

**PRE-BOARD EXAMINATION (2019-2020)**

**GRADE: XII CBSE**

**TOTAL MARKS:**

70
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**INFORMATICS PRACTICES**

**DATE: 27/01/2020**

**TIME: 3 Hrs.**

**General Instructions:**

All questions are compulsory, however question number 2, 4 and 6 have internal choices.

1.	a)	Expand the following terms: i) URL ii) FSF	1
	b)	State reason why Star topology requires more cable length than Bus topology.	1
	c)	Which of the following is/are not 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.	1
	d)	Swarag is confused between the terms ASCII and Unicode. Help him by differentiating between ASCII and Unicode.	1
	e)	Compare BUS topology with STAR topology.	2
	f)	What is OSS? Write two examples each of software in the following categories: (i) Open Source Operating System (ii) Open Source Web Browser	4
2.	a)	Shalini is learning Java programming language, as it allows developers to write code that can run on any machine, regardless of architecture or platform. Help her in finding solutions of her problems: i) She wants to compare two integer values for equality in her java code. Out of (=) and (==), which operator she should use and why? ii) Help her in writing Java code to initialize two integer variables named num1 and num2 with values 5 and 10 respectively. Increase the value of num1 by 5 and decrease the value of num2 by 5.	4

	<p>b) Rewrite the following code using switch case:</p> <pre>int day=Integer.parseInt(jTextField1.getText()); if(day&gt;=1 &amp;&amp; day&lt;=5)     JOptionPane.showMessageDialog(this, "Working Day"); else if(day&gt;=6 &amp;&amp; day&lt;=7)     JOptionPane.showMessageDialog(this, "Off Day"); else     JOptionPane.showMessageDialog(this, "Invalid Entry");</pre> <p style="text-align: center;"><b>OR</b></p> <p>What is the difference between setVisible() and setEnabled() methods?</p>	2
	<p>c)</p> <p>i) Albert works as a website developer in Global Website Designers company. currently he has created following tags in XML:          &lt;STUDENT&gt;...&lt;/STUDENT&gt;          &lt;Student&gt;....&lt;/Student&gt;          Are these tags part of HTML code or XML code?          Are these same same or different?</p> <p>ii) Ms. Sangeeta wants to add few descriptive lines in the HTML code which should not be displayed on the webpage rather should remain inactive during execution. Suggest her the solution along with example.</p> <p style="text-align: center;"><b>OR</b></p> <p>I) Write the purpose of HTML. Distinguish between &lt;P&gt; and &lt;BR&gt; tag ?          II) Shambhavi has to design two web pages with following specifications:          i. One web page should have an unordered list.          ii. Another web page should have background “Yellow” in colour.          Suggest her suitable tag(s) and attribute(s) for the above specifications.</p>	4
3.	<p>a) An attribute A of datatype varchar(20) has the value “Amit” . The attribute B of datatype char(20) has value ”Karanita” .          How many characters are occupied in attribute A ? How many characters are occupied in attribute B?</p> <p>b) In today’s digitized world with a need to store data electronically, it is very important to store the data in the databases. SQL is used to interact with the Database Management System.          I) Classify the following commands according to their type :(DDL/DML)          i) INSERT INTO ii) ALTER TABLE          II) Which clause would you use with Select to achieve the following:          i) To select the values that match with any value in a list of specified values.          ii) Used to display unrepeated values of a column from a table.</p>	1  4

III) Chhavi has created a table named Orders, she has been asked to increase the value of a column named salesamount by 20. She has written the following query for the same.

Alter table Orders Add salesamount =salesamount+20;  
Is it the correct query? Justify.

c) Observe the given table named "Loan" carefully and predict the output of the following queries:

Loan

File_No	Cust_Name	PhoneNo	Loan_Amt	Bank	Cheque_Dt
619095	Ms.Roshni	9899965430	809876	HBDC Ltd.	2017-06-15
234252	Mr.Rajesh	8654327890	745738	ICUCI Ltd.	2017-07-22
543613	Mrs.Sapna	8883546354	NULL	NBI Ltd.S	2017-07-24
435467	Mr.Navneet	9764747474	647484	ICUCI Ltd.	2017-08-13
263427	Ms.Pooja	8746454742	546373	HBDC Ltd.	2017-08-30

- i. select count(file\_no)-count(loan\_amt) from loan;
- ii. select Cust\_Name, Loan\_Amt from loan where month(cheque\_dt)=7;
- iii. SELECT concat(left(file\_no,2),right(cust\_name,2)) AS "ID" from loan where Bank='ICUCI Ltd.';
- iv. select round(loan\_amt-loan\_amt\*10/100) As "Discounted Payment" from loan where loan\_amt>700000;

d) Geetanjali had created a table "Customer" in the database "Test". Immediately after the successful creation of the database, she wrote the Rollback command to undo the creation of the table. Did she execute rollback successfully? Explain.

4. a) Satyam is designing a frame in Netbeans containing list box. Help him in writing suitable Java statement to extract selected item from a given listbox named "jList1."

**OR**

Mention any one advantage of jCheckBox control over jRadioButton control.

b) Prachi is working with following swing controls:

**JButton, JLabel, JTextField, JCheckBox.**

Suggest her any two basic methods commonly available with all the four controls mentioned above.

**OR**

How JLabel is different from JTextField control at run time?

c) What will be an output of the following code if value of variable application is 1?

```

switch(application)
{
case 0 : jTextField1.setText("RDBMS");
case 1 : jTextField1.setText("BROWSER");
case 2 : jTextField1.setText("OS"); break;
case 3 : jTextField1.setText("PHOTO EDITOR"); break;
default : jTextField1.setText("Application Software"); break;
}

```

1

**OR**

Re-write the above given code through if-else statements.

d) Vijay has developed a software for planning personal budget. A screenshot of the same is shown below:

4

Total Income, Expenses of Bills (Water/Electricity), Groceries, Entertainment, other expenses and whether money is to be sent to Hostel are entered by the user. Sum of Expenses, Grand Total of Expenses and Savings are calculated and displayed by the program.

Write the code to do the following :

- i) When 'CALCULATE' button is clicked, Sum of Expenses, Total Expenses and Savings should be calculated and displayed in appropriate text fields.
  - Sum of Expenses is calculated by adding expenses on Bills(Water/Electricity), Groceries, Entertainment and other expenses.

	<ul style="list-style-type: none"> <li>Grand Total of Expenses is calculated according to the following criteria: If 'Money to be sent to Hostel' checkbox is selected, 3000.00 is to be added to the sum of expenses. If it is not selected, Grand Total of Expenses is the same as sum of expenses.</li> <li>Savings = Total Income – Grand Total of Expenses.</li> </ul> <p>ii) When 'CLEAR' button is clicked, all text fields and checkbox should be cleared.</p>	
d)	<b>OR</b>	4
	<p>Anju, a beginner in java programming has written following code with some mistakes:</p> <pre>int k=0; string s="Save Earth"; int l=s.length; for(int i=0;k&lt;l;i++) { jTextArea1.append(s+\n); k++; };</pre> <p>Help her in identifying and correcting the errors. Convert the correct code into do while looping statement.</p>	
e)	<p>Find output of the following Java code snippet:</p> <pre>String City="Delhi",PinCode="110001",Str=""; City=City+" "+PinCode; JOptionPane.showMessageDialog(null,City); int l=City.length(); int i=0; while(i&lt;l) { Str=Str+City.substring(6); i=i+15; } JOptionPane.showMessageDialog(null,Str);</pre>	2
f)	<p>Mr. Suman, a programmer in New Era Programming World has designed a registration page for a hobby club as shown below:</p>	6

Fee for different hobbies are as follows:

Hobby	Fee
Dancing	1000
Drawing	1500
Music	2000
Singing	2500

Help him in writing the code to do the following:

- As per the hobby chosen in the hobby combo box, fee should be displayed in the respective text field named t1 as per the criteria given above after clicking on “Check Fee” button.
- If a candidate belongs to “Jr. Category” then a discount of 10% should be given in displayed in the text field.
- After clicking on the “Net Fee” button, Net Fee should be calculated and displayed in the respective text field as per the given formula:

$$\text{Net Fee} = \text{Fee} - \text{Discount}$$

- Write suitable java code to close the application.
  - Write java statement to add a new hobby “Reading” in the combo box at run time.
- OR
- Write java statement to make the Net Fee text field named txtNetFee un-editable at run time.

5.	a)	While creating a table named “Employee”, Mr. Rishi got confused as which data type he should chose for the column “ENAME” out of char and varchar. Help him in choosing the right data type to store employee name. Give valid justification for the same.	2																																																																													
	b)	Ms. Shalini has just created a table named “Employee” containing columns Ename, Department, Salary. After creating the table, she realized that she has forgotten to add a primary key column in the table. Help her in writing SQL command to add a primary key column empid. Also state the importance of Primary key in a table.	2																																																																													
	c)	<p>Consider the following table:</p> <table border="1" data-bbox="212 611 1414 1230"> <thead> <tr> <th>No</th> <th>Title</th> <th>Author</th> <th>Type</th> <th>Pub</th> <th>Qty</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Data Structure</td> <td>Lipschutz</td> <td>DS</td> <td>McGraw</td> <td>4</td> <td>217</td> </tr> <tr> <td>2</td> <td>Computer Studies</td> <td>French</td> <td>FND</td> <td>Galgottia</td> <td>2</td> <td>75</td> </tr> <tr> <td>3</td> <td>Advanced Pascal</td> <td>Schildt</td> <td>PROG</td> <td>McGraw</td> <td>4</td> <td>350</td> </tr> <tr> <td>4</td> <td>Dbase Dummies</td> <td>Palmer</td> <td>DBMS</td> <td>PustakM</td> <td>5</td> <td>130</td> </tr> <tr> <td>5</td> <td>Mastering C++</td> <td>Gurewich</td> <td>PROG</td> <td>BPB</td> <td>3</td> <td>295</td> </tr> <tr> <td>6</td> <td>Guide Network</td> <td>Freed</td> <td>NET</td> <td>ZPress</td> <td>3</td> <td>200</td> </tr> <tr> <td>7</td> <td>Mastering Foxpro</td> <td>Seigal</td> <td>DBMS</td> <td>BPB</td> <td>2</td> <td>135</td> </tr> <tr> <td>8</td> <td>DOS guide</td> <td>Norton</td> <td>OS</td> <td>PHI</td> <td>3</td> <td>175</td> </tr> <tr> <td>9</td> <td>Basic for beginners</td> <td>Morton</td> <td>PROG</td> <td>BPB</td> <td>3</td> <td>40</td> </tr> <tr> <td>10</td> <td>Mastering Window</td> <td>Cowart</td> <td>OS</td> <td>BPB</td> <td>1</td> <td>225</td> </tr> </tbody> </table> <p>i. Select all the PROG type published by BPB from LIBRARY.</p> <p>ii. DISPLAY A LIST OF ALL BOOKS WITH Price more than 130 and sorted by Qty descending.</p> <p>iii. Display a report, listing books, current value and misplacement charges for each book in the above table. Calculate the misplacement charges for all books as Price*1.25.</p> <p>iv. Alter the table by adding one more column ‘old Price’.</p>	No	Title	Author	Type	Pub	Qty	Price	1	Data Structure	Lipschutz	DS	McGraw	4	217	2	Computer Studies	French	FND	Galgottia	2	75	3	Advanced Pascal	Schildt	PROG	McGraw	4	350	4	Dbase Dummies	Palmer	DBMS	PustakM	5	130	5	Mastering C++	Gurewich	PROG	BPB	3	295	6	Guide Network	Freed	NET	ZPress	3	200	7	Mastering Foxpro	Seigal	DBMS	BPB	2	135	8	DOS guide	Norton	OS	PHI	3	175	9	Basic for beginners	Morton	PROG	BPB	3	40	10	Mastering Window	Cowart	OS	BPB	1	225	4
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	d)	<p>Rishi, a class XII student has given following commands for the given purposes:</p> <p>i. To add a new column “Rating” :</p> <pre>update table library add column rating varchar(20);</pre> <p>ii. To give an increase of 50 Rs. to all the books:</p> <pre>alter library set price=price+50;</pre> <p>Check if above given SQL commands will be able to achieve desired task or not. Justify your answer. Suggest the correction (s) if required.</p>	2																																																																													

6.	a)	<p style="text-align: center;">Write SQL query to create a table “BOOKS” with the following structure:</p> <p style="text-align: center;">Table: BOOKS</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Field Name</th> <th>Datatype</th> <th>Size</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>Book_ID</td> <td>Integer</td> <td>2</td> <td>Primary key</td> </tr> <tr> <td>Book_Name</td> <td>Varchar</td> <td>20</td> <td></td> </tr> <tr> <td>Category</td> <td>Varchar</td> <td>10</td> <td></td> </tr> <tr> <td>Issue_Date</td> <td>Date</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;"><b>OR</b></p> <p>Help Ramesh in identifying any two columns for a table named student along with their suitable data type.</p>	Field Name	Datatype	Size	Constraint	Book_ID	Integer	2	Primary key	Book_Name	Varchar	20		Category	Varchar	10		Issue_Date	Date			2																													
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	b)	<p>In a Bank’s database, there are two tables ‘Customer’ and ‘Transaction’ as shown below.</p> <p style="text-align: center;">CUSTOMER</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Acc_No</th> <th>Cust_Name</th> <th>Cust_City</th> <th>Cust_Phone</th> <th>Open_Bal</th> </tr> </thead> <tbody> <tr> <td>2101001</td> <td>Sunita</td> <td>Ambala</td> <td>970557614</td> <td>10000</td> </tr> <tr> <td>2201002</td> <td>Snandhya</td> <td>Patna</td> <td>8223545233</td> <td>15000</td> </tr> <tr> <td>2301003</td> <td>Vivek</td> <td>New Delhi</td> <td>9972136576</td> <td>13000</td> </tr> <tr> <td>2401004</td> <td>Meena</td> <td>New Delhi</td> <td>9321305453</td> <td>10000</td> </tr> </tbody> </table> <p style="text-align: center;">TRANSACTION</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Trans_Id</th> <th>Acc_No</th> <th>Transaction_Type</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Tr001</td> <td>2301003</td> <td>Credit</td> <td>15000</td> </tr> <tr> <td>Tr002</td> <td>2201002</td> <td>Credit</td> <td>20000</td> </tr> <tr> <td>Tr003</td> <td>2101001</td> <td>Debit</td> <td>3500</td> </tr> <tr> <td>Tr004</td> <td>2301003</td> <td>Credit</td> <td>26000</td> </tr> <tr> <td>Tr005</td> <td>2301003</td> <td>Credit</td> <td>24000</td> </tr> </tbody> </table>	Acc_No	Cust_Name	Cust_City	Cust_Phone	Open_Bal	2101001	Sunita	Ambala	970557614	10000	2201002	Snandhya	Patna	8223545233	15000	2301003	Vivek	New Delhi	9972136576	13000	2401004	Meena	New Delhi	9321305453	10000	Trans_Id	Acc_No	Transaction_Type	Amount	Tr001	2301003	Credit	15000	Tr002	2201002	Credit	20000	Tr003	2101001	Debit	3500	Tr004	2301003	Credit	26000	Tr005	2301003	Credit	24000	2
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		<p>Consider these tables while attempting the questions given below:</p> <p>(i) Identify the candidate keys of Customer table.  <b>OR</b>  Briefly explain the concept of Candidate keys.</p> <p>(ii) Which column can be considered as foreign key column in Transaction table?  <b>OR</b>  Identify Primary Key column of Transaction table.</p>	
	c)	<p>With reference to the above given tables, attempt the questions given below:</p> <p>i) Write a query to display customer's name who has withdrawn the money.  <b>OR</b>  Write a query to display customer's name along with their transaction details.</p> <p>ii) Write a query to display customer's name who have not done any transaction yet.  <b>OR</b>  How many rows and column will be there in the Cartesian product of the above given tables.</p> <p>Also mention the degree and cardinality of the Cartesian product of the above given tables.</p> <p>i) Select Acc_No, sum(Amount) from Customer c, Transaction t where  c.Acc_No=t.Acc_No group by c.Acc_No having Transaction_Type="Credit";  <b>OR</b>  Discuss the significance of having clause with group by statement with suitable example.</p>	6
7.	a)	<p>Mr. Sanjay, banking professional want to enroll himself in an e-Learning course. Mention him any two challenges of e-Learning.</p>	2
	b)	<p>Which of the following is/are the advantage(s) of e-Governance</p> <p>i) technology makes governance speedier  ii) Computer literacy and basic Internet usage is not required.  iii) governance is made transparent, that is most of the information is available to public.</p>	1
	c)	<p>Mention any one social and economic benefit of ICT.</p>	2