

**B.Tech. - VIEP - COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

00913

June, 2018

BICS-011 : DATABASE MANAGEMENT SYSTEM

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions. All questions carry equal marks.

1. (a) What is data model ? Explain relational model in Database management systems. 5
- (b) Draw an architecture diagram of a DBMS and explain briefly. 5
2. (a) What is indexing ? Explain primary indexes and clustering indexes. 5
- (b) Explain the terms entities, attributes and entity sets. Also explain class hierarchies briefly. 5

- 3. (a)** What is logical data model ? Explain integrity constraints over relations briefly. 5
- (b)** What is relational algebra ? Explain various joins used in relational algebra. 5
- 4. (a)** Explain the following terms : 5
- (i)** Union
 - (ii)** Intersection
 - (iii)** Set-difference
 - (iv)** Cross-product
 - (v)** Selection
- (b)** What is view ? Write a sample query for view and explain it. 5
- 5. (a)** What is normalization of relations ? Explain first and second normal forms with examples. 5
- (b)** What are the algorithms used in relational decomposition from a universal relation ? Explain any one algorithm briefly. 5
- 6. (a)** What is decomposition ? List the properties of decompositions. 5
- (b)** Compare and contrast multivalued dependency and functional dependency. 5

7. (a) What is concurrency execution of transaction ? Explain serializability and motivation for concurrent execution. 5
- (b) What is the motivation of database security ? Explain any method to achieve security in database. 5
8. (a) What is the role of recovery manager and transaction manager in crash recovery ? 5
- (b) What is Roll back ? Write a short note on ARIES. 5
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