

**Strictly Confidential: (For Internal and Restricted use only)**  
**Senior School Certificate Examination - September 2020**  
**Marking Scheme - Informatics Practices (OLD) (SUBJECT CODE: 265)**  
**(SET: 4 | SERIES: HMJ/C | CODE NO - 490/C)**

**General Instructions:**

1. You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and the teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully. **Evaluation is a 10 -12 days mission for all of us. Hence, it is necessary that you put in your best efforts in this process.**
2. Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. **However, while evaluating, answers which are based on the latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and marks be awarded to them.**
3. The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
4. If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled.
5. If a question does not have any parts, marks must be awarded in the left hand margin and encircled.
6. If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out.
7. No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
8. A full scale of marks **70** (example: **1-70**) has to be used. Please do not hesitate to award full marks if the answer deserves it.
9. Every examiner has to necessarily do evaluation work for full working hours i.e. 8 hours every day and evaluate 25 answer books per day.
10. Ensure that you do not make the following common types of errors committed by some Examiners in the past:-
  - a. Leaving the answer or part thereof unassessed in an answer book.
  - b. Giving more marks for an answer than assigned to it.
  - c. Wrong transfer of marks from the inside pages of the answer book to the title page.
  - d. Wrong question wise totaling on the title page.
  - e. Wrong totaling of marks of the two columns on the title page.
  - f. Wrong grand total.
  - g. Marks in words and figures not tallying.
  - h. Wrong transfer of marks from the answer book to online award list.
  - i. Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.)
  - j. Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
11. While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as (X) and awarded zero (0) Marks.
12. Any unassessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
13. The Examiners should acquaint themselves with the guidelines given in the Guidelines for spot Evaluation before starting the actual evaluation.
14. Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.
15. The Board permits candidates to obtain a photocopy of the Answer Book on request in an RTI application and also separately as a part of the re-evaluation process on payment of the processing charges.

[Informatics Practices (Old) Sub Code: 265 Set: 4 Series: HMJ/C | Code No - 490/C] [Page 1 of 18]

\*These answers are meant to be used by evaluators





### Specific Instructions:

- All programming questions have to be answered with respect to C++ Language / Python only
- In C++ / Python, ignore case sensitivity for identifiers (Variable / Functions / Structures / Class Names)
- In Python indentation is mandatory, however, the number of spaces used for indenting may vary
- In SQL related questions - both ways of text/character entries should be acceptable for Example: "AMAR" and 'amar' both are acceptable.
- In SQL related questions - all date entries should be acceptable 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.
- In SQL related questions - semicolon should be ignored for terminating the SQL statements
- In SQL related questions, ignore case sensitivity.

1	(a)	Write two advantages of networking computers over having stand-alone computers.	2
	Ans	Some of the advantages of networking computers over having stand-alone computers are: <ul style="list-style-type: none"> <li>• Sharing of devices like printers</li> <li>• Files can easily be shared between users working as a team.</li> <li>• Users can communicate by email and instant messenger.</li> <li>• Software licences are generally cheaper than buying several standalone license.</li> </ul>	
		<b><i>(1 mark each for mentioning any two advantages of networking computers)</i></b>	
	(b)	Write the purpose of using Repeater in a computer network.	2
	Ans	Repeater is an electronic device used in a computer network to receive a signal and retransmits it with or without amplification. Repeaters are used to extend transmissions so that the signal can cover longer distances.	
		<b><i>(Full 2 marks for mentioning any one correct use of Repeater)</i></b>	
	(c)	Suchitra works for a company. She often says "I can't access social networking website because my company does not let me use it." How does her company examine content entering or leaving their network? Explain in brief the hardware/software used by the company.	2
	Ans	Firewall is one of the methods that can be used by the company. It is a combination of hardware and software for network security systems that monitors and controls incoming and outgoing network access. A firewall typically establishes a restriction for unauthorized users, programs, websites, etc.	
		<b><i>(1 mark for answering Firewall or any other valid system)</i></b> <b><i>(1 mark for brief explanation of Firewall or any other valid system)</i></b>	
	(d)	"Open Source Software is not the same as free of cost software." Is this statement true? Give reason(s).	2





	<b>Ans</b> No they are not the same.  Most of the Open-source are conditionally free but free softwares are not necessarily open source software. Open-source licenses being free to the users also make available the source code and the permit to modify and re-share it.	
	<i>(1 mark for answering 'Not Same')</i> <i>(1 mark for brief explanation any one correct difference)</i>	
	(e) Explain in brief any two threats to data travelling over a computer.	2
	<b>Ans</b> Two major threats to data travelling over a computer are: <ul style="list-style-type: none"> <li>• Viruses: A computer virus is a type of malicious code or program written to alter the way a computer operates and is designed to spread from one computer to another. Most of the time it harms/hijacks the data stored on the computer.</li> <li>• Unauthorized Access to Data (unethical Hacking): Hacking is breaking into a computer system with the intention of access and maliciously altering, damaging, or disrupting the data stored in the computer system or networks.</li> </ul> Other valid threats, which should be considered: <ul style="list-style-type: none"> <li>• Eavesdropping and Data Theft.</li> <li>• Spyware.</li> <li>• Keyloggers.</li> <li>• Trojans.</li> <li>• Data Tampering.</li> <li>• Spam.</li> <li>• Lack of Accountability.</li> </ul>	
	<i>(1/2 mark each for mentioning any two threats correctly)</i> <i>(1/2 mark each for briefly explaining any two threats correctly)</i>	
2	(a) What value will be stored in m ? $m = 6 + 19 \% 3 - 6/2$	1
	<b>Ans</b> Ans : 4	
	<i>(1 mark each for the correct answer)</i>	
	(b) Identify invalid variable names. State reason(s) if invalid. (i) Product_1 (ii) 1Sales (iii) Sales January (iv) Amount11	1
	<b>Ans</b> Invalid variable names are: (ii) 1Sales, as first character can't be a digit (iii) Sales January, as a variable name can't contain space	
	<i>(1/2 mark each for mentioning each variable name with briefly mentioning reason)</i>	





	(c)	Name the loop of Java that always executes at least one time.	1
	Ans	do-while	
		<i>(1 mark for mentioning the correct loop, with or without any valid explanation)</i>	
	(d)	The following code has error(s). Rewrite the correct code underlining corrections done.  <pre>int x; int i=1; do while (i&lt;5) {     x = i+4;     i+1= i; }</pre>	1
	Ans	<pre>int x; int i=1; do {     x = i+4;     <u>i= i+1;</u> }<u>while (i&lt;5);</u></pre> <p>OR</p> <pre>int x; int i=1; <u>while (i&lt;5)</u> {     x = i+4;     <u>i= i+1;</u> }</pre>	
		<i>(½ mark each for identifying and correcting any 2 errors in the program) Note: No marks should be deducted if corrections are not underlined</i>	
		<b>OR</b>	
		Write the output of the following code that will be displayed in jTextField1 and jTextField2 :  <pre>int sum=1,i; for (i=1;i&lt;=3;i++) {     sum = sum *i; } jTextField1.setText(""+sum) ; jTextField2.setText(""+i) ;</pre>	1





	Ans	The content of jTextField1 is 6 The content of jTextField2 is 4	
		<i>(½ mark for each correct values/output)</i> <i>Note: No marks should be deducted if output are not formatted</i>	
	(e)	Distinguish between Java and Netbeans.	2
	Ans	Java is an object-oriented programming language whereas NetBeans is an IDE, a tool that enables programmers to easily develop software in many programming languages (Java, C, PHP, etc)	
		<i>(2 mars for any one valid difference)</i> <b>OR</b> <i>(1 mark each for conveying correct meaning of Java and Netbeans)</i>	
	(f)	Distinguish between HTML and XML. Write two points.	2
	Ans	1. HTML is used for the information presentation whereas the main purpose of XML is to store and transfer the data.  2. HTML is a simple, predefined markup language while XML is the standard markup language to define other languages.  3. XML document parsing is easy and fast.	
		<i>(1 mark each for any two differences)</i>	
		<b>OR</b>	
		Identify Root element and Child elements in the following code:  <code>&lt;bookstore&gt;   &lt;book category="COOKING"&gt;     &lt;author&gt;Sabreena&lt;/author&gt;     &lt;year&gt;2005&lt;/year&gt;   &lt;/book&gt;   &lt;book category="CHILDREN"&gt;     &lt;author&gt;J K. Rowling&lt;/author&gt;     &lt;year&gt;2005&lt;/year&gt;   &lt;/book&gt; &lt;/bookstore&gt;</code>	2
	Ans	Root element: bookstore Child elements: book <b>AND/OR</b> author <b>AND/OR</b> year	
		<i>(1 mark for mentioning each element)</i>	
	(g)	Write the following code using 'switch' instead of 'if else if' :  <code>if (marks==10) {   grade = 'A'; } else if (score==9)</code>	2





		<pre> {     grade = 'B'; } else if (score==8)  {     grade = 'C'; } else     grade = 'F'; </pre>	
Ans		<pre> if (marks==10) {     grade = 'A' } else     switch (score) // score instead of marks should be accepted     {         case 9:  grade = 'B'                 break;         case 8:  grade = 'C'                 break;         default: grade = 'F';     } </pre> <p>OR</p> <pre> switch (marks) // score instead of marks should be accepted {     case 10: grade = 'A'             break;     case 9:  grade = 'B'             break;     case 8:  grade = 'C'             break;     default: grade = 'F'; } </pre>	
		(2 marks for writing correct equivalent code )	
3	(a)	<p>Ms. Saloni wants to assign the value 700 as value in Fee Column for all the students in table named "STUDENT". She has entered the following SQL statement:</p> <pre> UPDATE STUDENT;  ASSIGN Fee= 700; </pre> <p>Rewrite the correct statement if there is any error.</p>	2
Ans		UPDATE STUDENT	





	<code>SET Fee=700;</code>																
	<i>( 1 mark for removing ';' after UPDATE STUDENT) ( 1 mark for replacing ASSIGN with SET)</i>																
(b)	Chaya wanted to add a column "Hobbies" in an already created table "Person". She wrote the following SQL statement:  <code>ALTER TABLE Person ADD Hobbies columnsize 50;</code>  Rewrite the correct statement if there is any error.	2															
Ans	<code>ALTER TABLE Person ADD Hobbies VARCHAR(50);</code>																
	<i>(1 mark for declaring the datatype correctly as VARCHAR(50))  Note: Instead of VARCHAR(50), CHAR(50) or any other datatype with valid argument should be accepted.</i>																
(c)	Given below is a Table named 'Company' :  <table border="1"> <thead> <tr> <th>CODE</th> <th>FIRSTNAME</th> <th>GENDER</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Advaita</td> <td>F</td> </tr> <tr> <td>102</td> <td>Feroze</td> <td>M</td> </tr> <tr> <td>103</td> <td>Samay</td> <td>M</td> </tr> <tr> <td>104</td> <td>Sasha</td> <td>F</td> </tr> </tbody> </table> Write output of SQL statement given below:  <code>SELECT FIRSTNAME, CODE FROM Company WHERE GENDER = 'F' and FIRSTNAME LIKE 'S%';</code>	CODE	FIRSTNAME	GENDER	101	Advaita	F	102	Feroze	M	103	Samay	M	104	Sasha	F	2
CODE	FIRSTNAME	GENDER															
101	Advaita	F															
102	Feroze	M															
103	Samay	M															
104	Sasha	F															
Ans	<table border="1"> <thead> <tr> <th><u>FIRSTNAME</u></th> <th><u>CODE</u></th> </tr> </thead> <tbody> <tr> <td>Sasha</td> <td>104</td> </tr> </tbody> </table>	<u>FIRSTNAME</u>	<u>CODE</u>	Sasha	104												
<u>FIRSTNAME</u>	<u>CODE</u>																
Sasha	104																
	<i>( 1 mark for writing 'Sasha') ( 1 mark for writing '104')  Note: (Deduct ½ mark if 'Advaita' and/or 'Feroze' is mentioned in output) (Deduct ½ mark if 'Samay' and/or '103' is mentioned in output)</i>																
(d)	Name any two Single Row functions and any two Group (Aggregate) functions used in MySQL.	2															
Ans	<table border="1"> <tr> <td>Single Row functions</td> <td>Group (Aggregate) functions</td> </tr> </table>	Single Row functions	Group (Aggregate) functions														
Single Row functions	Group (Aggregate) functions																





	UPPER, LOWER, CONCAT, LENGTH, SUBSTR, ROUND, TRUNC, etc.	MAX, MIN, SUM, COUNT, AVG, etc.												
	<p>(1/2 mark each for any 2 Single Row functions )  (1/2 mark each for any 2 Group (Aggregate) functions)</p> <p><b>Note : Examiners should accept all valid and correct function names.</b></p>													
	(e) The 'Book' table has the following columns and presently has no Rows.		2											
	<table border="1"> <thead> <tr> <th>BCODE</th> <th>BNAME</th> <th>POINTS</th> </tr> </thead> <tbody> <tr> <td colspan="3">The following SQL statements are entered.</td> </tr> <tr> <td colspan="3"> <pre>SET AUTOCOMMIT = 0; INSERT INTO Book VALUES ('B101', 'Spirituality', 7); INSERT INTO Book VALUES ('B102', 'Meditation', 6); SAVEPOINT abc; UPDATE Book SET POINTS=POINTS +2 WHERE BName = 'Spirituality'; UPDATE Book SET POINTS =POINTS+3 WHERE BName = 'Meditation'; SELECT sum(POINTS) FROM Book; ROLLBACK To SAVEPOINT abc; SELECT sum(POINTS) FROM Book;</pre> </td> </tr> <tr> <td colspan="3">What will be the output of the above given SELECT statements?</td> </tr> </tbody> </table>	BCODE	BNAME	POINTS	The following SQL statements are entered.			<pre>SET AUTOCOMMIT = 0; INSERT INTO Book VALUES ('B101', 'Spirituality', 7); INSERT INTO Book VALUES ('B102', 'Meditation', 6); SAVEPOINT abc; UPDATE Book SET POINTS=POINTS +2 WHERE BName = 'Spirituality'; UPDATE Book SET POINTS =POINTS+3 WHERE BName = 'Meditation'; SELECT sum(POINTS) FROM Book; ROLLBACK To SAVEPOINT abc; SELECT sum(POINTS) FROM Book;</pre>			What will be the output of the above given SELECT statements?			
BCODE	BNAME	POINTS												
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What will be the output of the above given SELECT statements?														
	<p>Ans <u>sum(POINTS)</u> 18</p> <p><u>sum(POINTS)</u> 13</p>													
	<p>(1 mark for the first output as '18')  (1 mark for the second output as '13')</p>													
	4 (a) Write the value of p after execution of the following code:		1											
	<p>Suppose p = 7 initially</p> <pre>q=2; if (p&gt;q)     p=p+2; p=p+1;</pre>													
	Ans 10													
	<p>(1 mark for correct answer)  <b>Note: Full 1 mark to be awarded if error is mentioned in the code.</b></p>													
	OR													





	Mention one advantage of JTextArea over jTextField control.	1
Ans	JTextArea allows entering multiple lines of text while JTextField allows entering a single line of text	
	<i>(1 mark for writing correct advantage)</i>  <b>OR</b> <i>(½ mark for writing correct use of JTextArea)</i> <i>(½ mark for writing correct use of JTextField)</i>	
(b)	What values will be displayed in jTextField1 and jTextField2 ?  <pre>int i = 3; int j = 7; while(i&lt;j) {     i= i*2;     j--; } jTextField1.setText(""+i); jTextField2.setText(""+j);</pre>	2
Ans	The content of jTextField1 is 6 The content of jTextField2 is 6	
	<i>(1 mark for each correct value of jTextField1 and jTextField2 )</i>	
(c)	What will be the value of p after the following code is executed ?  <pre>int p = 5, q = 1; do {     p = p+q;     q = q+5; } while {p &lt;20};</pre>	2
Ans	23	
	<i>( 2 marks for writing correct answer, assuming () in place of {} with 'while')</i>  <b>OR</b> <i>( Full 2 marks for writing error in the code)</i>	
	<b>OR</b>	
	Write the difference between while and 'do .. while' loops of Java.	2
Ans	'while' is an entry controlled loop in Java where condition is checked before the body of the loop gets executed whereas 'do...while' is an exit controlled loop	





	<p>in Java where condition is checked after the body of the loop gets executed.</p> <p>If the loop condition is initially false, the 'while' loop will not get executed even once whereas 'do...while' will be executed at least once even if the loop condition is initially false.</p> <p>Example: In the following examples, the p will have value 1 after executing Code 1 whereas p will have value 10 after executing the Code 2.</p> <pre>// Code 1 int p = 1; while (p &lt;0) {     p = 10; } // Code 2 int p = 1; do {     p = 10; }while (p &lt;0);</pre>	
	<i>(2 marks for mentioning any one correct difference with or without example)</i>	
(d)	<p>The following code has error(s). Rewrite the correct code underlining all the corrections made :</p> <pre>switch marks {     case 5:    grade == 'A' ;     case 4:    grade == 'B' ;               break;     otherwise :grade == 'N' ;               break; }</pre>	2
Ans	<pre>switch <u>(marks)</u> {     case 5:    <u>grade = 'A' ;</u>     case 4:    <u>grade = 'B' ;</u>               break;     <u>default:</u> <u>grade='N' ;</u>               break; }</pre>	
	<i>(1/2 mark for correcting each error - Any Four)</i>	
	<b>OR</b>	
	What is the purpose of 'break' statement in switch statement used in a Java program?	2





Ans	<p>'break' is used to terminate a case in the 'switch' statement. 'break' in 'switch' is used to immediately terminate the 'switch-case' and the program control resumes at the next statement following 'switch'.</p> <p>Example:</p> <pre>switch (Grade) {     case 'A':    BSalary=60000;                 break;     case 'B':    BSalary=40000;                 break;     default:    BSalary=0; }</pre>									
	( 2 marks for correctly mention the use of break with or without example)									
(e)	<p>How many times will the following loop execute?</p> <pre>int sum = 0; for (int i= 1; i&lt;=7;i=i+3) {     sum = sum+i; }</pre>	2								
Ans	3 times									
	(2 mark for correct answer)									
(f)	<p>Ms. Suchitra works as a programmer in a School. She has designed a software to compute amount to be paid by students when they buy food items in the School Canteen. A screenshot of the same is shown below:</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"> <p><b>Good Health Canteen</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 40%;">Amount</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> Masala Oats</td> <td><input style="width: 100%;" type="text"/></td> </tr> <tr> <td><input type="checkbox"/> Vegetable Pasta</td> <td><input style="width: 100%;" type="text"/></td> </tr> <tr> <td><input type="checkbox"/> Raagi Chips</td> <td><input style="width: 100%;" type="text"/></td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>Calculate Grand Total</span> <span>Clear</span> <span>Exit</span> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>Grand Total Amount</span> <input style="width: 100%;" type="text"/> </div> </div>		Amount	<input type="checkbox"/> Masala Oats	<input style="width: 100%;" type="text"/>	<input type="checkbox"/> Vegetable Pasta	<input style="width: 100%;" type="text"/>	<input type="checkbox"/> Raagi Chips	<input style="width: 100%;" type="text"/>	4
	Amount									
<input type="checkbox"/> Masala Oats	<input style="width: 100%;" type="text"/>									
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<input type="checkbox"/> Raagi Chips	<input style="width: 100%;" type="text"/>									
(i)	<p>Help Ms. Suchitra in writing the code to do the following:</p> <ul style="list-style-type: none"> <li>When a checkbox for a food item is clicked, Amount for that food item should be displayed in front of that food item. The Amount for each food item is as follows:</li> </ul>									





Food Item	Amount
Masala Oats	20.00
Vegetable Pasta	25.00
Raagi Chips	15.00

- After selecting appropriate checkbox(es), when 'Calculate Grand Total' button is clicked, 'Grand Total Amount' should be calculated and displayed in the respective text field. This will be the sum of amounts depending on food items selected.

For example if Masala Oats and Raagi Chips are selected, 20.00 and 15.00 will be displayed in front of selected food items and Grand Total Amount will be 35.00.

Ans `double mo=0.0, vp=0.0, rc=0.0, gta=0.0;`

```
(i) if (jRadioButton1.isSelected())
    mo=20.00;
    if (jRadioButton2.isSelected())
        vp=25.00;
    if (jRadioButton3.isSelected())
        rc=15.00;
    jTextField1.setText(""+mo);
    jTextField2.setText(""+vp);
    jTextField3.setText(""+rc);
    gta=mo+vp+rc;
    if (jCommandButton1.isSelected())
        jTextField4.setText(""+gta);
```

*(1 mark for correct use of if statement for Radiobutton/CheckBox/Combobox)  
 (½ mark for assigning correct value to variable mo, vp, rc )  
 (½ mark for displaying mo, vp, rc)  
 (1 mark for correct use of if statement for calculating Grand Total (gta))  
 (1 mark for displaying gta)*

**Note :**

- 2 Marks for any valid/syntactically correct if/switch condition
- 2 marks for displaying the cost of items along with Grand Total Amount

(ii) When 'CLEAR' button is clicked, all the textfields and checkboxes should be cleared. 1

```
Ans jTextField1.setSelected(false);
jRadioButton2.setSelected(false);
jRadioButton3.setSelected(false);
jTextField1.setText("");
jTextField2.setText("");
jTextField3.setText("");
```

*( ½ mark for clearing radiobutton)  
 ( ½ mark for clearing any text field)*

**Note :** NULL in place of "" should be accepted for clearing text field.





	(iii)	When 'Exit' button is clicked, the application should close.	1																																				
	Ans	<code>System.exit(0);</code>																																					
		<i>(1 mark for correct answer)</i>																																					
5.		<p>Consider the following Table "Shop" shown below. Write SQL statements for (i) to (viii) and output for (ix) and (x).</p> <p style="text-align: center;"><b>Table : Shop</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Id</th> <th>Item</th> <th>Category</th> <th>CP</th> <th>SP</th> <th>DtManuf</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Oats Biscuits</td> <td>A</td> <td>25.00</td> <td>35.00</td> <td>2018-10-19</td> </tr> <tr> <td>102</td> <td>Ragi Chips</td> <td>B</td> <td>50.00</td> <td>65.00</td> <td>2018-11-14</td> </tr> <tr> <td>103</td> <td>Oats</td> <td>A</td> <td>90.00</td> <td>100.00</td> <td>2019-03-30</td> </tr> <tr> <td>104</td> <td>Honey Biscuits</td> <td></td> <td>50.00</td> <td>80.00</td> <td>2018-10-23</td> </tr> <tr> <td>105</td> <td>Pumpkin Seeds</td> <td>C</td> <td>75.00</td> <td>85.00</td> <td>2018-12-25</td> </tr> </tbody> </table> <p>Columns CP and SP denote Cost Price and Selling Price respectively. Column DtManuf stores Dates of Manufacturing.</p>	Id	Item	Category	CP	SP	DtManuf	101	Oats Biscuits	A	25.00	35.00	2018-10-19	102	Ragi Chips	B	50.00	65.00	2018-11-14	103	Oats	A	90.00	100.00	2019-03-30	104	Honey Biscuits		50.00	80.00	2018-10-23	105	Pumpkin Seeds	C	75.00	85.00	2018-12-25	
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105	Pumpkin Seeds	C	75.00	85.00	2018-12-25																																		
	(i)	To display Id, Item, CP in descending order of CP.	1																																				
	Ans	<code>SELECT Id, Item, CP FROM Shop ORDER BY CP DESC;</code>																																					
		<i>(½ mark for SELECT-FROM) ( ½ mark for ORDER BY)</i>																																					
	(ii)	To display the Names of all the items with category as 'A'.	1																																				
	Ans	<code>SELECT Item FROM Shop WHERE Category='A';</code>																																					
		<i>(½ mark for SELECT-FROM) ( ½ mark for WHERE)</i>																																					
	(iii)	To list names of Items and their date of manufacturing of those items that were manufactured after 1 <sup>st</sup> October 2018.	1																																				
	Ans	<code>SELECT Item, DtManuf FROM Shop WHERE DtManuf&gt;'2018-10-01';</code>																																					
		<i>(½ mark for SELECT-FROM) ( ½ mark for WHERE)</i>																																					
	(iv)	To count and display the category and number of Items of each Category.	1																																				
	Ans	<code>SELECT Category, COUNT(*) FROM Shop GROUP BY Category;</code>																																					
		<i>(½ mark for SELECT-FROM) (½ mark for GROUP BY)</i>																																					
	(v)	To display the Category of Items. (Duplicate Categories should not be displayed)	1																																				
	Ans	<code>SELECT DISTINCT Category FROM Shop;</code>																																					





		(1/2 mark for SELECT-FROM) (1/2 mark for DISTINCT)																
vi)		To display the maximum and minimum Selling Price.	1															
Ans		SELECT MAX (SP) , MIN (SP) FROM Shop;																
		(1/2 mark for SELECT-FROM) (1/2 mark for correct uses of any one of MAX and MIN)																
vii)		To display Item names that have 'Biscuit' anywhere in names.	1															
Ans		SELECT Item FROM Shop WHERE Item LIKE '%Biscuit%';																
		(1/2 mark for SELECT-FROM) (1/2 mark for correct uses of LIKE)																
viii)		To display Id, Item name of those items that have Category as NULL.	1															
Ans		SELECT Id, Item FROM Shop WHERE Category IS NULL;																
		(1/2 mark for SELECT-FROM) (1/2 mark for correct uses of IS NULL)																
ix)		SELECT MAX (DtManuf) , MIN (DtManuf) FROM Shop;	1															
Ans		<u>MAX (DtManuf)</u> <u>MIN (DtManuf)</u> '2019-03-30'      '2018-10-19'																
		(1/2 mark for each correct line of output)																
(x)		SELECT AVG (CP) FROM Shop WHERE Category = 'A' or Category = 'B' ;	1															
Ans		<u>AVG (CP)</u> 55.00																
		(1 mark for correct answer)																
6 (a)		Write the SQL query to create a table 'Vehicle' with the following structure :	2															
		<table border="1"> <thead> <tr> <th>Field</th> <th>Type</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>VehicleId</td> <td>Varchar(5)</td> <td>Primary key</td> </tr> <tr> <td>Model</td> <td>Varchar(50)</td> <td>Not Null</td> </tr> <tr> <td>DateManufacture</td> <td>Date</td> <td></td> </tr> <tr> <td>Price</td> <td>Decimal (9,2)</td> <td></td> </tr> </tbody> </table>	Field	Type	Constraint	VehicleId	Varchar(5)	Primary key	Model	Varchar(50)	Not Null	DateManufacture	Date		Price	Decimal (9,2)		
Field	Type	Constraint																
VehicleId	Varchar(5)	Primary key																
Model	Varchar(50)	Not Null																
DateManufacture	Date																	
Price	Decimal (9,2)																	
Ans		CREATE TABLE Vehicle (VehicleId                  VARCHAR (5)      PRIMARY KEY ,																





	<pre> Model          VARCHAR(50) NOT NULL , DateManufacture DATE , Price          DECIMAL(9,2) ); </pre>																																																	
Ans	<p>(½ mark for CREATE TABLE)  (½ mark for PRIMARY KEY constraint)  (½ mark for NOT NULL constraint)  (½ mark for Column Names with Data Types)</p> <p><b>Note :</b>  <b>INT</b> in place of <b>INTEGER</b> to be accepted  <b>CHAR</b> in place of <b>VARCHAR</b> to be accepted  <b>FLOAT</b> in place of <b>DECIMAL</b> to be accepted</p>																																																	
	<b>OR</b>																																																	
	What is the purpose of "NOT NULL" constraint applied on Column of a table? Explain with the help of example.	2																																																
Ans	<p>"NOT NULL" constraint is used to ensure to fill with appropriate value for that attribute/column while data in a tuple/row is inserted/entered.</p> <p>For example, consider the following CREATE command:</p> <pre> CREATE TABLE SCHOOL (StudentId      VARCHAR(5) PRIMARY KEY, SName          VARCHAR(50) NOT NULL , DateOfBirth    DATE, ); </pre> <p>While inserting details of a student, a person can skip to enter the value of the DateOfBirth for later entry, but can't skip, has to enter the value of SName attribute, as it has been created with the constraint "NOT NULL":</p>																																																	
	<p>(1 mark for any appropriate example)  (1 mark for valid explanation)</p>																																																	
(b)	<p>Consider the following tables Stationery and Supplier and answer the questions that follow:</p> <p style="text-align: center;"><b>Table: Stationery</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>ItemNo</th> <th>IName</th> <th>SCode</th> <th>Qty</th> <th>UnitPrice</th> <th>DtPurchase</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Gum Tube</td> <td>702</td> <td>100</td> <td>15</td> <td>30-Mar-2019</td> </tr> <tr> <td>102</td> <td>Double Stick Tape</td> <td>702</td> <td>150</td> <td>20</td> <td>01-Jan-2019</td> </tr> <tr> <td>103</td> <td>Pencil</td> <td>701</td> <td>125</td> <td>5</td> <td>14-Feb-2019</td> </tr> <tr> <td>104</td> <td>Colour Pencil</td> <td>701</td> <td>200</td> <td>10</td> <td>01-Jan-2019</td> </tr> <tr> <td>105</td> <td>Crayons Box</td> <td>702</td> <td>210</td> <td>50</td> <td>19-Dec-2018</td> </tr> <tr> <td>106</td> <td>Eraser</td> <td>702</td> <td>60</td> <td>10</td> <td>12-Dec-2018</td> </tr> <tr> <td>107</td> <td>Sharpener</td> <td>705</td> <td>160</td> <td>10</td> <td>23-Jan-2019</td> </tr> </tbody> </table> <p><b>Note:</b> DtPurchase column holds Date of Purchase  SCode column holds Supplier Code</p>	ItemNo	IName	SCode	Qty	UnitPrice	DtPurchase	101	Gum Tube	702	100	15	30-Mar-2019	102	Double Stick Tape	702	150	20	01-Jan-2019	103	Pencil	701	125	5	14-Feb-2019	104	Colour Pencil	701	200	10	01-Jan-2019	105	Crayons Box	702	210	50	19-Dec-2018	106	Eraser	702	60	10	12-Dec-2018	107	Sharpener	705	160	10	23-Jan-2019	2
ItemNo	IName	SCode	Qty	UnitPrice	DtPurchase																																													
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		<b>Table: Supplier</b> <table border="1" style="margin: auto;"> <thead> <tr> <th>SCode</th> <th>Sname</th> </tr> </thead> <tbody> <tr> <td>701</td> <td>Gupta Stationers</td> </tr> <tr> <td>702</td> <td>Study Stationers</td> </tr> <tr> <td>705</td> <td>Avon &amp; Company</td> </tr> </tbody> </table>	SCode	Sname	701	Gupta Stationers	702	Study Stationers	705	Avon & Company	
SCode	Sname										
701	Gupta Stationers										
702	Study Stationers										
705	Avon & Company										
	(i)	Can we set SCode as the Primary key of Stationery table ? State reason.	1								
	Ans	No. SCode attribute has some repeated values in the table "Stationery", as a supplier can supply more than one items, thus SCode can't be used as the Primary Key									
		<i>(1/2 Mark for the correct answer 'No')</i> <i>(1/2 Mark for mentioning valid reason)</i>									
		<b>OR</b>									
		Identify the Primary key of Stationery table. Write reason for your choice.	1								
	Ans	ItemNo can be used as the Primary key of Stationery table. All the values of ItemNo are unique, which is the requirement to become the Primary Key.									
		<i>(1/2 Mark for the correct answer 'ItemNo')</i> <i>(1/2 Mark for mentioning valid reason)</i>  <i>Note: Instead of ItemNO, IName is also to be accepted as correct answer.</i>									
	(ii)	What should be the data type of 'DtPurchase' column?	1								
	Ans	Data type : DATE									
		<i>(1 mark for correct data type )</i>									
	(c)	With reference to the above given tables (in Q6 b), write SQL statements for (i), (ii) and (iii) given below:									
	(i)	To display ItemNo, Name of Item, Supplier Code and Supplier Name of all items in ascending order of Date of Purchase.	2								
	Ans	<b>SELECT ItemNo, IName, SCode, Sname FROM Stationary A, Supplier B WHERE A.SCode=B.SCode ORDER BY DtPurchase;</b>  <b>OR</b> <b>SELECT ItemNo, IName, SCode, Sname FROM Stationary, Supplier WHERE Stationary.SCode=Supplier.SCode ORDER BY DtPurchase;</b>									
		<i>(1/2 mark for SELECT)</i> <i>(1/2 mark for FROM)</i> <i>(1/2 mark for correct use of WHERE/JOIN)</i> <i>(1/2 mark for correct use of ORDER BY)</i>									





	(ii)	To display Name of Item, Date of Purchase, Supplier Code and Supplier Name of all items that were purchased between '01-Dec-2018' and '31-Jan-2019' (Both dates inclusive)	2
	Ans	<pre>SELECT IName, DtPurchase, SCode, Sname FROM Stationary A, Supplier B WHERE A.SCode=B.SCode AND (DtPurchase BETWEEN '2018-12-01' AND '2019-01-31'); OR SELECT IName, DtPurchase, SCode, Sname FROM Stationary A, Supplier B WHERE A.SCode=B.SCode AND DtPurchase&gt;='2018-12-01' AND DtPurchase&lt;='2019-01-31';</pre>	
		<p>(1/2 mark for SELECT)  (1/2 mark for FROM)  (1/2 mark for correct use of WHERE/JOIN)  (1/2 mark for correct use of BETWEEN or equivalent)</p>	
	(iii)	To add 10.00 to UnitPrice of all items that have unit price less than 10.00 in Stationery table.	2
	Ans	<pre>UPDATE Stationery SET UnitPrice=UnitPrice+10 WHERE UnitPrice&lt;10;</pre>	
		<p>(1/2 mark for UPDATE)  (1 mark for SET)  (1/2 mark for WHERE)</p>	
		<b>OR</b>	
		Write SQL statement to delete rows with SCode greater than 701 in Supplier table.	2
	Ans	<pre>DELETE FROM Supplier WHERE SCode&gt;701;</pre>	
		<p>(1/2 mark for DELETE)  (1/2 mark for FROM)  (1/2 mark for WHERE)  (1/2 mark for correct condition)</p>	
7	(a)	How does e-governance reduce corruption? Write one point.	2
	Ans	<p>e-Governance reduces corruption as:</p> <ol style="list-style-type: none"> <li>1. It brings more transparencies of Government processes, policies and decisions</li> <li>2. It reaches to more people and spreads awareness about new policies and facilities being offered by the Government.</li> <li>3. Date and time of every transaction is automatically recorded for which the Government is accountable.</li> <li>4. Practices like influences and bribing are reduced</li> </ol>	
		( 2 marks full for mentioning any one valid point similar to the above points)	





<b>(b)</b>	Write two advantages of Online shopping over traditional shopping.	1												
<b>Ans</b>	<p>Some of the advantages of Online shopping over traditional shopping are as follows:</p> <ol style="list-style-type: none"> <li>1. More buying options for the customers.</li> <li>2. Shopping can be done at leisure time.</li> <li>3. Travel time and trouble can be avoided.</li> <li>4. Various options for monetary transactions.</li> <li>5. Some stores/websites offer convenient return policies.</li> </ol>													
	<i>( ½ mark each for any two valid points similar to the above points)</i>													
<b>(c)</b>	<p>Mr. Gagan is creating a form for his Company. Help him choose most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries:</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>To enter CUSTOMER CODE</td> </tr> <tr> <td>2</td> <td>To enter CUSTOMER NAME</td> </tr> <tr> <td>3</td> <td>To allow user to enter a brief description about the Customer</td> </tr> <tr> <td>4</td> <td>To choose Type of Items bought by customer (out of Snacks, Groceries, Healthcare, Beauty Products)</td> </tr> <tr> <td colspan="2">Note : More than one Type may be chosen.</td> </tr> </tbody> </table>	S.No.	Function	1	To enter CUSTOMER CODE	2	To enter CUSTOMER NAME	3	To allow user to enter a brief description about the Customer	4	To choose Type of Items bought by customer (out of Snacks, Groceries, Healthcare, Beauty Products)	Note : More than one Type may be chosen.		2
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<b>Ans</b>	<table border="1"> <thead> <tr> <th>S.No.</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Text Field/ComboBox</td> </tr> <tr> <td>2</td> <td>Text Field</td> </tr> <tr> <td>3</td> <td>ComboBox/CheckBox</td> </tr> <tr> <td>4</td> <td>CheckBox</td> </tr> </tbody> </table>	S.No.	Function	1	Text Field/ComboBox	2	Text Field	3	ComboBox/CheckBox	4	CheckBox			
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	<i>( ½ mark for each correct answer)</i>													

