



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (*EXTERNAL*)

Academic Year 2004/2005 – 1st Year Examination – Semester 2

IT2302 – Database Management Systems

Multiple Choice Question Paper

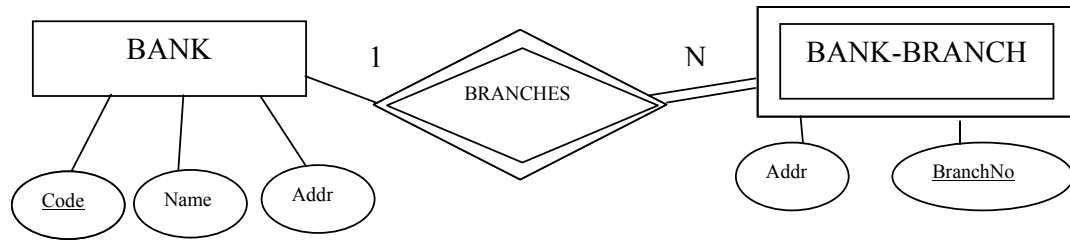
**31st July, 2005
(TWO HOURS)**

Important Instructions:

- The duration of the paper is **2 (two) hours**.
- The medium of instruction and questions is English.
- The paper has **45** questions and **12** pages.
- All questions are of the MCQ (Multiple Choice Questions) type.
- All questions should be answered.
- Each question will have 5 (five) choices with one or more correct answers.
- All questions will carry equal marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from -1 (*All the incorrect choices are marked & no correct choices are marked*) to +1 (*All the correct choices are marked & no incorrect choices are marked*).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**

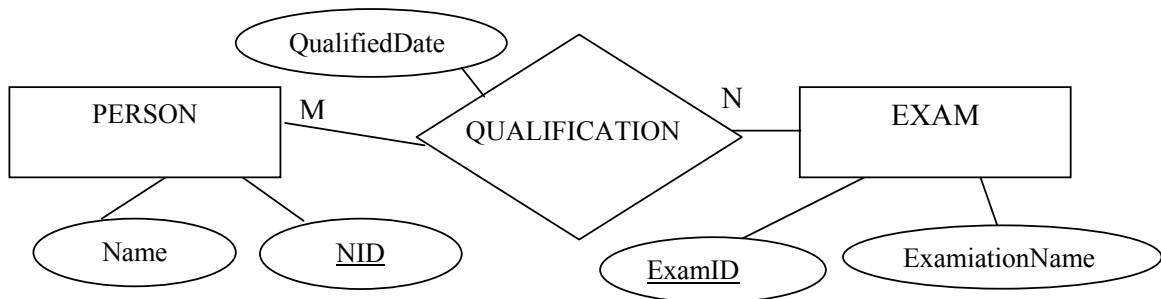
- 1) Making a change to the conceptual schema of a database but not affecting the existing external schemas is an example of
- | | | |
|---------------------------------|--------------------------|--------------------------------|
| (a) Physical data independence. | (b) Concurrency control. | (c) Logical data independence. |
| (d) Functional dependency. | (e) Integrity control. | |
- 2) A specific example where physical data independence would hold is
- | |
|---|
| (a) when data file is changed from an unordered file to a sorted file. |
| (b) when an additional access structure, (e.g. an index) is created for a relation. |
| (c) when DBA decides to store the data in a B+ tree. |
| (d) when the user retrieves data from the database. |
| (e) when the user writes an application program to join tables. |
- 3) Identify the correct statement(s) about the ANSI/SPARC architecture.
- | |
|---|
| (a) The external level is concerned with individual user perceptions, while the conceptual level is concerned with a community user perception. |
| (b) The conceptual level is a level of indication between the internal level and the external level. |
| (c) The internal level in a database system will definitely be relational. |
| (d) Any given database has exactly one conceptual schema and one physical schema, but it may have several external schemas. |
| (e) A data definition language is used to define the internal schema. |
- 4) Match each term in Column A with the most appropriate definition in Column B.
- | Column A | Column B |
|-------------------------------|---|
| (P) Technological feasibility | (i) Needs information from the database to carry out the primary business responsibility. |
| (Q) User | (ii) Responsible for the database system and its associated application software. |
| (R) Practitioner | (iii) Determines hardware and software availability for database system. |
| (S) Operational feasibility | (iv) Determines availability of expertise and personnel needed for the database system. |
- | |
|--|
| (a) (P)→(iii), (Q)→(i), (R)→(ii), (S)→(iv) |
| (b) (P)→(iv), (Q)→(i), (R)→(ii), (S)→(iii) |
| (c) (P)→(iii), (Q)→(ii), (R)→(i), (S)→(iv) |
| (d) (P)→(iv), (Q)→(ii), (R)→(i), (S)→(iii) |
| (e) (P)→(ii), (Q)→(i), (R)→(iii), (S)→(iv) |
- 5) A relation (from the relational database model) consists of a set of tuples, which implies that
- | |
|---|
| (a) all tuples in a relation must be distinct. |
| (b) relational model supports multi-valued attributes whose values can be represented in sets. |
| (c) for any two tuples, the values associated with all of their attributes may be the same. |
| (d) for any two tuples, the values associated with one or more of their attributes must differ. |
| (e) all tuples in a particular relation may have different attributes. |
- 6) If K is a foreign key in relation R1, then
- | | |
|---|--|
| (a) every tuple of R1 has a distinct value for K. | (b) K cannot have a null value for tuples in R1. |
| (c) K is a key for some other relation. | (d) K is a primary key for R1. |
| (e) K is a composite key for R1. | |

- 7) The following diagram describes part of an ERD of a Bank database:



What is/are the correct statement(s) regarding the above diagram?

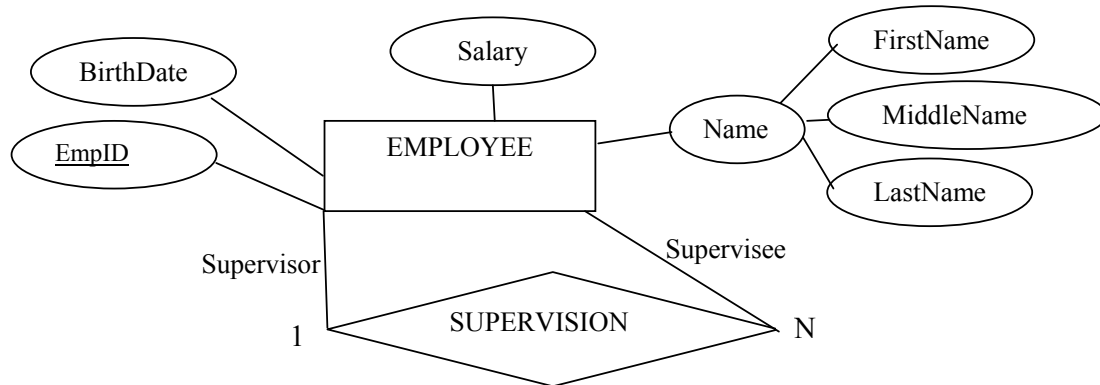
- (a) Bank is a weak entity.
 (b) Bank-Branch represents a weak entity.
 (c) The participation of Bank in Branches relationship is partial.
 (d) BranchNo of the Bank-Branch entity is a partial key.
 (e) One Bank-Branch can be related to many Banks.
- 8) Which of the following is(are) the most possible relation(s) if the diagram in (7) is mapped into a relational model ?
- (a) Bank(code, Name, Addr) (b) Bank_Branch(BranchNo, addr)
 (c) Branches(Code, BranchNo) (d) Bank_Branch(BranchNo, Code, Addr)
 (e) Bank(Code, Name, Addr, BranchNo)
- 9) Consider the following Entity Relationship Diagram (ERD):



Which of the following possible relations hold(s) if the above ERD is mapped into a relational model?

- (a) Person(NID, Name) (b) Qualification(NID, ExamID, QualifiedDate)
 (c) Person(NID, ExamID, Name) (d) Exam(ExamID, NID, ExaminationName)
 (e) Exam(ExamID, ExaminationName)
- 10) Which of the following concepts is/are applicable with respect to 2NF?
- (a) Full functional dependency (b) Partial dependency (c) Transitive dependency
 (d) Non-transitive dependency (e) Data independence

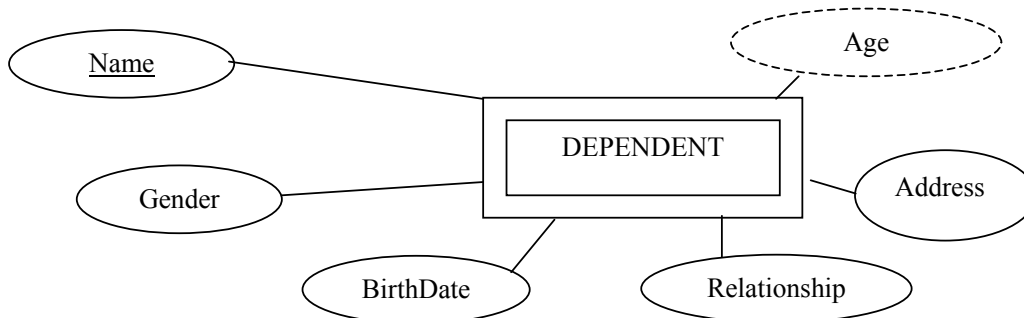
- 11) Consider the following ERD diagram depicting the relationship of an employee and supervisor:



Which of the possible relations if the above ERD is mapped into a relational model?

- (a) Employee(EmpID, BirthDate, Salary, Name(FirstName, MiddleName, LastName))
- (b) Employee(EmpID, BirthDate, Salary, Name(FirstName, MiddleName, LastName))
- (c) Supervision(EmpID, BirthDate, Salary, Name(FirstName, MiddleName, LastName), EmpID)
- (d) Supervisor(SupervisorID, BirthDate, Salary, Name(FirstName, MiddleName, LastName), EmpID), {EmpID})
- (e) Employee(EmpID, BirthDate, Salary, Name(FirstName, MiddleName, LastName), SupervisorID)

- 12) The following diagram represents the dependent entity from an Entity Relationship Diagram:



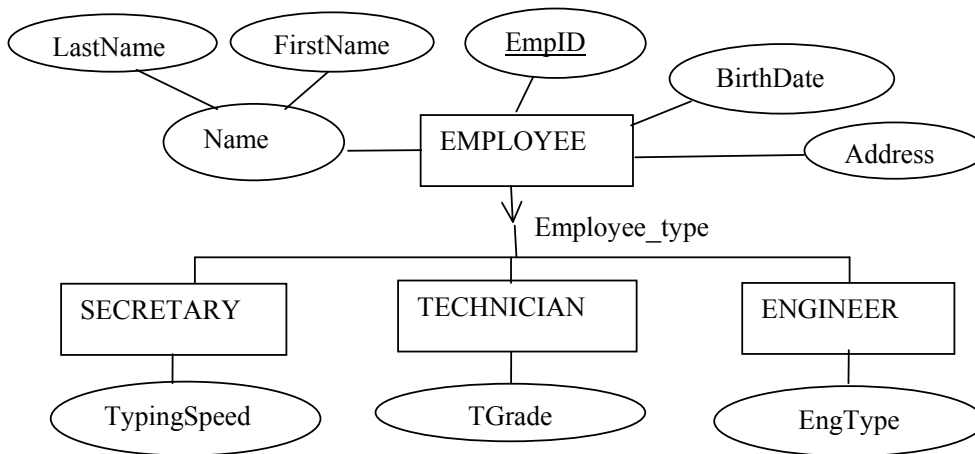
Select the characteristics which are represented by the above diagram.

- (a) BirthDate is a derived attribute.
- (b) Age is a derived attribute.
- (c) Gender is an atomic attribute.
- (d) Address is a multivalued attribute.
- (e) Name is a key attribute.

- 13) Select the correct statement/s from among the following on proper naming of schema constructs:

- (a) Entity type name applies to all the entities belonging to that entity type and therefore a plural name is selected for entity type.
- (b) In the narrative description of the database requirements, *verbs* tend to indicate the names of relationship types.
- (c) The nouns arising from a database requirement description can be considered as names of attributes.
- (d) Additional nouns which are appearing in the narrative description of the database requirements represent the weak entity type names.
- (e) Adjectives written in the database requirement description help to identify the partial relationships among entities.

- 14) Consider the following Entity Relationship Diagram (ERD):



Which of the following is/are the most suited relation(s) if the above diagram is mapped into a relational model?

- (a) EMPLOYEE(EmpID, FirstName, LastName, BirthDate, Address)
- (b) EMPLOYEE_TYPE(EmpID, Secretary, Technician, Engineer)
- (c) EMPLOYEE_TYPE(EmpID, TypingSpeed, TGrade, EngType)
- (d) TECHNICIAN(EmpID, TGrade)
- (e) ENGINEER(EmpID, EngType)

- 15) *Structural constraints* of a relationship type refer to

- (a) identifying the owner entity type relevant to a given entity type.
- (b) the number of relationship instances which an entity can participate in.
- (c) whether the existence of an entity depends on it being related to another entity via the relationship type.
- (d) the role that a participating entity from the entity type plays in each relationship instance.
- (e) the constraints applicable in granting access to tables, columns and views in a database schema.

- 16) Which of the following statements is/are correct with respect to *entity integrity*?

- (a) Entity integrity constraints specify that primary key values can be composite.
- (b) Entity integrity constraints are specified on individual relations.
- (c) Entity integrity constraints specify that no primary key value can be null.
- (d) Entity integrity constraints are specified between weak entities.
- (e) When entity integrity rules are enforced, a tuple in one relation that refers to another relation must refer to an existing tuple.

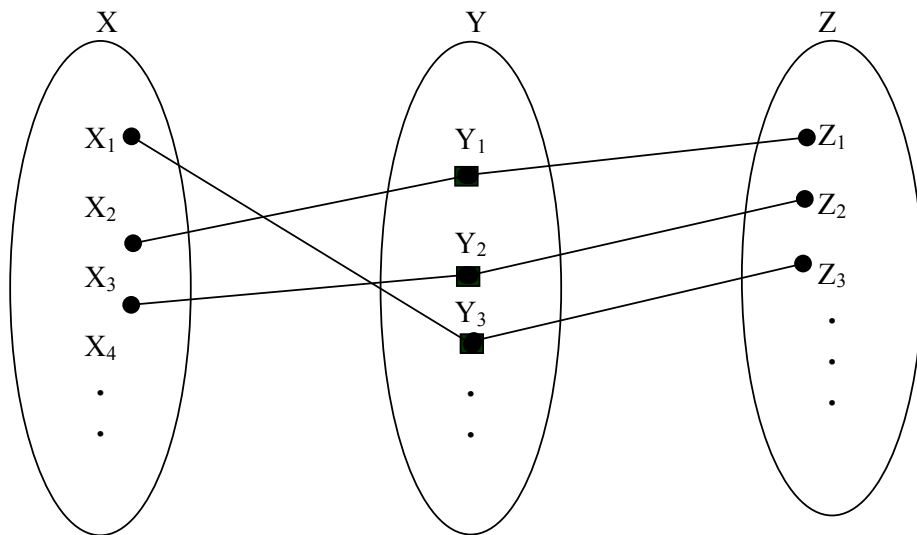
- 17) Select the correct statement(s) from among the following on *referential integrity*.

- (a) Referential integrity constraints check whether the primary key values are unique.
- (b) Referential integrity constraints are specified between two relations in a schema.
- (c) Referential integrity constraints check whether an attribute value lies in the given range.
- (d) Referential integrity constraints are specified between entities having recursive relationships.
- (e) When Referential integrity rules are enforced, a tuple in one relation that refers to another relation must refer to an existing tuple.

- 18) Which of the following keywords is/are used with Data Control Language statements?

- | | | |
|------------|------------|------------|
| (a) SELECT | (b) REVOKE | (c) DELETE |
| (d) GRANT | (e) UPDATE | |

- 19) Consider the following diagram depicting a kind of a relationship type where X and Z are entities and Y is a relationship type:



Select the correct statement(s) from among the following on the above diagram.

- (a) The relationship type Y is of cardinality ratio 1 : N.
- (b) The relationship type Y is of cardinality ratio 1 : 1.
- (c) The diagram depicts existence dependencies.
- (d) The participation of X in the Y relationship type is total.
- (e) The participation of Z in the Y relationship type is partial.

- 20) Consider the relation R with four attributes A,B,C and D and the functional dependencies

$$(A,B) \rightarrow (C,D) \text{ and } C \rightarrow D.$$

Which of the following statements is/are correct?

- (a) C is a key for relation R.
- (b) R is in 3NF.
- (c) Functional dependency $C \rightarrow D$ violates 3NF.
- (d) A,B is a key for relation R.
- (e) R is in BCNF.

- 21) Consider the following relation and its sample data. (Consider that these are the only tuples for the given relation)

EmpNo	DeptNo	ProjNo
1001	01	12
1001	01	13
1002	01	12
1003	01	14

Which of the following statements is/are correct?

- (a) The functional dependency $(\text{EmpNo}, \text{DeptNo}) \rightarrow \text{ProjNo}$ holds over R.
- (b) The functional dependency $\text{DeptNo} \rightarrow \text{ProjNo}$ holds over R.
- (c) The functional dependency $\text{EmpNo} \rightarrow \text{DeptNo}$ holds over R.
- (d) The functional dependency $\text{ProjNo} \rightarrow \text{DeptNo}$ holds over R.
- (e) The functional dependency $(\text{EmpNo}, \text{ProjNo}) \rightarrow \text{DeptNo}$ holds over R.

- 22) Consider the relation '*Property* (*PropertyId*, *VillageName*, *Lot#*, *Area*)' with the following functional dependencies.
- (i). $PropertyId \rightarrow (VillageName, Lot\#, Area)$
 - (ii). $(VillageName, Lot\#) \rightarrow (PropertyId, Area)$
 - (iii). $Area \rightarrow VillageName$

Which of the following statements is/are correct with respect to the information given above?

- | |
|--|
| <ul style="list-style-type: none"> (a) The relation '<i>Property</i>' is in 3NF. (b) The functional dependency $(VillageName, Lot\#) \rightarrow (PropertyId, Area)$ violates 2NF. (c) The functional dependency $Area \rightarrow VillageName$ violates BCNF. (d) The relation '<i>Property</i>' is in BCNF. (e) The functional dependency $Area \rightarrow VillageName$ violates 3NF. |
|--|

- 23) Which of the following sets of operations represent a complete set of relational algebra operations?

- | | | |
|----------------------------------|--------------------------|-------------------------------|
| (a) $\{ \sigma, \pi, \cup \}$ | (b) $\{ \div, \times \}$ | (c) $\{ \sigma, \pi, \cap \}$ |
| (d) $\{ \pi, \cap, \sigma, - \}$ | (e) $\{ -, \times \}$ | |

Questions 24 and 25 are based on the relations *Student* and *Instructor* as given below. Please note that Fname and Lname also denote the First Name and Last Name respectively.

Student

First Name	Last Name
Saman	Perera
Romesh	Dias
Jeeva	Silva
Nadee	Alwis
Kumari	Costa
Geetha	Zoysa
Prasad	Fernando

Instructor

Fname	Lname
Ajith	Gamage
Sujith	Hewage
Saman	Perera
Kasun	Peiris
Romesh	Dias

- 24) Which of the following statements is/are correct with respect to the two relations given above?

- | |
|---|
| <ul style="list-style-type: none"> (a) The two relations are not union-compatible since their attribute names differ. (b) The two relations are union-compatible since they have the same type of tuples. (c) The set operations such as CARTESIAN PRODUCT and DIVISION can be applied on these two relations. (d) To find out those students who work as instructors, it is necessary to perform the operation $Student \cap Instructor$. (e) To find out the students who are not instructors, it is necessary to perform the operation $Student \div Instructor$. |
|---|

- 25) Consider the following table obtained using Student and Instructor relations.

Fname	Lname
Ajith	Gamage
Sujith	Hewage
Kasun	Peiris

Which relational algebra operation could have been applied on the pair of relations Student and Instructor to obtain the above data?

- | | | |
|-------------------------------|-------------------------------|----------------------------|
| (a) $Student \cap Instructor$ | (b) $Instructor \div Student$ | (c) $Student - Instructor$ |
| (d) $Student \cup Instructor$ | (e) $Instructor - Student$ | |

- 26) Consider the sequence of operations given below on the relation Employee (EmpNo, Name, Address, Bdate, Gender, Salary, SuperNo, DNo).

- (i). $DEP5_EMPS \leftarrow (\sigma_{DNo=5} (Employee))$
- (ii). $RESULT1 \leftarrow \pi_{EmpNo}(DEP5_EMPS)$
- (iii). $RESULT2(EmpNo) \leftarrow \pi_{SuperNo}(DEP5_EMPS)$
- (iv). $RESULT \leftarrow RESULT1 \cup RESULT2$

What will the above sequence of operations performed on the given relation produce?

- (a) EmpNo of the DNo 5 who work either as an employee or a supervisor.
- (b) EmpNo of the employees who work in DNo 5 along with the employees of DNo 5 who work as supervisors.
- (c) EmpNo of the DNo 5 employees who work as supervisors.
- (d) EmpNo of the employees who either work in DNo 5 or supervise an employee who works in DNo 5.
- (e) EmpNo of the employees who work as supervisors for the employees in DNo 5.

- 27) Employee table has Emp_ID as the primary key and Dept_Code as the foreign key from the Department table. A department can be deleted only if there are no employees working in it. Which one of the following SQL segments is/are correct to denote the constraint?

- (a) CONSTRAINT Emp_ID_PK PRIMARY KEY(Emp_ID)
- (b) CONSTRAINT Emp_ID_PK PRIMARY KEY(Emp_ID), CONSTRAINT Dept_Code_FK FOREIGN KEY(Dept_Code) REFERENCES Department(Dept_Code) ON DELETE
- (c) CONSTRAINT Emp_ID_PK PRIMARY KEY(Emp_ID), CONSTRAINT Dept_Code_FK FOREIGN KEY(Dept_Code) REFERENCES Department(Dept_Code) ON DELETE CASCADE
- (d) CONSTRAINT Emp_ID_PK PRIMARY KEY(Emp_ID), CONSTRAINT Dept_Code_FK FOREIGN KEY(Dept_Code) REFERENCES Department(Dept_Code) ON DELETE RESTRICT
- (e) CONSTRAINT Emp_ID_PK PRIMARY KEY(Emp_ID), CONSTRAINT Dept_Code_FK FOREIGN KEY(Dept_Code) REFERENCES Department(Dept_Code)

- 28) Consider the two relations,

Supplier (S_no, S_name, Contact_No, Address) and

Supply (S_no, Item_no).

Which of the following statements give(s) a list of supplier names supplying the item with Item_no '555'?

- (a) SELECT S_name FROM Supplier WHERE S_no IN (SELECT S_no FROM Supply WHERE Item_no='555')
- (b) SELECT S_name FROM Supplier WHERE Item_no='555'
- (c) SELECT S_name FROM Supplier, Supply WHERE Supplier.S_no=Supply.S_no AND Item_no='555'
- (d) SELECT S_name FROM Supplier WHERE S_no EXISTS (SELECT S_no FROM Supply WHERE Item_no='555')
- (e) SELECT S_name FROM Supplier WHERE S_name EXISTS (SELECT S_name FROM Supply WHERE Item_no='555')

- 29) If W, X, Y and Z are attributes of a relation, which of the following inference rules for functional dependencies is/are correct?

- (a) If $X \supseteq Y$ then $Y \rightarrow X$.
- (b) If $X \rightarrow Y$ then $(X, Z) \rightarrow (Y, W)$.
- (c) If $X \rightarrow (Y, Z)$ then $X \rightarrow Y$.
- (d) If $(X, Z) \rightarrow Y$ then $X \rightarrow Y$ and $Z \rightarrow Y$.
- (e) If $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow (Y, Z)$.

- 30) The following table gives details of employees in a company department.

Emp_ID	Job	Salary	Des_ID
110	Designing	25000	SW
115	Calibrating	19000	QA
120	Programming	26000	SW
135	Quality Assuring	18000	QA
150	Consulting	45000	CO
168	Consulting	35000	CO
188	Analysis and Design	22000	SW

Which of the following SQL statements give(s) the average Salary for each designation ID (Des_ID)?

- (a) SELECT AVG(Salary) FROM Employee
- (b) SELECT Des_ID,AVG(Salary) FROM Employee ORDER BY Des_ID
- (c) SELECT Des_ID,Salary FROM Employee GROUP BY Des_ID
- (d) SELECT Des_ID,AVG(Salary) FROM Employee GROUP BY Des_ID
- (e) SELECT Des_ID, AVG(Salary) FROM Employee

- 31) Consider the two relations Project and Allocation as given in the tables below.

Project		
Proj_No	Proj_Name	Head
A11	MM	Amal
A12	SAE	Arun
A13	PP	Sali

Allocation		
Proj_No	Emp_ID	Hours
A11	P12000	4
A12	L13000	5
A13	T14000	8

Which of the following SQL statements update(s) the duration of the project named 'SAE' to 20 Hrs?

- (a) UPDATE Allocation SET Hours=20
- (b) UPDATE SET Hours=20 from Allocation AND Proj_Name='SAE' from Project
- (c) UPDATE Allocation SET Hours=20 WHERE Proj_No IN (SELECT Proj_No FROM Project WHERE Proj_Name='SAE')
- (d) UPDATE Allocation SET Proj_Name='SAE' WHERE Hours=20
- (e) UPDATE SET Hours=20 FROM Project, Allocation WHERE Proj_Name='SAE'

- 32) Consider the relations,

Supplier(S_no,S_name,city) and

Item(Item_no, Item_name, Item_Brand, S_no).

Which of the following SQL statements give(s) suppliers' names who have submitted at least one 'Nestle' brand item?

- (a) SELECT S_name FROM Supplier S, Item I WHERE I.Item_Brand='Nestle'
- (b) SELECT S_name FROM Supplier S, Item I WHERE S.S_no=I.S_no AND Item_Brand='Nestle'
- (c) SELECT S_name FROM Supplier S WHERE S_no IN (SELECT S_no FROM Item WHERE Item_Brand='Nestle')
- (d) SELECT S_name FROM Supplier S WHERE Item_Brand='Nestle'
- (e) SELECT S_name FROM Supplier WHERE S_no EXISTS (SELECT S_no FROM Supplier, Item WHERE Item_Brand='Nestle')

Questions 33 and 34 are based on the two relations,

Department (Dept_Code, Dep_Name, Dept_Head) and

Employee (Emp_ID, Emp_Name, Designation, DoB, Dept).

- 33) Which SQL statements create(s) (a) view(s) to see the number of employees in each department?

- (a) CREATE VIEW Dept_Employees(Dept_Code, No_of_Employees) AS SELECT Dept, Count(*) FROM Employee GROUP BY Dept
- (b) CREATE VIEW Dept_Employees(Dept_Code, No_of_Employees) AS SELECT Dept, Count(Dept_Code) FROM Employee GROUP BY Dept
- (c) CREATE VIEW Dept_Employees(Dept_Code, No_of_Employees) AS SELECT Dept, Count(*) FROM Employee GROUP BY Emp_ID
- (d) CREATE VIEW Dept_Employees(Dept_Code, No_of_Employees)
- (e) CREATE VIEW Dept_Employees(Dept_Code, No_of_Employees) AS SELECT Dept, Count(DISTINCT Emp_ID) FROM Employee GROUP BY Dept

- 34) Which of the following SQL statements drop(s) the primary key of Department relation? The fields in Employee should reflect the removal in Department table.

- (a) ALTER TABLE Department DROP PRIMARY KEY
- (b) ALTER TABLE Department DROP PRIMARY KEY(Dept_Code)
- (c) ALTER TABLE Department DROP PRIMARY KEY CASCADE
- (d) ALTER TABLE Department DROP PRIMARY KEY RESTRICT
- (e) DROP PRIMARY KEY Dept_Code FROM Department CASCADE

- 35) The following table gives product details of a company.

P_Code	P_Description	P_Indate	P_Price
AB12	PVC pipe	7/6/2004	256.99
WX14	Metal Screw	8/7/2004	119.95
CD15	Sledge Hammer	7/9/2004	109.92
AQ48	Cloth	7/5/2004	38.95
RT03	Jigsaw	8/12/2004	107.48

Which SQL statements give(s) the product codes which have prices for products above the overall average price in increasing order?

- (a) SELECT P_Code, P_Price FROM Product WHERE P_Price > (SELECT AVG(P_Price) FROM Product) ORDER BY P_Price ASC
- (b) SELECT P_Code, P_Price FROM Product WHERE P_Price > (SELECT AVG(P_Price) FROM Product)
- (c) SELECT P_Code FROM Product HAVING P_Price > (SELECT AVG(P_Price) FROM Product)
- (d) SELECT P_Code FROM Product WHERE P_Price > (AVG(P_Price) FROM Product) ORDER BY DESC
- (e) SELECT P_Code FROM Product HAVING P_Price > (SELECT AVG(P_Price) FROM Product) ORDER BY DESC

- 36) Which of the following is/are correct statements about SQL?

- (a) Data Control Language provides facilities to retrieve data.
- (b) Data Manipulation Language can delete all records and tables in a database.
- (c) Data Definition Language provides facilities to add more data into a database while providing integrity of data.
- (d) Data Manipulation Language provides facilities to remove data from a table.
- (e) Data Definition Language provides facilities to modify structures of tables.

37) Consider the following SQL statement:

```
GRANT SELECT, UPDATE(Designation) ON Employee TO Amali,Hiruni WITH GRANT OPTION;
```

What does this SQL statement do?

- (a) Grant permission to Amali, only to retrieve data from Employee table and grant permission to Hiruni, only to update the designation from Employee table.
- (b) Grant permission to Amali & Hiruni to retrieve data from Employee table.
- (c) Grant permission to Hiruni in order to grant, select and update permission to Amali.
- (d) Grant permission to Amali & Hiruni to update designation of employees in the Employee table.
- (e) Grant permission to Amali and Hiruni to update all data except designation in Employee table.

38) Consider the following Employee table.

Employee Table

E No	Job	Salary	Dept No
178	System Analyst	25000	10
179	Software Engineer	30000	10
180	Quality Assurer	21000	20
181	Technical Writer	17000	30
182	Associate Software Engineer	20000	10

Which of the following statements give(s) the list of departments having average salary greater than 20000/= from employee table?

- (a) SELECT Dept_No,AVG(Salary) FROM Employee ORDER BY Dept_No HAVING AVG(Salary)>20000
- (b) SELECT Dept_No,AVG(Salary) FROM Employee HAVING AVG(Salary)>20000
- (c) SELECT Dept_No,AVG(Salary) FROM Employee GROUP BY Dept_No HAVING AVG(Salary)>20000
- (d) SELECT Dept_No,AVG(Salary) FROM Employee WHERE AVG(Salary)>20000
- (e) SELECT Dept_No,AVG(Salary) FROM Employee GROUP BY Dept_No WHERE AVG(Salary)>20000

39) The Database Administrator has created four accounts – X1, X2, X3 and X4. Consider the following statements (i) – (v).

- (i) DBA has issued GRANT CREATETAB TO X1;
- (ii) X1 has issued GRANT INSERT,DELETE ON INVOICE TO X2;
- (iii) X1 has issued GRANT SELECT ON INVOICE TO X3 WITH GRANT OPTION;
- (iv) X2 has issued GRANT INSERT, DELETE ON INVOICE TO X4 WITH GRANT OPTION;
- (v) X1 has issued REVOKE SELECT ON INVOICE FROM X2;

Select the correct observation(s) on the above statements from among the following:

- (a) DBA has issued account privileges to X1 in statement (i).
- (b) X1 has granted insert and delete permissions in statement (ii) to X2 and it is a legal permission.
- (c) X1 cannot grant account privileges to X3 in statement (iii) since he has already used it for X2 in statement (ii).
- (d) X1 cannot issue REVOKE command in statement (v).
- (e) X2 cannot grant accounts privileges to X4 in statement (iv).

- 40) Which of the following strategies is/are used in implementing a view for querying?
- | | | |
|---------------------------|------------------------------|------------------------|
| (a) query modification | (b) query assertion | (c) query optimization |
| (d) query materialization | (e) query incremental update | |
- 41) Which of the following statements is/are correct with respect to a view in SQL?
- | |
|---|
| (a) A view is a single table that is derived from other tables.
(b) A view can be derived from previously defined views.
(c) A view is updatable if it is defined on multiple tables using joins.
(d) A view is not updatable if it is defined using grouping and aggregate functions.
(e) A view can not be derived from previously defined views. |
|---|
- 42) Select the correct statement(s) from among the following on Distributed Database Systems.
- | |
|---|
| (a) The database is stored in one central location and accessed from local sites and remote locations.
(b) Configuration independence strategy enables the organization to add or replace hardware without changing the existing software components of the DDBMS.
(c) One of the software modules in DDBMS architecture called transaction manager communicates with data manager directly to complete a transaction.
(d) Location transparency enables a user to access data without knowing, or being concerned with, the site at which the data resides.
(e) A method of identifying messages with their time of transmission is called timestamping. |
|---|
- 43) Compared to transactional databases, data warehouses
- | |
|---|
| (a) support time-series and trend analysis.
(b) are stores of integrated data from multiple sources.
(c) change frequently and can be regarded as real-time.
(d) use transactions which are the unit and are the agent of change to the database.
(e) are collections of decision support technologies. |
|---|
- 44) In a distributed database system, a number of sites are interconnected in several ways and choosing a single network configuration is based on
- | |
|---|
| (a) the cost of physically linking the stations in the system.
(b) the cost of sending a message from station A to station B.
(c) the type of scheduling algorithms used.
(d) the way that the transactions are serialized.
(e) the frequency and volume of data that must be accessed. |
|---|
- 45) Embedded SQL means
- | |
|--|
| (a) using the EMBED key word in a SQL statement.
(b) writing a SQL statement to retrieve data from more than one relation.
(c) writing SQL statements within codes written in a general programming language.
(d) specifying a condition and action to be taken in case the given condition is satisfied in a trigger.
(e) using SQL language constructs like <i>revoke</i> and <i>grant</i> respectively for revoking and granting privileges to users. |
|--|
