbf{Department}}(\boldsymbol{Student})$
    [b) 2]
18. $\prod \mathbf{Code}\ (\mathbf{Student} \bowtie \mathbf{Course})$
    [a) Null, EE210, COM142, EE231]

19. $\prod Count_{CGPA}$ (σDepartment = 'COM' (Student $\bowtie$ Course))
[c) 3.2]

20. $\prod St - No(Student) - \prod(Course)$ //$\prod(Course) \sim \prod St - No(Course)$
[20071234]

Part II: T/F (2pt. each)

1. Database systems must provide data duplication avoidance mechanisms.
[F: Replication]
2. DDL is a language that performs data transaction.
[F: TCL for data transaction, DDL for data definition]
3. **SQL is a language that operates with DML.**
[T: DML is family of SQL]
4. **A tuple in a table describes relationship among set of values.**
[F: Row]
5. **Physical level of data abstraction describes how data are stored on magnetic disks.**
[T: non-volatile storage]
6. **Entity-Relationship model is structured as fixed format records of several types.**
[T: Record-based models are structured in fixed format records of several types.]
7. **In hierarchical DB model, the relationships among tables are build thru common columns.**
[F: Arbitrary graphs]
8. Data duplication is a major problem in DBMS.
[F: Excessive permissions]
9. Cartesian product of data tables result with unmatched tuples.
[T: table1 cross table2]
10. Natural join operation is same as set intersection operation with selection.
[T: Select common and join tables]