

Roll No .....

**MCIT-105**

**M.E./M.Tech., I Semester**

Examination, December 2016

**Advance DBMS**

**Time : Three Hours**

**Maximum Marks : 70**

**Note :** Attempt any five questions. All questions carry equal marks.

1. a) List four significant differences between a file processing and a DBMS. 7  
b) Construct a E-R diagram for a hospital with a set of patients and set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. 7
2. a) Give an example of a relation schema R and set of dependencies such that R is in BCNF, but is not in 4NF. 7  
b) List the three design goals for relational database, and explain why each is desirable. 7
3. a) Explain how the following differ: Fragmentation transparency, Replication transparency and Location transparency. 7  
b) What do you mean by catalog information? Explain in detail. 7
4. a) What do you mean by Materialization? Explain in detail. 7  
b) Write the difference between specialization and Generalization by giving suitable example. 7

5. a) Let  $R=(A, B, C)$ , and let  $r_1$  and  $r_2$  both be relations on schema R. Give expressions in QBE. 7  
i)  $r_1 \cup r_2$   
ii)  $r_1 - r_2$   
iii)  $\Pi_{AB}(r_1) \bowtie \Pi_{BC}(r_2)$   
b) Why are certain functional dependencies called trivial functional dependencies. 7
6. a) Explain indexing of spatial data in detail. 7  
b) What do you mean by multimedia databases? 7
7. a) What do you mean by color Histograms? 7  
b) Discuss the relative advantages of centralized and distributed database. 7
8. Write short notes on (any two): 14  
a) Web databases  
b) Content based retrieval  
c) Normalization

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