

PRE-BOARD EXAMINATION- JAN 2018
INFORMATICS PRACTICES (Set - A)

Class : XII

Date : ()

Max. Marks: 70

Duration : 3 Hrs

Note:

- (i) All questions are compulsory.
- (ii) Answer the questions after carefully reading the text.
- (iii) Give example wherever required.
- (iv) Put the questions no. properly.

1	Answer the following questions		
	a)	<p>Ms. Noora, General Manager of Global Nations Corporate recently discovered that the communication between her company's accounts office and HR office is extremely slow and signals drop quite frequently. These offices are 125 meters away from each other and connected by an Ethernet cable.</p> <p>(i) Suggest her a device, which can be installed in between the offices for smooth communication.</p> <p>(ii) What type of network is formed by having this kind of connectivity out of LAN,MAN and WAN?</p>	1
	b)	<p>i. Ms. Sofia wants to prevent unauthorized access to/from his company's local area network. Write the name of a system (software/ hardware), which she should install to do the same</p> <p>ii. Beauty Lines Fashion Inc. is a fashion company with design unit and market unit 135 metres away from each other. The company recently connected their LANs using Ethernet cable to share the stock related information. But after joining their LANs, they are not able to share the information due to loss of signal in between. Which device out of the following. should you suggest to be installed for a smooth communication?</p>	1
	c)	<p>Identify the type of Topology from the following:</p> <p>i. If each node is connected with the help of independent cable with the help of a central switching (communication controller)</p>	1

	ii. If each node is connected with the help of a single co-axial cable.	
d)	Identify the following device: i. A device that is used to connect different types of networks. It performs the necessary translation so that connected networks can communicate properly. ii. A device that converts data from digital bit stream into an analog signal and vice versa.	1
e)	After realizing the issues with proprietary software, Ms. Basma has decided to use only Open Source Software. Suggest any one suitable open source software to her, for each of the following categories: i. Operating System ii. Browser	1
f)	Read the given activities carefully and mention in front of the activity whether that activity is snooping or eavesdropping: i. Setting up unauthorized parallel telephone lines. Installing some software/hardware which captures the data while on its way. ii. Getting someone's login information by casually watching what he/she is typing. Reading the files on someone's computer in an unauthorized manner.	1
g)	Ms. Samar has to write a paragraph in English on nobel laureates as a part of his holiday homework. She is using a software in which she types the text in Hindi and the software automatically converts the text into English. For example, if she types "नोबेल प्राइज इस गिवेन इन ससक्स कैटेरीज" the software converts it into "Nobel Prize is given in six categories". What kind of text entry is it	1
h)	i. Ms. Iona says that the following number indicates an address : 208.77.188.166 What is above address called? ii. To which device the following Address is assigned 00:A0:C9:14:C8:35	1
i)	The name assigned to one the server is Microsoft.com. What is the name of the process to get an IP address from the Microsoft.com server?	1
j)	Read the given activities carefully and mention in front of the activity whether that activity is Radio Waves or Micro Waves:	1

	<p>i. Waves travel in straight lines and cannot penetrate any solid object.</p> <p>ii. Waves are omni-directional, so the transmitting and receiving antenna need not be aligned.</p>	
2	Answer the following questions	
a)	<p>Consider the statement :</p> <pre>Pincode = "56001"; Gender = 'M';</pre> <p>What is the datatype of Pincode and Gender?</p>	1
b)	<p>Ms.Amina has typed the following comments. Write the comments using another way.</p> <pre>//This is a comment spreading //over two lines</pre>	1
c)	<p>Find the output of the following HTML code</p> <pre><ol type = "a" start="4" > Bake in oven for an hour Remove from oven Serve </pre>	1
d)	<p>Ms.Hiba 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>	1
e)	<p>Write Java code to declare a variable named Price of floating type. Assign a value 10.56 to this variable. Overwrite the value of price with its double value. Decrease the value of price by 5.</p>	1
f)	<p>Study the following code and answer the questions that follow:</p> <pre>public class Example2 extends Example1 { public Example() { initComponents(); } }</pre> <p>i. Which feature of object oriented programming is depicted above?</p> <p>ii. Name the base class and the derived class.</p>	1

	<p>g) Study the following code and answer the questions that follow:</p> <pre>String SMS=jTextArea1.getText(); int L=SMS.length(),Balance; System.out.println(Math.pow(2,3)); Balance=160-L; jTextField2.setText(Integer.toString(L)); jTextField3.setText(Integer.toString(Balance)); JOptionPane.showMessageDialog(this, "Bye");</pre> <p>Identify Abstract class(es), native class(es), object(s).</p>	1
	<p>h) Ms.Joanna works as a website developer in Global Website Designers company. Currently she has created following tags in XML:</p> <pre><TEACHER>...</TEACHER> <teacher>....</teacher></pre> <p>Are these tags part of HTML code or XML code? Are these tags are same or different?</p>	1
	<p>i) Which feature(s) of Object Oriented Programming is illustrated in the following code snippet:</p> <pre>String A = "Hello", B = "There", C; int num1 = 10, num2 = 20; String C = A + B; int num3 = num1 + num2; C = B.substring(1); B = A.substring(2,4);</pre> <p>a. Method Overloading b. Inheritance c. Operator Overloading d. Both a and c</p>	1
	<p>j) Carefully study the code given below. It is giving an error whenever it is compiled:</p> <pre>float f = 12.4; //Statement 1 double d = 123.6543; //Statement 2 int num1 = Math.round(f); // Statement 3 float num2 = Math.round(d); // Statement 4 int num2 = Math.round(d); // Statement 5</pre> <p>Identify the statement(s) that will result in an error. Justify.</p>	1
3	Answer the following questions	

	a) Write MySQL command will be used to open an already existing database "LIBRARY" and display all the tables in it.	1										
	b) A table "A" in a database has degree 3 and cardinality 8. Table "B" has degree 4 and cardinality 10. Ms. Rahma wants to display all information stored in both of these related tables. She forgot to specify equi-join condition in the query. How many rows and columns will get displayed on execution of this query?	1										
	c) Consider an "Employee" table with "Location" column. Entering data for the Location column is optional. If one enters data for a row with no value for the "Location" column, what value will be saved in the "Location" column? Write SQL statement to display the details of rows in the "employee" table whose location is left blank.	1										
	d) In 'Marks' column of 'Student' table, for Rollnumber 2, the Class Teacher entered the marks as 45. However there was a totaling error and the student has got her marks increased by 5. Which MySQL command should she use to change the marks in 'Student' table. Write the complete query.	1										
	e) 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.	1										
	<p>f) Ms. Shafna is inserting "Sharma" in the "LastName" column of the "Emp" table but an error is being displayed. Write the correct SQL statement.</p> <p>INSERT INTO Emp('Sharma') VALUES (Lastname) ;</p> <p>Ms. Shafna wants to delete the records where the "LastName" is "Sharma" in the 'Emp' Table. She has entered the following SQL statement. An error is being displayed. Rewrite the correct statement.</p> <p>DELETE 'Sharma' LastName FROM Emp</p>	1										
	<p>g) Consider the table:</p> <p style="text-align: center;">Table: Company</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>CompanyCode</th> <th>Donations</th> </tr> </thead> <tbody> <tr> <td>C101</td> <td>13000</td> </tr> <tr> <td>C102</td> <td>NULL</td> </tr> <tr> <td>C104</td> <td>7000</td> </tr> <tr> <td>C105</td> <td>4000</td> </tr> </tbody> </table> <p>What output will be displayed by the following SQL statement:</p>	CompanyCode	Donations	C101	13000	C102	NULL	C104	7000	C105	4000	2
CompanyCode	Donations											
C101	13000											
C102	NULL											
C104	7000											
C105	4000											

	<p>1) SELECT AVG(Donations) FROM Company; 2) Select Count(*) from Company; 3) Select Min(Donations) from Company; 4) Select Donations+100 from Company;</p>	
	h) What is the relationship between SQL and MySQL ?	1
	i) Define the term 'database transaction'.	1
4	Answer the following questions	
	<p>a) Find the output of the following code.</p> <pre>String Salary = "95312"; int C=10; JOptionPane.showMessageDialog (null, Integer.toString(C)+ Salary.length() + Integer.parseInt(Salary)); JOptionPane.showMessageDialog (null, Salary.substring(2,3)+ (Salary.length() + Integer.parseInt(Salary)));</pre>	1
	<p>b) What will be the content of JTextArea1 after executing the following code assuming that JTextrea1 initially contains blank (null) value.</p> <pre>int x=10; for(int i=2;i<=9;i+=4) { JTextArea1.append("\n"+(i+x++)+"\t"+x); x -= i+2; }</pre>	2
	<p>c) Rectify the error underlining the corrections made</p> <pre>int P,Q=0; for (P=10; P=12; P++) { Q + P ; } JOptionPane.showMessageDialog (this,"P:"+P+" Q:"+Q+");</pre>	1
	d) Write a statement to make JTextArea1 as un-editable and disable the button jButton1.	1
	<p>e) Write the values that will be assigned to a and b after executing the following Java code :</p> <pre>String p, q, r, a, b, c; int m; p = "AISSE2018";</pre>	1

	<pre>q = "Learning Java"; r = "ProgrammingFun"; a = r.substring(3); b = p.concat(a);</pre>	
f)	<p>What values will be assigned to b, r and t after execution of the following code. Rewrite the following program by converting for loop to do..while loop and switch statement to if statement.</p> <pre>int b=0,r=0,t=0; for(int i = 10; i <= 12; i++) { switch(i) { case 11: { b=i; break; } case 12: r=i; default: { t=i; } } }</pre>	2
g)	<p>Observe the following code and identify what is wrong with the code and rectify it.</p> <pre>String login=jTextField1.getText(); String pwd=jTextField2.getText(); if(login="XII" && pwd="IP") JOptionPane.showMessageDialog(null, "Welcome"); else JOptionPane.showMessageDialog null,"Pl try again");</pre>	1
h)	<p>Find the output of the following code.</p> <pre>String A="Ideal",B="Ideal"; System.out.println(10==20); System.out.println(10==10); System.out.println(A==B); System.out.println(A.equals(B));</pre>	1
5	<p>Mr. Kunal works as a programmer in "Delicious IceCream" parlour where he has designed a software to compute charges to be paid by the customer. A screenshot of the same is shown below :</p>	

Delicious IceCream

Name

Type of IceCream

1 Scoop

2 Scoops

IceCream Sundae

Toppings

Colourful Sprinkles

Chocolate Chips

Dry Fruits

IceCream Charges :

Toppings Charges :

Total Amount to Pay :

A customer can take any icecream out of 1 Scoop/ 2 Scoops/ IceCream Sundae. A customer can also opt for one, two or all three toppings over IceCream. Charges of toppings are extra. Each toppings is for 20.00. For example if two toppings are chosen, 40.00 will be displayed as Toppings Charges.

a)	<p>After selecting appropriate Radio Button and checkbox(es), (if required), when 'Calculate Amount' button is clicked, IceCream charges, Toppings Charges and 'Total Amount to Pay' should be calculated and displayed in the respective text fields.</p> <p>Charges for IceCreams are as follows :</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Type of IceCream</th> <th style="padding: 5px;">IceCream Charges</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">1 Scoop</td> <td style="padding: 5px;">50.00</td> </tr> <tr> <td style="padding: 5px;">2 Scoops</td> <td style="padding: 5px;">70.00</td> </tr> <tr> <td style="padding: 5px;">IceCream Sundae</td> <td style="padding: 5px;">110.00</td> </tr> </tbody> </table> <p>Total Amount to Pay = IceCream Charges + Toppings Charges.</p>	Type of IceCream	IceCream Charges	1 Scoop	50.00	2 Scoops	70.00	IceCream Sundae	110.00	3
Type of IceCream	IceCream Charges									
1 Scoop	50.00									
2 Scoops	70.00									
IceCream Sundae	110.00									
b)	When 'CLEAR' button is clicked, all the textfields, radio buttons and checkboxes should be cleared.	1								
c)	When 'Exit' button is clicked, the application should close.	1								
6	Answer the following questions									

In a database there are two tables "ITEM" and "CUSTOMER" as shown below:

Table: ITEM

ID	ItemName	Company	Price
1001	Moisturiser	XYZ	40
1002	Sanitizer	LAC	35
1003	Bath Soap	COP	25
1004	Shampoo	TAP	95
1005	Lens Solutions	COP	350

Table: CUSTOMER

C_ID	CustomerName	City	ID
01	Samridhh Ltd	New Delhi	1002
05	Big Line Inc	Mumbai	1005
12	97,8	New Delhi	1001
15	Tom N Jerrv	Bangalore	1003

- | | | |
|----|---|---|
| a) | Identify the Primary key and foreign key in the ITEM and Customer tables if any. | 1 |
| b) | How many primary key(s) and foreign key(s) we can have in a table? | 1 |
| c) | Can we have NULL and duplicate (repeating) values for column ID in ITEM table and CUSTOMER table? | 1 |
| d) | Write SQL query to display the CustomerName, City from table Customer, and ID, ItemName and Price from table item, with their corresponding matching for those customer who resides in New Delhi or Mumbai and Item Price is greater than or equal to 40. | 2 |
| e) | Write SQL query to display ITEM detail which has no Customers yet. | 1 |

7 Consider the Table EXAM given below.

Table: EXAM

No	Name	Stipend	Subjet	Average	Division
1	Karan	400	English	68	FIRST
2	Aman	680	Mathematics	72	FIRST
3	Javed	500	Accounts	67	FIRST
4	Bishakh	200	Informatics	55	SECOND
5	Sugandha	400	History	35	THIRD
6	Suparna	550	Geography	45	THIRD

a)	Write sql query to display Division, Sum of stipend and average of Stipend according to Division wise. And only for FIRST and THIRD Division students. (i.e. Division wise Sum and average of stipend. Only for FIRST and THIRD Division.)	2
b)	Write sql query to count the number of students, who have either Account or Informatics as Subject.	1
c)	Write sql query to display Name , 50% of Stipend and Average increased by 10 for all students whose name contains "u" as second character and "a" as last character in ascending order of name.	1
d)	Write sql query to increase the Average of THIRD and SECOND Division students by 7% who have Stipend less than 500.	1
e)	Write sql query to change the colum name of "No" to "StudentNO" of integer type and make this as primary key.	1
f)	Find the output of the following query Select Concat(Left(Name, 3),Substr(Subject, -5,2)) from Exam where Subject='Informatics';	1
g)	What is the difference between following two sql queries? Delete from Exam; Drop table Exam:	1
8	Answer the following questions	
a)	Select Round(789.995,2)+Truncate(189.995,-2);	1
b)	Select INSTR(MID (UPPER('iDeaL school'), 2,4), 'A');	1

	c) Select DAYOFYEAR(CURDATE()), DAYNAME(CURDATE()), DAYOFMONTH(CURDATE()), DAYOFWEEK(CURDATE());	1								
	d) Select Length('Prof.L.M.SHARMA')+POW(3,4);	1								
9	Answer the following questions									
	<p>Given below is the 'Department' table :</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>DEPCODE</th> <th>DEPNAME</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>ADMIN</td> </tr> <tr> <td>102</td> <td>RECEPTION</td> </tr> <tr> <td>103</td> <td>PERSONNEL</td> </tr> </tbody> </table> <pre> SET AUTOCOMMIT = 0; UPDATE Department SET DEPNAME = 'OFFICE' WHERE DEPNAME = 'ADMIN'; INSERT INTO Department VALUES (104, 'HRD'); UPDATE Department SET DEPNAME = 'FRONT OFFICE' WHERE DEPNAME = 'RECEPTION'; COMMIT; DELETE FROM Department WHERE DEPNAME = 'FRONT OFFICE'; ROLLBACK; SELECT * FROM Department; </pre> <p>What will be the output of the above given SELECT statement?</p>	DEPCODE	DEPNAME	101	ADMIN	102	RECEPTION	103	PERSONNEL	2
DEPCODE	DEPNAME									
101	ADMIN									
102	RECEPTION									
103	PERSONNEL									
10	Answer the following questions									
	a) Mr. Sanjay, a banking professional want to enroll himself in an e-Learning course. Mention him any two challenges of e-Learning.	1								
	b) Write three important features of e-Governance. Give URL of one of the commonly used - eGovernance portals.	2								

	c) Ms. Anuja is creating a form for her practical file. Help her to choose most appropriate controls from List Box, Combo Box, TextField, TextArea, Radio Button, Check box, Label and Command button for the following entries from user: (i) A message "Enter Marks" in front of a Text Field. (ii) An input to choose more than one subject from a set of choices. (iii) An input for entering remarks (iv) An input for accepting Gender.	2