DBMS QuestionBank

1. What is database?
2. What is DBMS?
3. What is a Database system?
4. What is the role of Database Administrator?
5. Disadvantage in File Processing System?
6. Describe the three levels of data abstraction?
7. Define the "integrity rules"
8. What is extension and intension?
9. What is Data Independence?
10. What do you mean by Data processing?
11. Which part of the RDBMS takes care of the data dictionary? How
12. What do you mean by instance &schema? Explain the difference between these.
13. What is the difference between Procedural DML and Non-Procedural DML?
14. What is a view? How it is related to data independence?
15. What is Data Model?
16. What is E-R model?
17. What do you mean by Hierarchical model?
18. What is an Entity?
19. What is an Entity type?
20. What is an Entity set?

21. What is a composite attribute? Give examples.
22. What is a single valued attribute? Give examples.
23. What is a multi-valued attribute? Give examples.
24. What do you mean by cardinality? What are different kinds of cardinalities?
25. What is an Extension of entity type?
26. What is the difference between the strong entity set and weak entity set ?
27. Define sub type and super type entities?
28. Give example of following relationships :
    a. Many-to-One
    b. One-to-One
    c. One-to-Many
    d. Many-to-Many
29. What is an attribute?
30. What is a Relation Schema and a Relation?
31. What is degree of a Relation?
32. What is Relationship ,Relationshipset, and Relationship type?
33. What is degree of Relationship type?
34. What is SDL(Storage Definition Language)?
35. What is Data Storage-Definition Language?
36. What is DDL, DCL, and DML(Data Manipulation Language)?
37. What is VDL (View Definition Language)?
38. Consider the following tables:

    Employee(Emp_no,Name,Emp_city)

    Company(Emp_no, Company_name, Salary)

    i. Writea SQLquerytodisplayEmployee nameandcompanyname.

    ii. WriteaSQLqueryto displayemployeename,employeecity,companynameand salary of all the employees whose salary >10000

    iii. Writeaquerytodisplayall the employeesworkingin ‘XYZ’company.
39. Whatis Relational Algebra?
40. What arethe unaryoperations in RelationalAlgebra?
41. Explainvariousoperators usedinrelational algebra.

42. Whatdoyoumean byatomicityand aggregation?
43. DifferentiatebetweenCartesianproductandnaturaljoinoperationsusedinrelational algebra.
44. Whatarethe primitiveoperationscommontoallrecordmanagementsystems
45. Whatisa primarykey?
46. Defineforeign key?Howdoes it playarolein thejoin operation ?
47. Whatarevarious Data types in SQL?
48. Whatdoyou mean bySQL?What arethe characteristics ofSQL?
49. ExplainTriggersanditstypeswithexamples.
50. DistinguishbetweenstaticanddynamicSQL.
51. WhatismeantbystaticSQL?HowitdiffersfromdynamicSQL?
52. Howarethenulls representedin databasesystem?
53. Whatareaggregatefunctions?
54. Whatis the purposeof groupbyclausein theSELECTstatement?
55. Whatareviews?Howtheyare created?
56. Whatdoyou meanbyintegrityconstraints ?
57. Whichsubdivisionof SQLis usedtoput valuesintablesandwhich onetocreatetables ?
58. DifferentiatebetweenSQLcommandsDROPTABLEandDROPVIEW.
59. Whatisthedifferencebetween WHEREandHavingClause?
60. Discussthevarious typeof joinoperations ?Whyarethesejoin required.
61. HowareexceptionshandledinPL/SQL?Givesomeoftheinternalexceptions'name
62. Whatarestored-procedures?Andwhataretheadvantagesofusingthem.
63. Whatarecursors givedifferenttypesofcursors.
64. What is normalization?
65. WhatareArmstrongrules?Howdowesaythat theyare completeand/orsound
66. Explainthecodd’srulesforrelationaldatabasedesign.
67. ExplainFunctional dependencyand Trivial functionaldependencywithexamples.
68. ExplainthetermDistributedDBMSandClient-ServerDBMS
69. Definethe relationaldata model.
70. WhatisFunctionalDependency?
71. What doyou mean byredundancy?Howthis can beavoided?

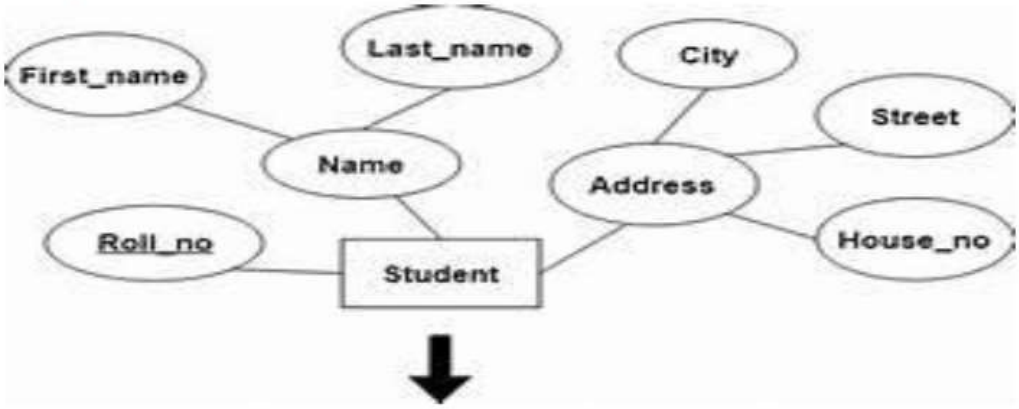
72. Whenis a functional dependencyFsaid to beminimal?
73. Whatis Multivalued dependency?
74. WhatisLosslessjoinproperty?
75. WhatisFullyFunctionaldependency?
76. What islossydecomposition?
77. Whatis transitive dependency?
78. Whatis1NF,2NF,3NFandBCNF(Boyce-CoddNormal Form)?
79. ExplainClosureofSet ofFunctionaldependencyand Closureof Attributesets
80. ExplainCanonicalcover andExtraneousAttributeswithexamples.
81. Whatdoyou understandbydependencypreservation?
82. Whatistheneedofthenormalization? Explainthefirstthreestepsinvoledinthe normalization.
83. Whatarethedifferentphasesof transaction?
84. WhataretheACID propertiesofa transaction?
    a. Whatdoyoumean byisolation?Whyisit important?Givean example.
    b. Whatdoyoumeanbyconsistency?Whyis itimportant?Givean example.
    c. Whatdoyoumeanbyatomicity?Whyis itimportant?Givean example.
    d. Whatdoyou meanbydurability?Whyis itimportant?Givean example.
85. Listoutthestatesofa transaction.
86. Discusstheimmediateupdaterecoverytechniqueisbothsingleandmultiuser environment.
87. Explainthepurposeofcheckpointmechanism.Howoftenshouldcheckpointsbe performed
88. Listandexplain varioustypes ofspecialized lockingtechniques usedin DBMS
89. Whyisconcurrencycontrolneeded?Explainlostupdate,Inconsistentretrievalsand Uncommitted dependency anomalies.
90. Whatisadeadlock?How canadeadlockoccur?explain.
91. Brieflyexplainonedeadlockprevention algorithm.
92. Whatif timestampingisused ?Explain briefly
93. Whatistwo-phaselockingandhow doesitguaranteeserializability?
94. Discussthe concurrencycontrolmechanism in detailusingsuitableexample.

95. DifferentiatebetweenTwo phaselockingand Rigoroustwo-phaselocking.
96. Howcan deadlocks beavoided when using2PL?
97. HowShareandexclusivelocksdiffer ?Explain.
98. Howprecedencegraphcan beused todetect deadlock ?
99. Whatis asystem log?What isthe purposeof thesystemloginsystemrecovery?
100. What do you understand by distributed databases? Give the various advantages and disadvantages of distributed database management system.
101. What is data base recovery? Why backups are important?
102. What are transaction logs?
103. What do you mean by rollback?
104. What is the difference between volatile and non volatile storage?
105. What are redo and undo logs?
106. What is a timestamp? State its advantages.
107. What is shadow paging? State its advantages.
108. What are the methods used to prevent the system from dead lock?
109. What is data base recovery? Why backups are important?
110. Explain shadow paging recovery scheme in detail.
111. What is database? What is DBMS? Its functions and applications.
112. Disadvantage of File Processing System? Advantages of DBMS over File System?
113. Describe the three levels of data abstraction? Also explain the role of DBA?
114. What is Data Independence? What is a view? How it is related to data independence?
115. Explain SQL and all the Data base Languages.
116. Describe Transaction Management with its state diagram and properties.
117. Classify database Management System with brief description about all.
118. Explain the three schemas Architecture with suitable diagram.
119. Discuss the overall Data base structure with suitable diagram.
120. Define the terms:
    a) Data redundancy
    b) Data Consistency
    c) Data Integrity
    d) Data Isolation

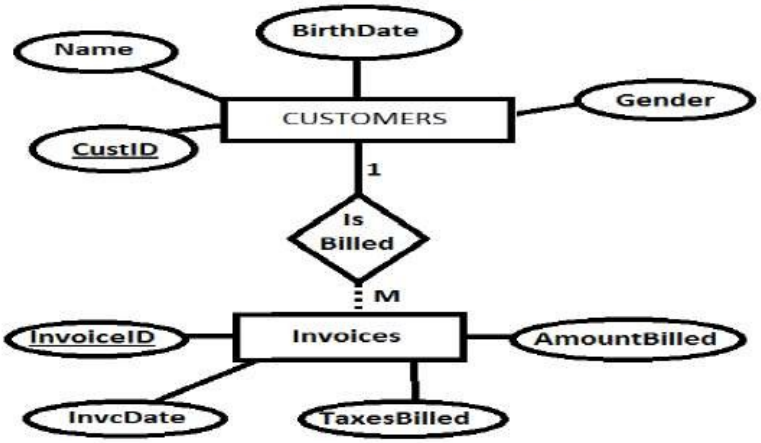
e) Instance&schema.

Problems on ER Model:

1. **What is the min no of tables required for the following ER Diagrams? Also make the coresponding Table with its attributes in the table.**

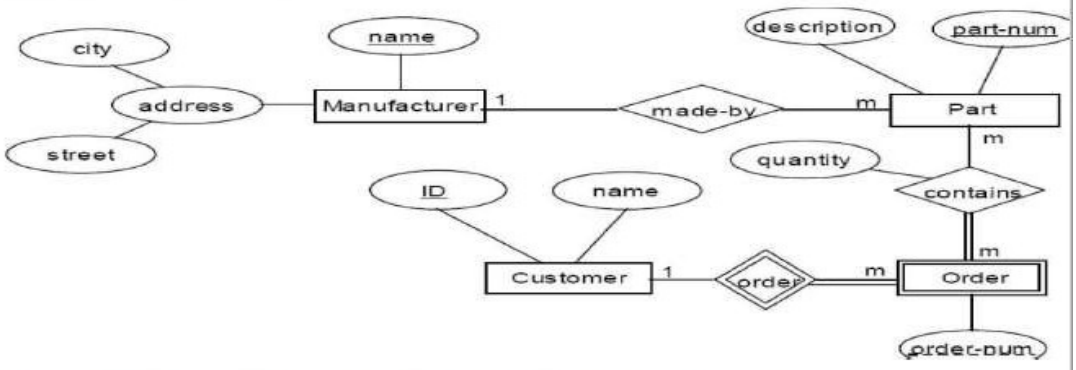


2. **What is the min no of tables required for the following ER Diagrams?**



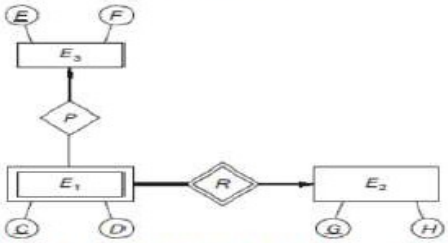
121.

3. **What is the min no of tables required for the following ER Diagrams?**



4. **What is the min no of tables required for the following ER Diagrams?**

Consider the following ER-diagram



What is the minimum number of tables are required to represent E_1, E_2, E_3, P, R ?

5. **What is the min and max no of tables required for the following ER Diagrams?**