

**II B. Tech II Semester Supplementary Examinations, April/May - 2016**  
**DATA BASE MANAGEMENT SYSTEMS**  
 (Com. to CSE, IT)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions  
 All Questions carry **Equal** Marks

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1. a) Identify the main components in a DBMS and briefly explain what they do? (10M)  
 b) What is meant by data independence? (5M)
  2. a) What are the steps in designing a database? (5M)  
 b) How is the issue of whether a concept should be modelled as an entity or an attribute resolved? Explain. (10M)
  3. What are the six basic relational operators that query languages have? Explain with examples. (15M)
  4. What is a *view*? How do views support logical data independence? How are views used for security? How are queries on views evaluated? Why does SQL restrict the class of views that can be updated? (15M)
  5. a) Consider the schema  $R=(A,B,C,D,E)$  and the functional dependencies:  $A \rightarrow BC$ ,  $CD \rightarrow E$ ,  $B \rightarrow D$ ,  $E \rightarrow A$ . Give a lossless join decomposition into BCNF of the schema  $R$ . (8M)  
 b) Let  $R=(A, B, C, D, E)$  and let  $M$  be the following set of multivalued dependencies:  
 $A \twoheadrightarrow BC$ ,  $B \twoheadrightarrow CD$ ,  $E \twoheadrightarrow AD$ . List the nontrivial dependencies in  $M^+$ . (7M)
  6. a) What are the different storage media? Give the implementation of stable storage. (8M)  
 b) Give an example of a strict schedule that is not serial able. (7M)
  7. a) What are *collisions*? Why do we need overflow pages to handle them? (8M)  
 b) Compare the heap and hash file organizations (7M)
  8. a) Describe how search, insert, and delete operations work in ISAM indexes. (9M)  
 b) What is the need for overflow pages, and their potential impact on performance? (6M)

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