JSQP

Section 1 (6 marks per question)

Q1. Explain the concept of data abstraction in the context of database systems, its levels, and their significance. Provide an example illustrating how data abstraction simplifies interaction with a database.

Component	***Marks***
concept	2 marks
explanation	2 marks
example	2 marks

Q2. Discuss the limitations of traditional file systems that led to the development of database management systems (DBMS). Provide specific examples of the problems caused by data redundancy and inconsistency in a file system.

Component	***Marks***
concept	2 marks
explanation	2 marks
example	2 marks

Q3. Describe the components of the relational model and explain the significance of keys in ensuring data integrity. Illustrate with an example how primary and foreign keys establish relationships between tables.

Component	***Marks***
concept	2 marks
explanation	2 marks
example	2 marks

Q4. Explain the concept of mapping cardinalities in the Entity-Relationship (ER) model and their role in database design. Give examples of different mapping cardinalities (one-to-one, one-to-many, many-to-many) in a college database scenario.

Component	***Marks***
concept	2 marks
explanation	2 marks
example	2 marks

Q5. Compare and contrast specialization and generalization in the Extended ER (EER) model. Provide examples of how these concepts are used to model inheritance and hierarchical relationships in a database.

Component	***Marks***
concept	2 marks
explanation	2 marks
example	2 marks