

Version : A.

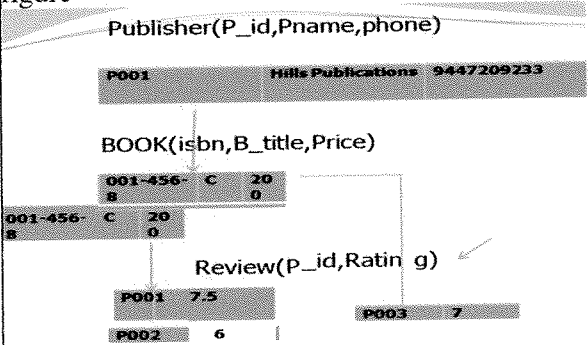
## Scoring Indicators

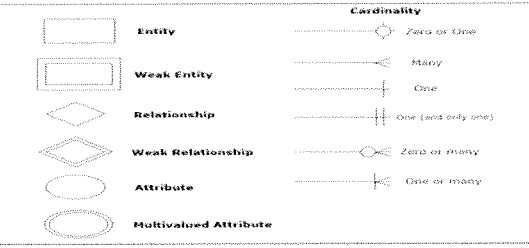
COURSENAME : Database Management System

COURSECODE: 3133.

QID: 211220198

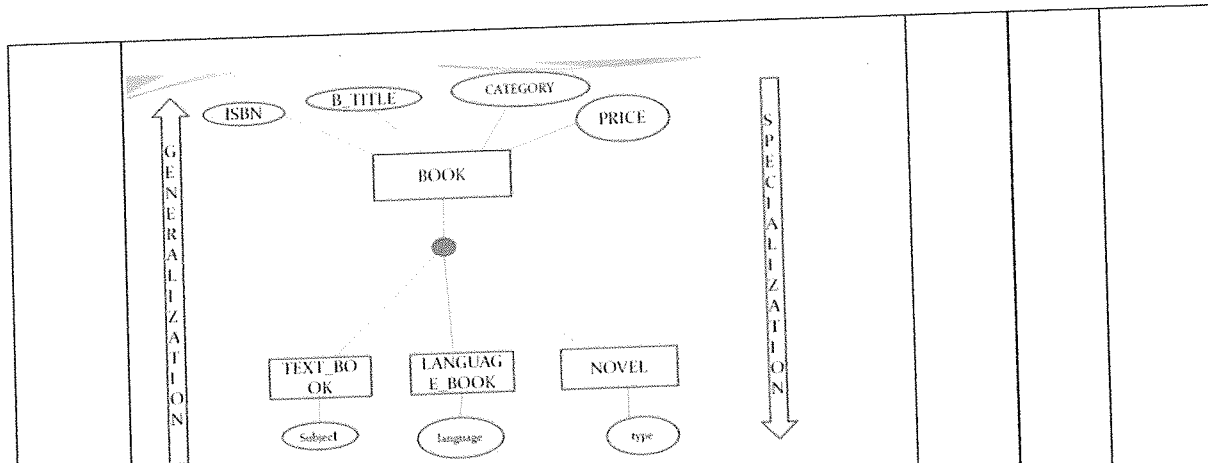
QNo	ScoringIndicators	Split score	Sub Total	Total score
<b>PART A</b>				<b>9</b>
I.1	It is the ability to change schema at one level of db system without having to change the schema at the other levels .	1	1	
I.2	Hierarchical datamodel Network datamodel Relational data model	1	1	
I.3	Select col1,col2....from table name where (condition);	1	1	
I.4	Alter Table table name ADD column name data type (size);	1	1	
I.5	Specialisation Generalisation Aggregation	1	1	
I.6	Count(*)	1	1	
I.7	Normalization is the process of removing redundant data from tables in order to improve storage efficiency, data integrity and scalability.	1	1	
I.8	A relation is in first normal form if every attribute in that relation is <b>singled valued attribute</b> . Multi valued, composite and their combination are not allowed in 1 NF.	1	1	
I.9	A <b>weak entity</b> set is an entity set that does not have any key attribute.	1	1	
<b>PART B</b>				<b>24</b>
II.1	Any 3 points  1. The following are some of the most important and well-known characteristics of DBMS: 2. Real World Entity. 3. Self Explaining Nature. 4. Atomicity of Operations. 5. Stores Any Kind of Structured Data. 6. Concurrent Access without Anomalies. 7. Ease of Access (The DBMS Queries). 8. Integrity.	1+1+1	3	

II.2	<ul style="list-style-type: none"> <li>■ It is divided into two categories- single user system and multi user system.</li> <li>■ In single user system, the database resides on one computer and is only accessed by one user at a time.</li> <li>■ Eg:-Microsoft Outlook, Quicken,...</li> <li>■ In multi user system, multiple users can access the database simultaneously.</li> <li>■ Eg:Databases of Banks, Insurance Agencies,...</li> </ul>	1.5	3	3
		1.5		
II.3	<p>Any 3 points</p> <ul style="list-style-type: none"> <li>■ Schema definition and modification</li> <li>■ New Software Installation</li> <li>■ Security enforcement and administration</li> <li>■ Data analysis</li> <li>■ Preliminary data base design</li> <li>■ Routine maintenance checks</li> </ul>	1+1+1	3	
II.4	<p>Explanation</p> <p>A hierarchical database model is a data model in which the data are organized into a tree-like structure. The data are stored as records which are connected to one another through links. A record is a collection of fields, with each field containing only one value.</p> <p>figure</p> 	1.5	3	3
		1.5		
II.5	<p>Syntax:-</p> <p>INSERT INTO TABLE_NAME (columnname1,columnname2,...)</p> <p>VALUES (value1, value2, value 3, .... Value N);</p> <p>Eg:-INSERT INTO STUDENT</p> <p>(Regno,name,Housename,Place) VALUES (160123,</p> <p>'Sree', 'Tholloor', 'TVM');</p>	1.5	3	3
		1.5		

II.6	<p>COUNT(*) will count all the rows in the table, including NULL values</p> <p>COUNT(column name) will count all the rows in the specified column while excluding NULL values.</p>	1.5  1.5	3	3
II.7	<p>Sql&gt;Create procedure emp1() Begin SELECT * FROM STUDENT; End Then execute procedure by calling Sql&gt;CALL emp1();</p>	1  1  1	3	3
II.8	<p>Select ISBN,Book_Title,Category from BOOK where price=(select Min(price) from BOOK);</p>	3	3	3
II.9	<p>Any 3 symbols</p>  <p>The legend shows symbols for Entity (rectangle), Weak Entity (double rectangle), Relationship (diamond), Weak Relationship (double diamond), Attribute (oval), and Multivalued Attribute (double oval). It also includes a 'Cardinality' section with symbols for Zero or One, Many, One, One (and only one), Zero or many, and One or many.</p>	3*1	3	3
II.10	<p>Any 3 ACID Properties</p> <p>Atomicity</p> <p>Consistency</p> <p>Isolation</p> <p>Durability</p>	3*1	3	3



Relation Name	Attributes																																													
STUDENT	<table border="1"> <thead> <tr> <th>Name</th> <th>Sen</th> <th>Home_phone</th> <th>Address</th> <th>Office_phone</th> <th>Age</th> <th>Gpa</th> </tr> </thead> <tbody> <tr> <td>Benjamin Bayer</td> <td>305-61-2435</td> <td>(817)373-1616</td> <td>2918 Bluebonnet Lane</td> <td>NULL</td> <td>19</td> <td>3.21</td> </tr> <tr> <td>Chung-cha Kim</td> <td>381-62-1245</td> <td>(817)375-4409</td> <td>125 Kirby Road</td> <td>NULL</td> <td>18</td> <td>2.89</td> </tr> <tr> <td>Dick Davidson</td> <td>422-11-2320</td> <td>NULL</td> <td>3452 Elgin Road</td> <td>(817)749-1253</td> <td>25</td> <td>3.53</td> </tr> <tr> <td>Rohan Panchal</td> <td>489-22-1100</td> <td>(817)376-9821</td> <td>265 Lark Lane</td> <td>(817)749-6492</td> <td>28</td> <td>3.93</td> </tr> <tr> <td>Barbara Benson</td> <td>533-69-1238</td> <td>(817)839-8461</td> <td>7384 Fontana Lane</td> <td>NULL</td> <td>19</td> <td>3.25</td> </tr> </tbody> </table>	Name	Sen	Home_phone	Address	Office_phone	Age	Gpa	Benjamin Bayer	305-61-2435	(817)373-1616	2918 Bluebonnet Lane	NULL	19	3.21	Chung-cha Kim	381-62-1245	(817)375-4409	125 Kirby Road	NULL	18	2.89	Dick Davidson	422-11-2320	NULL	3452 Elgin Road	(817)749-1253	25	3.53	Rohan Panchal	489-22-1100	(817)376-9821	265 Lark Lane	(817)749-6492	28	3.93	Barbara Benson	533-69-1238	(817)839-8461	7384 Fontana Lane	NULL	19	3.25			
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III.3	<p>a. Create table STUDENT(Roll_No int(6) Primary key, Name VARCHAR (20) , Place varchar (25));</p> <p>b. INSERT INTO STUDENT(Roll_No ,Name,Place)VALUES (1,'Manu', 'Kollam');</p> <p>c. Select * from STUDENT where Name Like 'A%';</p>	2+1 2 2	3 2 2	7																																										
III.4	<p>Create table EMPLOYEE(EMP_ID varchar(15) , Name VARCHAR (20) , Designation CHAR (25), Salary numeric(9,2 ));</p> <p>Select name from EMPLOYEE where salary&gt;50000;</p> <p>Select * from EMPLOYEE where Designation='peon';</p>	2+1 2 2	3 2 2	7																																										
III.5	<p>Listing</p> <p>Explanation of 3 features</p> <ul style="list-style-type: none"> <li>• Specialization</li> <li>• Generalization</li> <li>• Aggregation.</li> </ul> <p>Specialization The process of defining the subgroups of a given entity type is known as specialization. Specialization uses top-down approach. Specialization starts with a single higher-level entity type and ends with a set of lower-level entity types</p>	1 3*2	1 6	7																																										

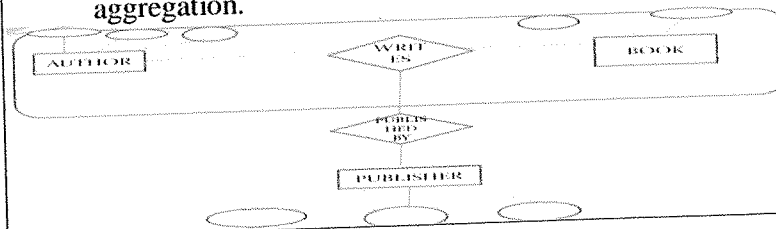


**Generalization**

- It is the reverse process of Specialization.
- The design process follows a bottom-up approach;
  - in which multiple lower-level entity types are combined on the basis of common features to form higher-level entity types.

**Aggregation**

- The process through which one can treat the relationships as higher-level entities is known as aggregation.



**III.6 Explanation**

- If an entity types has composite attributes , no separate attribute is created for the composite attribute itself.
- Instead, separate attributes for each of its component attributes are created.

Figure

Reg NO	Name	Country	State	pin

**III.7 Reducing Data Redundancy..**

- Sharing of Data.
- Data Integrity.
- Data Security.
- Privacy.
- Backup and Recovery.
- Data Consistency.

3			
4	7	7	
7*1	7	7	

III.8	<p><b>Explanation</b> Is a relationship that exists when one attribute uniquely determines another attribute. A special form of integrity constraints.</p> <p><b>Example</b> Let X and Y be the arbitrary subsets of set attributes of a relation schema R, then an instance r of R satisfies functional dependency (FD) <math>X \rightarrow Y</math>, if and only if for any tuples t1 and t2 in r that have t1[X] = t2[X], they must also have t1[Y] = t2[Y].</p> <ul style="list-style-type: none"> <li>The statement <math>X \rightarrow Y</math> is read as Y is functionally dependent on X or X determines Y.</li> </ul>	3  4	7	7												
III.9	<p><b>The Lost Update Problem</b></p> <p>This occurs when two transactions that access the same database items have their operations interleaved in a way that makes the value of some database item incorrect.</p> <p><b>The Temporary Update (or Dirty Read) Problem</b></p> <p>This occurs when one transaction updates a database item and then the transaction fails for some reason .</p> <p><b>The Incorrect Summary Problem</b></p> <p>If one transaction is calculating an aggregate summary function on a number of records while other transactions are updating some of these records, the aggregate function may calculate some values before they are updated and others after they are updated.</p> <p><b>Figure 17.3</b> Some problems that occur when concurrent execution is uncontrolled. (a) The lost update problem. (b) The temporary update problem. (c) The incorrect summary problem.</p> <p>(a)</p> <table border="1" data-bbox="411 1541 614 1796"> <thead> <tr> <th></th> <th><math>T_1</math></th> <th><math>T_2</math></th> </tr> </thead> <tbody> <tr> <td>Time</td> <td>read_item(X); <math>X := X - N;</math></td> <td>read_item(X); <math>X := X + M;</math></td> </tr> <tr> <td></td> <td>write_item(X); read_item(Y);</td> <td>write_item(X);</td> </tr> <tr> <td></td> <td><math>Y := Y + N;</math> write_item(Y);</td> <td></td> </tr> </tbody> </table> <p>← Item X has an incorrect value because its update by <math>T_1</math> is lost (overwritten).</p>		$T_1$	$T_2$	Time	read_item(X); $X := X - N;$	read_item(X); $X := X + M;$		write_item(X); read_item(Y);	write_item(X);		$Y := Y + N;$ write_item(Y);		2  2  2	7	7
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III. 10	<p><b>Figure</b></p> <p><b>Figure 174</b> State transition diagram illustrating the states for transaction execution.</p> <p><b>Explain each state.</b></p>	3	7	7												
III. 11	<p><b>ER Diagram representation</b></p> <p><b>Cardinality</b></p> <p><b>Participation Constraints</b></p>	5	7	7												

III. 12	<u>The components of a mobile database environment include:</u> <ul style="list-style-type: none"> <li>• Corporate database server and DBMS that deals with and stores the corporate data and provides corporate applications</li> <li>• Remote database and DBMS usually manages and stores the mobile data and provides mobile applications</li> <li>• mobile database platform that includes a laptop, PDA, or other Internet access devices</li> <li>• Two-way communication links between corporate and mobile DBMS.</li> </ul>	2 2 2 1	7	7
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