

# CBSE AISSCE 2018 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90)

## General Instructions:

- Marking scheme is the final document for all references with regard to evaluation and cannot be altered under any circumstance.
- The answers given in the marking scheme are SUGGESTIVE. Examiners are expected to award marks for all alternative correct Solutions/Answers conveying the similar meaning.
- All programming questions have to be answered with respect to Java Language only.

## In Java,

- Ignore case sensitivity for Variable identifiers in programming codes.

## In SQL related questions :

- Single quote ‘ ’ as well as double quote “ ” should be accepted for text/character/date entries. For example: “AMAR” and ‘amar’ both are acceptable.
- Date entries should be accepted in all formats. For example: ‘YYYY-MM-DD’, ‘YY-MM-DD’, ‘DD-Mon-YY’, “DD/MM/YY”, ‘DD/MM/YY’, “MM/DD/YY”, ‘MM/DD/YY’ and {MM/DD/YY} are correct.
- Semicolon should be ignored for terminating the SQL statements.
- Ignore case sensitivity for commands.
- Ignore headers in output questions.

1	(a)	ABC Company wants to link its computers in Head office in New Delhi to its office in Sydney. Name the type of Network that will be formed. Which communication media should be used to form this Network?	2	
	<b>Ans</b>	Type of network that will be formed : Wide Area Network(WAN) Transmission media to be used : Satellite		
		<b>(1 mark for each part)</b>		
	(b)	Which of the following is/are <b>not</b> communication media ? (i) Microwaves (ii) Optical Fiber cable (iii) Node (iv) Radio waves Identify which of the above mentioned communication media are Wired media and which ones are Wireless media.	2	
	<b>Ans</b>	Not communication media : Node Wired media : Optical Fiber cable Wireless media : Microwaves , Radio waves		
		<b>(½ mark for identifying Node as not a communication media ) (½ mark for identifying wired media) (½ mark each for identifying wireless media)</b>		
	(c)	Write two examples each of software in the following categories: (i) Open Source Operating System (ii) Open Source Web Browser	2	
	<b>Ans</b>	(i) Linux, Android, FreeBSD, OpenBSD, NetBSD, DragonFly BSD, OpenSolaris, illumos, AuroraUX, Darwin, OpenDarwin, MINIX, FreeRTOS, FreeDOS, Haiku, House KolibriOS, MenuetOS, GNU, ReactOS, L4, Fiasco, Pistachio, Plan 9, AROS, Syllable, Inferno, NuttX, eCos, RTEMS, HelenOS, E/OS, TempleOS, Linux, BOSS, Ubuntu, Kali Linux (ii) Mozilla Firefox, Google Chrome, Opera, QupZilla, Midori, rekonq, Tor Browser, NetSurf, Pale Moon, GNOME Web		
		<b>(½ mark each for mentioning any two valid Open Source Operating System) (½ mark each for mentioning any two valid Open Source Web Browser)</b>		
	(d)	Expand the following terms : (i) GSM (ii) IP	2	

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	<b>Ans</b>	(i) GSM - Global System for Mobile Communications/ Global System for Mobile/ Graphics Stimulator Media (ii) IP - Internet Protocol		
		<b>(1 mark for each correct answer)</b>		
	(e)	Name the devices: (i) This device constantly looks at all the data entering and exiting your connection. It can block or reject data in response to an established rule. (ii) This device connects multiple nodes to form a network. It redirects the received information only to the intended node(s).	2	
	<b>Ans</b>	i) Firewall ii) Switch		
		<b>( 1 mark for each correct part)</b>		
2	(a)	Identify the invalid variable names. State the reason if invalid. (i) Marks Unit (ii) Product_1 (iii) Sales123 (iv) 2Marks	1	
	<b>Ans</b>	Invalid variable names are : (i) Marks Unit Reason : Variable Name should not contain space (iv) 2Marks Reason : Variable Name should not start with digit		
		<b>(1 mark for identifying any one invalid variable name and stating the reason)</b> <b>Note: Full 1 mark to be awarded if both invalid variable names are identified but reasons are not given)</b>		
	(b)	Write the data type of variables that should be used to store: (i) Marks of students (ii) Grades of students(Grade can be 'A' or 'B' or 'C')	1	
	<b>Ans</b>	(i) <b>float/double /int / byte / short / long</b> (ii) <b>char</b>		
		<b>( ½ mark for each part)</b> <b>Note : Valid data types of MySQL(integer/int/decimal/char/varchar) should also be accepted.</b>		
	(c)	Write examples of any two properties and any two methods of JButton component	2	
	<b>Ans</b>	<b>Properties of JButton component :</b> Background, font, label, text, name, editable, enabled, horizontalalignment, border <b>Methods of JButton component :</b> setText(), getText(), setEnabled(), setVisible(), setEditable(), setVisible(), isSelected(), setSelected()		
		<b>(½ mark each for mentioning any two valid properties)</b> <b>(½ mark each for mentioning any two valid methods)</b>		
	(d)	Write the purpose of HTML. Distinguish between <P> and   tag.	2	

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	<b>Ans</b>	HTML is used to create web page(s). <P> tag is used to introduce a paragraph while   tag is used to introduce a line break on a web page. <i>Note: &lt;P&gt; as paragraph tag and &lt;BR&gt; as line break tag to be accepted as difference</i>		
		<i>(1 mark for stating the purpose) ( 1 mark for correct difference)</i>		
	(e)	Distinguish between ComboBox and ListBox. When would you prefer using them over Radiobutton and Checkbox?	2	
	<b>Ans</b>	A ComboBox allows selection of one item from a set of items . while ListBox provides a scrollable set of items from which one or more item(s) may be selected. When the number of items are more Combobox or ListBox would be preferred over Radiobutton and Checkbox.		
		<i>(1 mark for correct difference) (1 mark for stating the preference)</i>		
	(f)	Rewrite the following code using switch statement: <pre>if ( code == 'A' )     allowance = 3500; else if ( code == 'B' )     allowance = 3200 ; else     allowance = 2000 ;</pre>	2	
	<b>Ans</b>	<pre>switch (code) { case 'A' : allowance = 3500;         break ; case 'B' : allowance = 3200;         break ; default : allowance = 2000; }</pre> <i>Note:65 in place of 'A' and 66 in place of 'B' should be accepted</i>		
		<i>(½ mark for correct use of switch) (½ mark for correct use of case) (½ mark for correct assigning of allowance) (½ mark for correct use of default)</i>		
3	(a)	What is MySQL used for? Abhay wants to start learning MySQL. From where can he obtain the MySQL software ?	1	
	<b>Ans</b>	i) MySQL is an open source RDBMS used for managing databases. ii) For obtaining MySQL , Abhay has the following options : <ul style="list-style-type: none"> <li>● download from the website mysql.org</li> <li>● download it from any website that offers MySQL.</li> <li>● get the software from any source</li> </ul>		
		<i>(½ mark for part i) (½ mark for stating any one valid option for part ii)</i>		
	(b)	In the table “Student”, Priya wanted to increase the Marks(Column Name:Marks) of those students by 5 who have got Marks below 33. She has entered the following statement:	1	

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	<p><b>SELECT Marks+5 FROM Student WHERE Marks&lt;33;</b> Identify errors(if any) in the above statement. Rewrite the correct SQL statement.</p>										
<b>Ans</b>	<p>Error : <b>UPDATE</b> should be used instead of <b>SELECT</b> Correct SQL statement: <b>UPDATE Student SET Marks= Marks+5</b> <b>WHERE Marks&lt;33;</b></p>										
	<p><i>(½ mark for only identifying the error)</i> <b>Note: Full 1 mark to be allotted if only correct SQL statement is written</b></p>										
(c)	<p>(i) Name the Data type that should be used to store AccountCodes like “A1001” of Customers. (ii) Name two Data types that require data to be enclosed in quotes.</p>	2									
<b>Ans</b>	<p>(i) <b>char/varchar</b> (ii) <b>char/varchar/date</b></p>										
	<p><i>(i) (1 mark for mentioning any one correct data type)</i> <i>(ii) (½ mark each for mentioning any two correct data types)</i> <b>Note : String data type of Java should also be accepted for both (i) and (ii) parts and 1 mark each should be awarded</b></p>										
(d)	<p>Given the table ‘Player’ with the following columns : Table : Player</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px;">PCODE</th> <th style="padding: 2px;">POINTS</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">1</td> <td style="text-align: center; padding: 2px;">50</td> </tr> <tr> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: center; padding: 2px;">NULL</td> </tr> <tr> <td style="text-align: center; padding: 2px;">3</td> <td style="text-align: center; padding: 2px;">40</td> </tr> </tbody> </table> <p>Write the output of the following statements: (i) <b>SELECT AVG (POINTS)</b> <b>FROM Player;</b> (ii) <b>Select COUNT (POINTS) FROM Player;</b></p>	PCODE	POINTS	1	50	2	NULL	3	40	2	
PCODE	POINTS										
1	50										
2	NULL										
3	40										
<b>Ans</b>	<p>(i) <u><b>AVG (POINTS)</b></u> <b>45</b> (ii) <u><b>COUNT (POINTS)</b></u> <b>2</b></p>										
	<p><i>(1 mark each for each part)</i></p>										
(e)	<p>‘Class’ table has columns <b>RNO</b> and <b>NAME</b>. The following statements are executed: <b>SET AUTOCOMMIT = 0;</b> <b>INSERT INTO CLASS VALUES (5, ‘Rajiv’);</b> <b>COMMIT;</b> <b>UPDATE CLASS SET NAME = ‘Rajeev’ WHERE ID = 5;</b> <b>SAVEPOINT A;</b> <b>INSERT INTO CLASS VALUES (6, ‘Chris’);</b> <b>SAVEPOINT B;</b> <b>INSERT INTO CLASS VALUES (7, ‘Feroze’);</b> <b>SELECT * FROM CLASS;</b> <b>ROLLBACK TO B;</b> <b>SELECT * FROM CLASS;</b> What will be the output of both the above given SELECT statements ?</p>	2									

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<b>Ans</b>	<p>(Case 1: If RNO is treated as ID, the following solution should be accepted:)</p> <p><b>Output of SELECT statement 1 :</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>RNO</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Rajeev</td> </tr> <tr> <td>6</td> <td>Chris</td> </tr> <tr> <td>7</td> <td>Feroze</td> </tr> </tbody> </table> <p><b>Output of SELECT statement 2 :</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>RNO</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Rajeev</td> </tr> <tr> <td>6</td> <td>Chris</td> </tr> </tbody> </table> <p>(Case 2 : If RNO is NOT treated as ID, the following should be accepted:)</p> <p><b>Output of SELECT statement 1 :</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>RNO</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Rajiv</td> </tr> <tr> <td>6</td> <td>Chris</td> </tr> <tr> <td>7</td> <td>Feroze</td> </tr> </tbody> </table> <p><b>Output of SELECT statement 2 :</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>RNO</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Rajiv</td> </tr> <tr> <td>6</td> <td>Chris</td> </tr> </tbody> </table>	RNO	NAME	5	Rajeev	6	Chris	7	Feroze	RNO	NAME	5	Rajeev	6	Chris	RNO	NAME	5	Rajiv	6	Chris	7	Feroze	RNO	NAME	5	Rajiv	6	Chris		
RNO	NAME																														
5	Rajeev																														
6	Chris																														
7	Feroze																														
RNO	NAME																														
5	Rajeev																														
6	Chris																														
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5	Rajiv																														
6	Chris																														
7	Feroze																														
RNO	NAME																														
5	Rajiv																														
6	Chris																														
	<p><b>Case 1 and 2 : ( 2 mark for output of <u>any one</u> of the SELECT statement)</b>  <b>Note : 2 marks for mentioning column name error</b></p>																														
(f)	<p>Name SQL Single Row functions (for each of the following) that</p> <p>(i) returns a number.</p> <p>(ii) returns lowercase letters.</p> <p>(iii) returns names of days. For example: “Monday “, “Tuesday”.</p> <p>(iv) returns weekday number. For example : 1 for Sunday , 2 for Monday , 3 for Tuesday.</p>	2																													
<b>Ans</b>	<p>(i) <code>length () / instr () / round () / truncate ()</code> or any other correct Single Row Function that returns a number</p> <p>(ii) <code>lower () / lcase ()</code></p> <p>(iii) <code>dayname ()</code></p> <p>(iv) <code>dayofweek ()</code></p>																														
	<p><i>(½ mark for each part)</i></p>																														
4 (a)	<p>Identify the error in the following code:</p> <pre style="margin-left: 40px;"> switch (c) { case 9.0 : a= a+2;           break; case 8.0 : a=a+3;           break; }                     </pre>	1																													

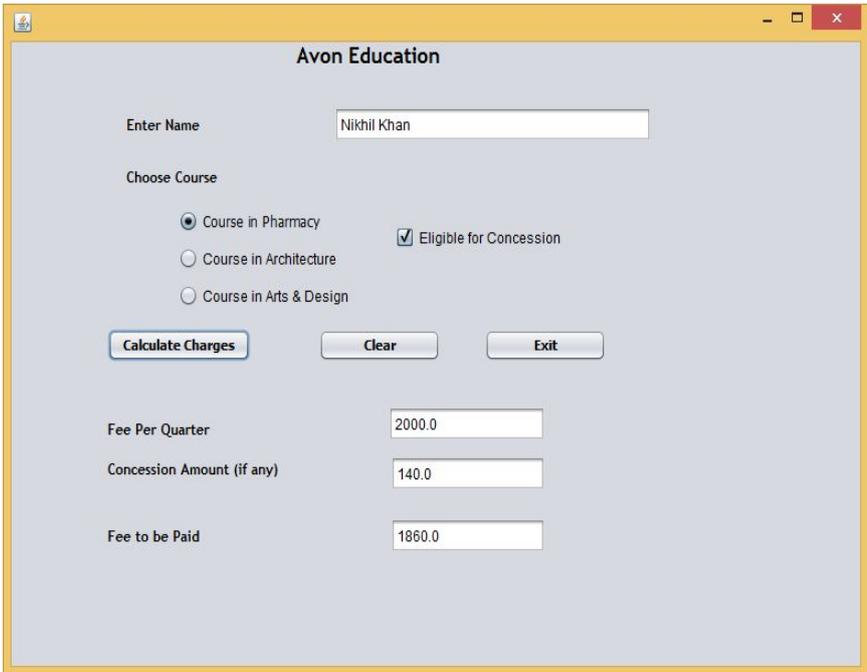
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	<b>Ans</b>	Variable 'c' cannot be of float/real data type. <i>Note: Full 1 mark should be allotted if correct code is written</i>		
		<i>(1 mark for identifying/ correcting the code)</i>		
	(b)	<p>What will be displayed in <code>JOptionPane</code> when the following code is executed?</p> <pre>int a=5, b = 2; while (a &lt; 20) {     a = a + b;     b = a - b;     JOptionPane.showMessageDialog(null, a); }</pre>	2	
	<b>Ans</b>	<p>7 12 19 31 OR 7 12 19 31</p>		
		<p><i>(½ mark for each correct value)</i> <i>Note : Full 2 marks should be allotted if only 31 is mentioned</i></p>		
	(c)	<p>Write the code given below using 'for' loop instead of 'while' loop:</p> <pre>int i=1; while(i&lt;=5) {     if(i * i == 4)         jTextField1.setText(""+i);     i=i+1; }</pre>	2	
	<b>Ans</b>	<pre>int i; for(i = 1; i &lt;= 5; i++) {     if(i * i == 4)         jTextField1.setText(""+i); }</pre>		
		<p><i>(½ mark for initialization expression)</i> <i>(½ mark for test expression)</i> <i>(½ mark for update expression)</i> <i>(½ mark body of loop)</i></p>		
	(d)	<p>Write the value that will be stored in variable <b>a</b> after execution of the following code if:</p> <p>(i) initial value of <b>a</b> is 8. (ii) initial value of <b>a</b> is 10.</p> <pre>int b = 9; if (a &gt; b)     a=a+5; a=a+2;</pre>	2	

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	<b>Ans</b>	i) 10 ii) 17										
		<i>(1 mark for each part)</i>										
	(e)	What will be the values of <b>i</b> and <b>z</b> after the following code is executed: <pre style="margin-left: 40px;"> int i = 0; int z = 10; do {     i=i+2;     z--; } while (i&lt;10);                 </pre>	2									
	<b>Ans</b>	i= 10 z = 5										
		<i>(1 mark for each correct value)</i>										
	(f)	Ms. Priya works as a programmer in “Avon Education” where she has designed a software to compute fee charges to be paid by the students. A screenshot of the same is shown below: <div style="text-align: center; margin: 10px 0;">  </div>										
		<ul style="list-style-type: none"> <li>Name of the student is entered by the user.</li> <li>Any one Course out of Pharmacy, Architecture and Arts &amp; Design is chosen by the user.</li> <li>If the student is eligible for Concession, the required checkbox is selected by the user.</li> <li>Based on the course selected, Fee Per Quarter is displayed in the appropriate textfield according to the following criterion:</li> </ul> <table border="1" style="margin-left: 40px; margin-top: 10px; border-collapse: collapse; width: 200px;"> <thead> <tr> <th style="text-align: left;">Course</th> <th style="text-align: left;">Fee Per Quarter</th> </tr> </thead> <tbody> <tr> <td>Pharmacy</td> <td>2000.00</td> </tr> <tr> <td>Architecture</td> <td>2500.00</td> </tr> <tr> <td>Arts &amp; Design</td> <td>2300.00</td> </tr> </tbody> </table>	Course	Fee Per Quarter	Pharmacy	2000.00	Architecture	2500.00	Arts & Design	2300.00		
Course	Fee Per Quarter											
Pharmacy	2000.00											
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Arts & Design	2300.00											

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		<ul style="list-style-type: none"> <li>If the student is eligible for Concession, a concession of 7% of Fee per quarter is calculated as the concession amount, otherwise concession amount is 0.</li> <li>Fee to be paid is the Fee per quarter with the concession amount (if any) deducted from it.</li> </ul> <p>Help Ms. Priya in writing the code to do the following:</p>		
	(i)	When 'Calculate Charges' button is clicked, 'Fee per quarter', 'Concession Amount', 'Fee to be Paid' should be calculated and displayed in the respective text fields.	4	
	Ans	<pre>// Calculation of Amount double feeperqtr = 0.0,concess = 0.0,feetopay=0.0;      if (jRadioButton1.isSelected())         feeperqtr=2000;     else if (jRadioButton2.isSelected())         feeperqtr=2500;     else if (jRadioButton3.isSelected())         feeperqtr=2300;     if (jCheckBox1.isSelected())         concess= (0.07*feeperqtr);     feetopay=feeperqtr-concess;     jTextField2.setText("" + feeperqtr);     jTextField3.setText("" + concess);     jTextField4.setText("" + feetopay);</pre>		
		<p><i>(½ mark for correct use of if statement for Radiobutton)</i>  <i>(½ mark for assigning correct value for Fee per Quarter)</i>  <i>(½ mark for correct use of if statement for Checkbox)</i>  <i>(½ mark for calculating concession)</i>  <i>(½ mark for calculating Fee to be paid)</i>  <i>(½ mark for displaying Fee per Quarter)</i>  <i>(½ mark for displaying concession)</i>  <i>(½ mark for displaying Fee to be paid)</i></p>		
	(ii)	When 'CLEAR' button is clicked, all the textfields, radiobuttons and checkbox should be cleared.	1	
	Ans	<pre>jTextField1.setText(""); jTextField2.setText(""); jTextField3.setText(""); jTextField4.setText(""); jRadioButton1.setSelected(false); jRadioButton2.setSelected(false); jRadioButton3.setSelected(false); jCheckBox1.setSelected(false);</pre>		
		<p><i>( ½ mark for clearing any text field)</i>  <i>( ½ mark for clearing check box/radiobutton)</i>  <b>Note : NULL in place of "" should be accepted for clearing text field.</b></p>		
	(iii)	When 'Exit' button is clicked, the application should close.	1	
		<code>System.exit(0);</code>		
		<i>(1 mark for correct answer)</i>		

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5.	<p>Consider the following table 'Furniture'. Write SQL commands for the statements (i) to (viii) and write output for SQL queries (ix) and (x).</p> <p style="text-align: center;"><b>Table : Furniture</b></p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">FCODE</th> <th style="text-align: left;">NAME</th> <th style="text-align: left;">PRICE</th> <th style="text-align: left;">MANUFDATE</th> <th style="text-align: left;">WCODE</th> </tr> </thead> <tbody> <tr> <td>10023</td> <td>Coffee table</td> <td>4000</td> <td>19-DEC-2016</td> <td>W03</td> </tr> <tr> <td>10001</td> <td>Dining table</td> <td>20500</td> <td>12-JAN-2017</td> <td>W01</td> </tr> <tr> <td>10012</td> <td>Sofa</td> <td>35000</td> <td>06-JUN-2016</td> <td>W02</td> </tr> <tr> <td>10024</td> <td>Chair</td> <td>2500</td> <td>07-APR-2017</td> <td>W03</td> </tr> <tr> <td>10090</td> <td>Cabinet</td> <td>18000</td> <td>31-MAR-2015</td> <td>W02</td> </tr> </tbody> </table>	FCODE	NAME	PRICE	MANUFDATE	WCODE	10023	Coffee table	4000	19-DEC-2016	W03	10001	Dining table	20500	12-JAN-2017	W01	10012	Sofa	35000	06-JUN-2016	W02	10024	Chair	2500	07-APR-2017	W03	10090	Cabinet	18000	31-MAR-2015	W02		
FCODE	NAME	PRICE	MANUFDATE	WCODE																													
10023	Coffee table	4000	19-DEC-2016	W03																													
10001	Dining table	20500	12-JAN-2017	W01																													
10012	Sofa	35000	06-JUN-2016	W02																													
10024	Chair	2500	07-APR-2017	W03																													
10090	Cabinet	18000	31-MAR-2015	W02																													
	(i) To display FCODE, NAME and PRICE of items that have PRICE less than ₹ 5,000.	1																															
	<b>Ans</b> SELECT FCODE, NAME, PRICE FROM Furniture WHERE PRICE <5000;																																
	( ½ mark for SELECT) ( ½ mark for WHERE)																																
	(ii) To display NAMES and PRICE of those Furniture Items that have 'table' anywhere in their names.	1																															
	<b>Ans</b> SELECT NAME, PRICE FROM Furniture WHERE NAME LIKE '%table%';																																
	( ½ mark for SELECT) ( ½ mark for WHERE)																																
	(iii) To display WCODE of Furniture Items. There should be no duplicate values.	1																															
	<b>Ans</b> SELECT DISTINCT(WCODE) FROM Furniture;																																
	( ½ mark for SELECT) ( ½ mark for DISTINCT)																																
	(iv) To display the NAMES and PRICE increased by 500.00 of all the furniture items. (Price should only be displayed as increased; there should be no increase in the data in the table)	1																															
	<b>Ans</b> SELECT NAME, PRICE+500 FROM Furniture;																																
	(½ mark for SELECT) (½ mark for PRICE+500)																																
	(v) To display FCODE and NAME of each Furniture Item in descending order of FCODE .	1																															
	<b>Ans</b> SELECT FCODE, NAME FROM Furniture ORDER BY FCODE DESC;																																
	(½ mark for SELECT) (½ mark for ORDER BY)																																
	(vi) To display the details of all the Furniture Items which have Manufacturing date(MANUFDATE) between 01-JAN-2016 and 15-JUN-2017 (inclusive of both the dates).	1																															

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	Ans	<pre>SELECT * FROM FURNITURE WHERE MANUFDATE BETWEEN '2016-01-01' AND '2017-06-15' ; OR SELECT * FROM FURNITURE WHERE MANUFDATE &gt;= '2016-01-01' AND MANUFDATE &lt;= '2017-06-15' ; OR SELECT * FROM FURNITURE WHERE MANUFDATE BETWEEN '01-JAN-2016' AND '15-JUN-2017' ; OR SELECT * FROM FURNITURE WHERE MANUFDATE &gt;= '01-JAN-2016' AND MANUFDATE &lt;='15-JUN-2017' ;</pre>																	
		<p><i>(½ mark for SELECT)</i> <i>(½ mark for WHERE)</i></p>																	
	vii)	To display the average PRICE of all the Furniture Items, which are made of Wood with WCODE as W02.	1																
	Ans	<pre>SELECT AVG(PRICE) FROM Furniture WHERE WCODE = 'W02' ;</pre>																	
		<p><i>(½ mark for SELECT)</i> <i>(½ mark for WHERE)</i> <i>OR</i> <i>(½ mark for SELECT, ½ mark for 'FROM' clause)</i></p>																	
	viii)	To display WCODE wise, WCODE and the highest price of Furniture Items.																	
	Ans	<pre>SELECT WCODE, MAX(PRICE) FROM Furniture GROUP BY WCODE ;</pre>																	
		<p><i>(½ mark for SELECT)</i> <i>(½ mark for GROUP BY)</i></p>																	
	ix)	<pre>SELECT SUM(PRICE) FROM Furniture WHERE WCODE='W03' ;</pre>	1																
	Ans	<pre><u>SUM(PRICE)</u> 6500</pre>																	
		<i>(1 mark for correct answer)</i>																	
	(x)	<pre>SELECT COUNT(DISTINCT PRICE) FROM Furniture ;</pre>	1																
	Ans	<pre><u>COUNT(DISTINCT PRICE)</u> 5</pre>																	
		<i>(1 mark for correct answer)</i>																	
6	(a)	<p>Write SQL query to create a table 'Inventory' with the following structure:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Field</th> <th style="text-align: left;">Type</th> <th style="text-align: left;">Constraint</th> </tr> </thead> <tbody> <tr> <td>MaterialId</td> <td>Integer</td> <td>Primary key</td> </tr> <tr> <td>Material</td> <td>Varchar(50)</td> <td><b>NOT NULL</b></td> </tr> <tr> <td>Category</td> <td>Char</td> <td></td> </tr> <tr> <td>DatePurchase</td> <td>Date</td> <td></td> </tr> </tbody> </table>	Field	Type	Constraint	MaterialId	Integer	Primary key	Material	Varchar(50)	<b>NOT NULL</b>	Category	Char		DatePurchase	Date		2	
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	<b>Ans</b>	<p><b>CREATE TABLE Inventory</b> ( <b>MaterialId INTEGER PRIMARY KEY,</b> <b>Material Varchar(50)NOT NULL,</b> <b>Category Char,</b> <b>DatePurchase Date</b> <b>);</b></p>																																															
		<p><i>(½ mark for CREATE TABLE )</i> <i>(½ mark for PRIMARY KEY constraint)</i> <i>(½ mark for NOT NULL constraint)</i> <i>(½ mark for Column Names with Data Types)</i></p>																																															
	<b>(b)</b>	<p>Consider the following tables <b>PATIENT</b> and <b>TEST</b> and answer the questions that follow:</p> <p style="text-align: center;"><b>Table : PATIENT</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>PCODE</th> <th>NAME</th> <th>PHONE</th> <th>DTADMIT</th> <th>TESTID</th> </tr> </thead> <tbody> <tr> <td>6473</td> <td>Amit Sharma</td> <td>912356899</td> <td>19-JUN-2017</td> <td>T102</td> </tr> <tr> <td>7134</td> <td>Rose Mathew</td> <td>886744536</td> <td>12-NOV-2017</td> <td>T101</td> </tr> <tr> <td>8786</td> <td>Tina Sharma Arora</td> <td>889088765</td> <td>06-DEC-2017</td> <td>T102</td> </tr> <tr> <td>6477</td> <td>Vijay Shah</td> <td>714567445</td> <td>07-DEC-2017</td> <td>T502</td> </tr> <tr> <td>7658</td> <td>Venkat Fazal</td> <td>865545343</td> <td>31-DEC-2017</td> <td>T101</td> </tr> </tbody> </table> <p><b>Note :</b> <i>NAME</i> holds the Names of patients. <i>DTADMIT</i> holds Dates on which patient was admitted to hospital. <i>TESTID</i> holds Ids of Medical tests done on patients.</p> <p style="text-align: center;"><b>Table: TEST</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>TESTID</th> <th>TESTNAME</th> <th>COST</th> </tr> </thead> <tbody> <tr> <td>T101</td> <td>Platelet Count</td> <td>200.00</td> </tr> <tr> <td>T102</td> <td>Hemogram</td> <td>190.00</td> </tr> <tr> <td>T301</td> <td>Malaria Detection</td> <td>350.00</td> </tr> <tr> <td>T502</td> <td>Glucose Test</td> <td>150.00</td> </tr> </tbody> </table> <p>Name the Primary keys in both the tables and foreign key in '<b>PATIENT</b>' table. State the reason for your choice.</p>	PCODE	NAME	PHONE	DTADMIT	TESTID	6473	Amit Sharma	912356899	19-JUN-2017	T102	7134	Rose Mathew	886744536	12-NOV-2017	T101	8786	Tina Sharma Arora	889088765	06-DEC-2017	T102	6477	Vijay Shah	714567445	07-DEC-2017	T502	7658	Venkat Fazal	865545343	31-DEC-2017	T101	TESTID	TESTNAME	COST	T101	Platelet Count	200.00	T102	Hemogram	190.00	T301	Malaria Detection	350.00	T502	Glucose Test	150.00	<b>2</b>	
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	<b>Ans</b>	<p>Primary key (Table : <b>PATIENT</b> ) - <b>PCODE</b> as it is unique to each row of table Primary key (Table : <b>TEST</b>) - <b>TESTID</b> as it is unique to each row of table Foreign key in table <b>PATIENT</b> : <b>TESTID</b> as it links the two tables and is Primary key in table <b>TEST</b>.</p>																																															
		<p><i>(½ mark each for identifying PRIMARY KEY of both the tables)</i> <i>(½ mark for FOREIGN KEY identification)</i> <i>(½ mark for mentioning ANY one reason for PRIMARY or FOREIGN KEY)</i></p>																																															
	<b>(c)</b>	With reference to the above given tables (in Q6 b), Write commands in <b>SQL</b> for (i) to (iii)																																															
	<b>(i)</b>	To display Names of Patients, <b>TESTID</b> and Test names for those Patients who were admitted between ' <b>01-DEC-2017</b> ' and ' <b>15-DEC-2017</b> ' (both dates inclusive).	<b>2</b>																																														

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<b>Ans</b>	<pre> SELECT NAME, PATIENT.TESTID, TESTNAME                                 /*TEST.TESTID accepted*/ FROM PATIENT, TEST WHERE PATIENT.TESTID = TEST.TESTID AND DTADMIT BETWEEN '01-DEC-2017' and '15-DEC-2017'; OR SELECT NAME, PATIENT.TESTID, TESTNAME                                 /*TEST.TESTID accepted*/ FROM PATIENT, TEST WHERE PATIENT.TESTID = TEST.TESTID AND DTADMIT &gt;='01-DEC-2017' and DTADMIT &lt;= '15-DEC-2017'; OR SELECT NAME, P.TESTID, TESTNAME    /*T.TESTID accepted*/ FROM PATIENT P, TEST T WHERE P.TESTID = T.TESTID AND DTADMIT BETWEEN '01-DEC-2017' and '15-DEC-2017'; OR SELECT NAME, P.TESTID, TESTNAME    /*T.TESTID accepted*/ FROM PATIENT P, TEST T WHERE P.TESTID = T.TESTID AND DTADMIT &gt;= '01-DEC-2017' and DTADMIT &lt;= '15-DEC-2017';                 </pre>		
	<p>(½ mark for SELECT)                  (½ mark for FROM)                  (½ mark for correct use of join)                  (½ mark for correct use of condition)                  Note : DTADMIT in default date format (yyyy-mm-dd) should also be accepted</p>		
<b>(ii)</b>	<p>To display Names of Patients, Test names and Cost of Test for those Patients who have “Sharma” in their names.</p>	2	
<b>Ans</b>	<pre> SELECT NAME, TESTNAME, COST FROM PATIENT, TEST WHERE PATIENT.TESTID = TEST.TESTID AND Name LIKE '%Sharma%'; OR SELECT NAME, TESTNAME, COST FROM PATIENT P, TEST T WHERE P.TESTID = T.TESTID AND Name LIKE '%Sharma%'; OR SELECT P.NAME, T.TESTNAME, T.COST FROM PATIENT P, TEST T WHERE P.TESTID = T.TESTID AND Name LIKE '%Sharma%';                 </pre>		
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	<b>(iii)</b>	To increase the cost of those tests in the table “ <b>TEST</b> ” by ₹ 50.00 that have cost below ₹ 200.00	2																
	<b>Ans</b>	<pre>UPDATE TEST SET COST = COST+50.00 WHERE COST &lt;200.00;</pre>																	
		<p><i>(1 mark for UPDATE)</i>  <i>(½ mark for SET)</i>  <i>(½ mark for WHERE clause)</i></p>																	
<b>7</b>	<b>(a)</b>	How does e-governance help in building trust between the Government and citizens?	2																
	<b>Ans</b>	<ul style="list-style-type: none"> <li>• Transparency of Government processes, policies and decisions</li> <li>• Awareness about new policies and facilities being offered by the Government.</li> <li>• Enabling citizen engagement in the policy processes</li> <li>• Reduces the waiting time</li> <li>• Practices like influences and bribing are reduced</li> </ul>																	
		<i>( 2 marks for correct answer)</i>																	
	<b>(b)</b>	How can e-learning help students learn at their own pace?	1																
	<b>Ans</b>	<ul style="list-style-type: none"> <li>• Students can go through the learning material any number of times as per his/her learning abilities</li> <li>• Students can study at their own convenient time anywhere/anytime.</li> </ul>																	
		<i>( 1 mark for any relevant point)</i>																	
	<b>(c)</b>	Ms. Cathy is creating a form for Vidya University Sports Council application. Help her to choose the most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries:	2																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S.No.</th> <th style="width: 80%;">Function</th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>To let the user enter <b>NAME</b></td> <td></td> </tr> <tr> <td>2.</td> <td>To let the user enter <b>MOBILE NUMBER</b></td> <td></td> </tr> <tr> <td>3.</td> <td>To let the user choose one <b>PROFESSION</b> out of the categories : Teaching/Non-Teaching/Research Scholar</td> <td></td> </tr> <tr> <td>4.</td> <td>To let the user select facilities out of Gym, Yoga, Table Tennis, Badminton and Aerobics. More than one facility may be chosen.</td> <td></td> </tr> </tbody> </table>	S.No.	Function		1.	To let the user enter <b>NAME</b>		2.	To let the user enter <b>MOBILE NUMBER</b>		3.	To let the user choose one <b>PROFESSION</b> out of the categories : Teaching/Non-Teaching/Research Scholar		4.	To let the user select facilities out of Gym, Yoga, Table Tennis, Badminton and Aerobics. More than one facility may be chosen.			
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