

1.

Referential integrity is the database must not contain any invalid foreign key values.  
If referential integrity did not exist, there would be non-sense foreign keys that lose the connection between relations.

2.

- a. customerName could be changed to customerLastName and customerFirstName
- b. Hotel (hotelNumber)  
Room (roomNumber, hotelNumber)  
Booking(hotelNumber, roomNumber, guestNumber, startDate)  
Customer(customerNumber)
- c. Yes. They connect value in a relation to a primary key in other relation.

3.

Domain Integrity : Values in the same domain have to follow rules of its domain.

Entity Integrity : Values of primary keys must not accept nulls

Alternate key : The unchosen to be Primary key from among candidate keys.

Candidate key : a superkey that contain minimal property.

Composite key: key that consists of more than 1 attribute.

Compound key : a composite primary key in which each element is a foreign key.

Foreign key : The key that links an attribute in 1 relation to a primary key of other relation.

Natural key : identifier keys that exist in a relation initially

Primary key : The minimal and unique key that is used to identify.

Superkey : is a unique identifier of a relation

Surrogate key : when relation does not have any natural primary keys, then we make up a primary key by adding extra attributes.

4.

Candidate keys: employeeNumber, loginName

Superkey: (employeeNumber, loginName)

Alternate key: loginName

Primary key: employeeNumber