Sample Question Paper

Subject: Informatics Practices
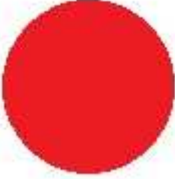
Class: XII

Session 2016-17

Time: 3 Hrs.			M.M. – 70

1	(a)	After realizing the issues with proprietary software, Ms. Sunita 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

	(b)	Expand the following: i. ODF ii. PPP	1
	(c)	What is Domain Name Resolution?	1
	(d)	How a Phonetic text entry is different from Keymap based text entry?	1

	(e)	Which of the following activity can be termed as Eavesdropping:
		
		  i. If Jack sets up an unauthorized parallel telephone line to capture the data.
		  ii. If Jill has stolen his friend's keyboard.
		  iii. If Martina installs some receiver hardware to capture the data while on its way.
		  iv. If Kim gets someone's login information by casually watching what he/she is typing.
		
		Select the best suitable option from the following:
		  i. Option i only
		
		  ii. Option ii only
		
		  iii. Option i and ii both
		
		  iv. Option i and iii both
		
		How Eavesdropping is different from snooping by mentioning any one activity which will be termed as snooping?
			2

	(f)	It's an era of networking! Almost everyone and everything is connected through one way or the other, hats off to the technology. We have never been so much linked as we are today.
		Daniel has just started his hands on practice of networking. Help him in the following:
		  I. He has just connected 10 computers of his resource room to establish a network. Name the network (LAN/MAN/PAN/WAN) which will be formed. Mention any two main benefits which Daniel could achieve by establishing a network.
		  II. Help him in identifying the correct topology which has following
			4

		characteristics:
		    ▪ Its very easy to diagnose the fault in this topology.
		    ▪ Failure of central hub/switch leads to failure of the entire network.
		
		Depict the topology by drawing the diagram showing 4 interconnected computers through central hub/switch.	

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

	(b)	Mr. Sahil, a programmer in a VISA processing company, has written the following code:
		
		``
		int ch=Integer.parseInt(jTextField1.getText());
		switch(ch)
		{
		case 1:
		    jTextField2.setText("Short Term Single Entry Visa Granted");
		case 2:
		    jTextField2.setText("Short Term Multiple Entry Visa Granted");
		case 3:
		    jTextField2.setText("Long Term Single Entry Visa Granted");
		case 4:
		    jTextField2.setText("Long Term Multiple Entry Visa Granted");
		default:
		    jTextField2.setText("Invalid Entry");
		}
		``
		
		No matter what value is being entered in the text field jTextField1, this program always give a message "Invalid Entry". Help Mr. Sahil in identifying the problem and its reason. Also suggest him a suitable correction in the code.
			2

	(c)	Realizing the importance of the Internet, Ms. Shikha a Mathematics teacher, has decided to use Internet as a medium to teach her students Mathematics in an interesting way.	4

I. She wants to design a webpage as shown below to create a mathematics tutorial on the topic "Shapes" using HTML.

Mathematics in a fun way	
Shapes	Images
Circle	
Square	

She has written following HTML code for the same but she is not getting the desired output. Help her in identifying the error(s) and suggest the suitable corrections:

```
<html>
<head><title>Shapes</title></head>
<body>
<table>
<tr>
<table heading>Mathematics in a fun way</table heading>
</tr>
<tr>
<td>Shapes</td>
<td>Images</td>
</tr>
<tr>
<td>Circle</td>
<td><img source="circle.jpg"></td>
</tr>
<tr>
<td>Square</td>
<td><img source="square.jpg"></td>
</tr>
</table>
</body>
</html>
```

II. Help her in matching Column A with suitable statements of Column 'B'

Column A	Column B
XML	We use predefined tags to design webpages.
It is designed to store and transport data	HTML
Tags are not case sensitive	XML
HTML	Elements must have a closing tag.

3	(a)	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. 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.	4

	(b)	I.　Name any one Single row function and any one Aggregate function. Also mention the difference in their working.
		II.　Explain why the following queries give different outputs on execution:
		
		　　i. SELECT COUNT(ENAME) FROM EMP;
		　　Output:
		　　5
		
		　　ii. SELECT Count(*) FROM EMP;
		　　Output:
		　　8
			4

	(c)	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.	2
4	(a)	Ms. Meena is not able to understand the statement **"Java is a case sensitive language".** Help her in understanding the above mentioned statement by giving suitable example.	1
	(b)	Ms. Rachel is designing a frame in Netbeans in which she has used four Radio Button controls. She want that only one radio button out of four should be selected at a time. Which property of the Radio Button should be selected to	1

		achieve the same?	

	(c)	What will be displayed in jTextArea1 after the following code is executed:
		
		int i;
		for(i=10;i<50;i=i+30)
		{
		i=i+15;
		jTextArea1.append(""+i);
		}
		jTextArea1.append("\n"+i);
			1

	(d)	Do as directed :
		
		I. Find the output of the following Java code snippet after execution of each java statement labelled as Stmt 1, Stmt 2, Stmt 3, Stmt 4:
		
		String str1="VASUDHAIVA",str2="KUTUMBAKAM";
		jTextArea1.append((str1.substring(0,4))); //Stmt 1
		jTextArea1.append((str2.substring(4))); //Stmt 2
		jTextArea1.setText(jTextArea1.getText()+jTextArea1.getText().length());//Stmt 3
		jOptionPane1.showMessageDialog(null,jTextArea1.getText().length()); //Stmt 4
		
		II. Rewrite the following code using do while loop:
		int num=Integer.parseInt(jTextField1.getText());
		while(num<=40)
		{
		jOptionPane1.showMessageDialog(null,num);
		num=num*20;
		}
		jOptionPane1.showMessageDialog(null,"Bye Bye");
			4

	(e)	The following code has error(s). Rewrite the correct code underlining all the corrections made :
		    value1=1, value2=2;
		    while(value1<value2)
		    jTextArea1.append ("\n"+value1*value2;
		            value1++
		    }
			2

	(f)	Mr. Ashish works as a programmer in "Universal Technologies Pvt. Ltd.". He has designed a Library software to generate the member ship fee depending upon the membership type considering discount eligibility as well. A screenshot of the same is shown below:	

Help him in writing the code to do the following:

i. After selecting appropriate Radio Button, when 'Check Fee' button is clicked, fee should be displayed in the respective text field according to the following criteria:

Membership Type	Fee
Monthly	500
Quarterly	1000
Yearly	1500

ii. After selecting appropriate Radio Button, when 'Check Discount' button is clicked, appropriate discount should be displayed in the respective text field according to the following criteria:

Discount Eligibility	Discount
Students	200
Other	100

6

		iii. When 'Calculate' button is clicked, Net Fee should be calculated and displayed in the respective text field as per the given formula: Net Fee = Fee – Discount iv. When 'Clear All' button is clicked, All the text fields should be cleared.	
5	(a)	Write the output of the following SQL queries: SELECT POW(INSTR('My_Database','_'),2);	1
	(b)	Is NULL and 0(zero) same? Jusify your answer.	1
	(c)	Observe the given table carefully and answer the following questions: 	PanNo	Name	Phoneno	Address
CIZPW123A	Rajesh Kumar	9599123456	WZ11 – Rajouri Garden, Delhi
ABWQ2341B	Hemant Kumar	9812345678	Modern Apartments, Pitampura, Delhi
DERA9786T	Naveen Sharma	7868654235	CA 22, Sector 21 Rohini,Delhi
PARD3457L	Sourabh Verma	8933217645	JD 61, Sector20,Gurgaon
GDTF8762P	Nishant Kumar	NULL	Modern Apartments, Pitampura, Delhi

MERT2376G	Hemant Kumar	9811110891	F40, Sector 19, Rohini, Delhi	
				
				  i. Name the column that might have a Primary Key constraint. Justify your answer.
				  ii. Name the column that might have a Unique constraint. Justify your answer.
					2

	(d)	Consider the following table: <center>Table: PharmaDB</center> | RxID	DrugID	DrugName	Price	PharmacyName	PharmacyLocation
---	---	---	---	---	---
R1000	5476	Amlodipine	100.00	Rx Pharmacy	Pitampura, Delhi
R1001	2345	Paracetamol	15.00	Raj Medicos	Bahadurgarh, Haryana
R1002	1236	Nebistar	60.00	MyChemist	Rajouri Garden, Delhi
R1003	6512	VitaPlus	150.00	MyChemist	Gurgaon,Haryana
R1004	5631	Levocitrezine	110.00	RxPharmacy	South Extension,Delhi		4

		Write commands in SQL for (i) to (iv):
		     i. To increase the price of "Amlodipine" by 50.
		     ii. To display all those medicines whose price is in the range 100 to 150.
		     iii. To display the Maximum price offered by pharmacy located in "Gurgaon"
		     iv. To display the Drug ID, DrugName and Pharmacy Name of all the records in descending order of their price.	

	(e)	On the basis of the Table Pharma ,write the output(s) produced by executing the following queries:
		     i. SELECT RxID, DrugName, Price from PharmaDB where PharmacyName IN ("Rx Parmacy", "Raj Medicos");
		
		     ii. SELECT PharmacyName, COUNT(*) FROM PharmaDB GROUP BY PHARMACY NAME
			2

6	(a)	Write SQL query to create a table "Job" with the following structure:	2

Table: Job

Field name	Datatype	Size	Constraint
J_Code	Integer	3	Primary Key
J_Description	Varchar	25	Not Null
J_Chg_Hr	Integer		
J_Lastupdate	Date		

	(b)	Consider the tables given below which are linked with each other and maintains referential integrity:	

Table: SAP

SAPID	ItemCode	ItemName	ItemStorage Location
S1001	1001	Receiver	W12-B3-R24
S1002	1002	Transponder	W13-B7-R87
S1003	1003	Battery Bank	W21-B1-R87
S1004	1004	Inverter	W21-B11-R2
S1005	1005	Genset	W22-B15-R16

Table : Store

StoreID	ItemCode	StoreLocation	ReceivedDate
1201	1001	Hauz Khas	2016/05/20
1202	1002	Rajouri Garden	2016/06/14
1203	1003	Rohini	2016/05/06
1204	1004	Hauz Khaas	2016/07/15
1205	1005	Rajendra Place	2016/05/27

		With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii) below:	6
		i. To display the ItemCode,ItemName and ReceivedDate of all the items .	

		ii. To display SAPID,ItemName,ItemStorageLocation of all the items whose Received date is after 2nd May 2016.	
		iii. SELECT SAPID,ItemName,STOREID FROM SAP,Store WHERE SAP.ItemCode=Store.ItemCode AND StoreLocation = "Hauz Khas"	
	(c)	What will be the degree and cardinality of the cartesian product formed while combining both the above given tables 'SAP' and 'Store' ?	1
	(d)	Sangeeta is not able to add a new record in the table 'Store' through the following query: Insert into store values (1206,1006,'Karol Bagh', '2016/07/25'); Identify the error if there is any.	1
7	(a)	Observe the given domains carefully and identify the category it belongs out of e-Governance/e-Business/e-Learning: 　i.　AMAZON: www.amazon.in 　ii.　PMO(Prime Minister's office): www.pmo.gov.in	1
	(b)	Mention any one social and economic benefit of ICT.	2
	(c)	Ms. Rachna, works as a programmer in 'Plan My Trip' travel company. She wishes to design a Flight booking page. Help her in choosing appropriate controls for the specified task from Text field, Label, Radio button, Check box, List box, Combo box, Button and write in the third column.	2

S. No.	Control used to	Control
1	Traveler's Name	
2	Source City/Destination City	
3	Trip Type (One Way Trip / Round Trip / Multi City or Stop Over)	
4	Booking Class (Economy/Premium Economy/Business)	