Class: XII
Informatics Practices - OLD (265)
Marking Scheme 2019-20

Time allowed: 3 hours **Maximum Marks: 70**

Q No		Marks
1.	**(a)** Which of the following are open standards? .OGG .DOC .BMP .ODF **Ans**: .OGG .ODF ***(½ Mark for each correct answer)***	**1**
	(b) Ms. Ivana, a leading marketing professional working in a multinational company, is most of the time on move to cater her profession demands. Although she carries her laptop with her all the time but many a times she require to take some data from her office PC. She has to make several requesting phone calls to her colleague Ms. Barbara to send her required documents from her office PC. Suggest her any one popular software name so that she can herself remotely access her office PC anytime from anywhere.  **Ans:** Team Viewer ***(1 Mark for correct answer)***	**1**
	(c) Write the URL of any one e-Governance website **Ans:** India.gov.in ***(1 Mark for correct answer)***	**1**
	(d) International Tour and Travels company has set up its new branch office in Jaipur where different buildings are spanned over in the radius of 900 meter in Jaipur. Name the network formed in the following situations : (i) The branch office is connected with the regional office in New Delhi. (ii) All the buildings of branch office are connected to each other. **Ans:** (i) WAN (ii) LAN ***(½ Mark for each correct answer)***	**1**
	(e) Deepti is confused between the terms ASCII and Unicode. Help her by differentiating between ASCII and Unicode. **Ans:** ASCII: It is a 7 bit code that can represent 2^7 characters. It is platform dependent. UNICODE: It is 8 bit, 16 bit and 32 bit code to represent 2^8 , 2^{16}, 2^{32} characters respectively. It is platform independent. ***(1 Mark for each correct differentiation)***	**2**

	(f) Many of the programming brains has shifted their focus from Proprietary software to Free and Open software. Mention any two freedom offered by Free software. Going with the flow, Sandhya has downloaded a software from the internet which can be freely distributed and used by anyone but the source code is not available. Is it Freeware or free software? Justify your answer as well. Similarly Premjith wants to install a software on his system that can help him to create, edit and save office documents but he does not want to purchase the software. Suggest him a good software for the same. **Ans:** Any two freedom offered by Free software are: The freedom to run the program for any purpose. The freedom to redistribute copies. ***(1 Mark for each correct freedom)*** It is Freeware as freeware software are freely distributed and used by anyone but the source code is not available while source will be available with Free software. ***(1 Mark for correct answer)*** Openoffice.org ***(1 Mark for correct answer)***	**4**

2.	**(a)** Ruby, a class XI student has just started learning java programming. Help her in the following:
	i. Explain her the concept of variable and data type by suitable example.
	ii. Help her in understanding the difference between assignment operator and comparison operator with the help of appropriate example.
	
	Ans: i. Variables are named storage location to store values temporarily which can be changed during program execution.
	
	Data type states the way the values of that type are stored, the operations that can be done on that type and the range for that type.
	
	For example:
	int marks;
	In the above statement, int is the data type and marks is the name of variable which store values temporarily.
	
	(1 Mark for correct answer)
	(1 Mark for correct explanations)
	
	ii. Assignment operator (=) is used to assign any value in a variable/constant while comparison operator (= =) is used to compare values.
	
	For example:
	int marks=90;
	In the above statement value 90 is assigned to the variable named marks.
	
	if(marks==40)
	jTextField1.setText("Just Pass");
	In the above if statement, value of marks is being compared with 40.
	
	(1 Mark for correct answer)
	(1 Mark for correct explanations)
		4

	(b)	Will the output from the following two code be any different?
		First Code:
		`int x=2,y=40;`
		`while(y<=x) {`
		`jTextField1.setText(""+x);`
		`x=x+8;`
		`}`
		
		Second Code :
		`int x=2,y=40;`
		`do {`
		`jTextField1.setText(""+x);`
		`x=x+8;`
		`} while(y<=x);`
		
		Give reasons for your answer.
		
		OR
		
		Predict the output of the following code:
		`int n=4,f=0,i;`
		`for(i=1;i<=n;i++)`
		`{`
		`f=f*i;`
		`}`
		`jTextField1.setText(""+f);`
		`jTextField2.setText(""+i);`
		
		Ans: Yes it will be different as in First Code there will be no output while in Second Code the output will be 2 because in while loop condition is false in the beginning so control will not come inside the loop even for once while in do while loop, loop will be executed at least once even if the condition is false.
		
		(1 Mark for correct answer)
		(1 Mark for correct explanations)
		
		OR
		
		Output:
		0
		5
		(1 Mark for each correct answer)
			2

	(c)	Dev, a website designer with "Creative Designers Pvt. Ltd." has written the following code. Observe the code given below and answer the following questions:
		`<company>`
		`<employee eid=1>`
		`<name>Albert</name>`
		`<dept deptid="d1">Computer</dept>`
		`</employee>`
		`<employee eid=2>`
		`<name>Manisha</name>`
		`<dept deptid="d2">Accounts</dept>`
		`</employee>`
		`</company>`
			4

i. Are these tags part of HTML code or XML code?
ii. Identify the root element.
iii. Mention any two child elements.
iv. Mention any two attributes.

OR

Mention any two main differences between HTML and XML. Also mention any two main features of XML for which it's used extensively now a days.

Ans: XML code
i. Company
ii. name, dept
iii. eid, deptid

(1 Mark for each correct answer)

OR

Two main differences between HTML and XML:

- HTML is used to display data and to focus on formatting of data, whereas XML is used to describe data and focus on what data is.
- HTML tags are predefined, whereas XML tags are not predefined. We create our own tags in XML as per the requirement.

(1 Mark for each correct difference point)

Two main features of XML for which it's used extensively now a days:

- XML is used to store data.
- XML is used to exchange data.

(1 Mark for each correct feature)

3. **(a)** What is the purpose of SQL? **1**

Ans: SQL is structured query language. It is a standard language of all the RDBMS.

(1 Mark for correct answer)

(b) Mr. Manav, a database administrator in "Global Educational and Training Institute" has created following table named "Training" for the upcoming training schedule: **4**

Training

Training_Id	Name	Email_Id	Topic	City	Fee
ND01	Mr. Rajan	raj@gmail.com	Cyber Security	New Delhi	10000
GU01	Ms. Urvashi	urv@yahoo.com	ICT in Education	Gurugram	15000
FD01	Ms. Neena	neenarediff.com	Cyber Security	Faridabad	12000
ND02	Mr. Vinay	NULL	ICT in Education	New Delhi	13000
GU02	Mr. Naveen	nav@gmail.com	Cyber Security	Gurugram	NULL

	Help him in writing SQL query for the following purpose: i. To count how many female candidates will be attending the training. ii. To display list of free trainings. iii. To display all the cities where Cyber Security training is scheduled along with its fee. iv. To add a column feedback with suitable data type **Ans:** i. Select count(name) from training where name like 'Ms.%'; ii. Select * from training where fee is NULL; iii. Select city, fee from training where topic = 'Cyber Security'; iv. Alter table training add feedback varchar(20); ***(1 Mark for each correct query)***	
	(c) Observe the table named "Training" given above carefully and predict the output of the following queries: i. select city from training where topic = 'Cyber Security'; ii. select count(Training_Id) from training where email_id like '%gmail% '; iii. select AVG (Fee) from training where Topic = 'Cyber Security'; iv. select name from training where INSTR (Email_Id, '@')=0; **Ans:** i. New Delhi Faridabad Gurugram ii. 2 iii. 11000 iv. Ms. Neena ***(1 Mark for each correct Output)***	**4**
	(d) What is the degree and cardinality of the above given table named 'Training'. **Ans:** Degree: 6 Cardinality: 5 ***(½ Mark for each correct answer)***	**1**
4.	**(a)** Shiva has placed two radio button on a payment form designed in NetBeans to accept mode of payment one out of cash or card. To his surprise, during runtime, a customer is able to select both the options for a single transaction. What went wrong? **OR** Mention any one advantage of jCheckBox control over jRadioButton control. **Ans:** Shiva has forgot to attach both the radio buttons to one button group to make them mutually exclusive. **OR** Multiple options can be selected through jCheckBox control while jRadioButton allows selecting a single option. ***(1 Mark for correct answer)***	**1**

	(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? **Ans: getText(), setText()** ***(½ Mark for each correct answer)*** **OR** jLabel is an un-editable control, used to display text or information at run time while jTextField control is an editable control where user can type in characters at run time. ***(1 Mark for correct answer)***	**1**

	(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;
	}
	OR
	
	Re-write the above given code through if-else statements.
	
	Ans: OS
	
	(1 Mark for correct answer)
	OR
	
	if(application= =0)
	jTextField1.setText("RDBMS");
	else if(application= =1)
	jTextField1.setText("BROWSER");
	else if(application= =2)
	jTextField1.setText("OS");
	else if(application= =3)
	jTextField1.setText("PHOTO EDITOR");
	else
	jTextField1.setText("Application Software");
	
	(1 Mark for correct converted code)
		1

	(d) Anju, a beginner in java programming has written following code with some mistakes:
	int k=0;
	string s="Save Earth";
	int l=s.length;
	for(int i=0;k<l;i++)
	{
	jTextArea1.append(s+\n);
	k++;
	};
	Help her in identifying and correcting the errors.
	Convert the correct code into do while looping statement.
	
	OR
	
	Observe the given code:
	int ctr=10;
	while(ctr>5)
	{
	ctr=ctr-2;
	}
	Attempt the following questions based on the above given code:
	i. How many times the above given loop will run and what will be the value of ctr, immediately after exiting from the loop.
	ii. Out of entry controlled or exit controlled loop, above given loop will come under which category and why?
		4

Ans:

int k=0;
String s="Save Earth";
int l=s.length();
for(int i=0;k<l;i++)
{
jTextArea1.append(s+"\n");
k++;
}

(½ Mark for each correct error identification)

int i=0,k=0;
String s="Save Earth";
int l=s.length();
do
{
jTextArea1.append(s+"\n");
k++;i++;
}while(k<l);

(2 Mark for correct conversion)

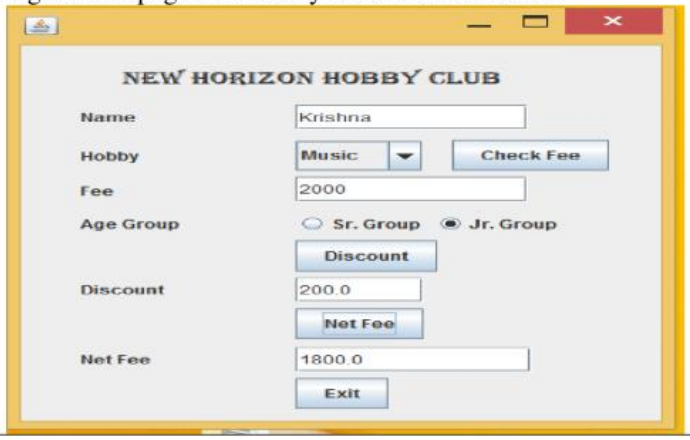
OR

i. 3 times
4

(1 Mark for each correct answer)

	ii.	Above given loop will come under Entry controlled loop as in the above given loop condition is being checked at the time of entering in the loop. ***(1 Mark for correct answer)*** ***(1 Mark for correct justification)***	

	(e)	Study the following code and answer the questions that follow:
		Study the following code and answer the questions that follow:
		String str="Green World, Clean World";
		int len=str.length(),remain;
		remain=100-len;
		jTextField2.setText(str.toUpperCase());
		jTextField3.setText(Integer.toString(remain)+" more charachters can be entered");
		i. Predict the output displayed in text fields named jTextField2 and jTextField3 after running the above code.
		ii. Identify and name any two method of String class used in the above code.
		OR
		Explain the purpose of pow() method with the help of suitable java code. Also mention that pow() method belongs to which class?
		
		Ans: i. GREEN WORLD, CLEAN WORLD
		76 more charachters can be entered
		
		ii. length(),toUpperCase()
		
		(½ Mark for each correct answer)
		OR
		pow() method, a mathematical method, helps in calculating the power of any number.
		For example:
		int num=2,power=4;
		int ans=Math.pow(num,power);
		t1.setText(""+ans);
		
		The above code will calculate the value of 2^4 and will give answer 16.
		pow() method belongs to math class.
			2

	(f)	Mr. Suman, a programmer in New Era Programming World has designed a registration page for a hobby club as shown below: 	**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:

i. 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.

ii. If a candidate belongs to "Jr. Category" then a discount of 10% should be given in displayed in the text field.

iii. After clicking on the "Net Fee" button, Net Fee should be calculated and displayed in the respective text field as per the given formula:

Net Fee = Fee – Discount

iv. Write suitable java code to close the application.

v. 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.

Ans: i.
```
int x=c1.getSelectedIndex();
int fee=0;
if(x==0)
fee=1000;
else if(x==1)
  fee=1500;
  else if(x==2)
  fee=2000;
  else if(x==3)
  fee=2500;
  t2.setText(""+fee);
```

(1.5 Mark for correct code)

ii.
```
double disc=0;
int fee=Integer.parseInt(t2.getText());
if(r2.isSelected())
disc=fee*10/100;
t3.setText(""+disc);
```

(1.5 Mark for correct code)

iii.
```
double disc=Double.parseDouble(t3.getText());
int fee=Integer.parseInt(t2.getText());
double net=fee-disc;
t4.setText(""+net);
```

(1 Mark for correct code)

iv.
System.exit(0);

(1 Mark for correct code)

v.
c1.addItem("Reading");

OR

txtNetFee.setEditable(false);

(1 Mark for correct code)

5. **(a)** Write any one similarity and one difference between primary key and unique Constraint **2**

Ans: Similarity: Column with both the constraints will only take unique values.
Difference: Column with Primary key constraints will not be able to hold NULL values while Column with Unique constraints will be able to hold NULL values.
(2 mark for correct answer)

(b) Ms. Pari, a beginner in SQL is not able to understand the meaning of "Cancelling a Transaction". Help her in understanding the same. Also mention suitable command for it. **2**

Ans: Cancelling a transaction means rolls the transaction to the beginning. It aborts any changes made during the transaction and the state of database is returned to what it was before the transaction began to execute.

Rollback command is used for the same.

(2 mark for correct answer)

(c) Consider the following tables Library given below: **4**

Library

Bid	Name	Author	Price	Mem_name	Issue_Date	Status
B01	Wings of Fire	A.P.J Abdul Kalam	550	Sarita	2018-05-20	Returned
B02	The Monk who sold his Ferrari	Robin Sharma	340	Simmi	2018-03-15	Not Returned
B03	You can win	Shiv Khera	230	Rajat	2018-04-16	Returned
B04	Who moved my cheese	Spencer Jhonson	450	Ram	2018-03-17	Not Returned
B05	Real Success	Patrick Mather-Pike	250	Sia	2018-06-18	Not Returned

i. Suggest the suitable data type for Issue_Date column.
ii. Suggest the suitable SQL command to change the size of column name from 30 character to 50 characters.
iii. Mention the significance of Bid column in table Library.
iv. Suggest the suitable command to display a list of the books in a sequence so that first all the book's name should be displayed which has been returned and after that all the book's name which has not been returned should be displayed.

Ans: i. Date
ii. alter table library modify name varchar(50);
iii. Bid column will always have a unique value which will help uniquely identify each record of Library table.
iv. Select name from library order by status desc;

(1 mark for each correct answer)

(d) Rishi, a class XII student has given following commands for the given purposes: **2**
i. To add a new column "Rating" :
update table library add column rating varchar(20);
ii. To give an increase of 50 Rs. to all the books:
alter library set price=price+50;
Check if above given SQL commands will be able to achieve desired task or not. Justify your answer. Suggest the correction (s) if required.

Ans: No, above commands will not be able to achieve desired task as update and alter commands have been interchanged.

In order to achieve desired result, following corrections should be incorporated in the previously used commands:

i. To add a new column "Rating" :
Alter table library add column rating varchar(20);
ii. To give an increase of 50 Rs. to all the books:
Update library set price=price+50;

(2 mark for correct answer)

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

Table: BOOKS

Field name	Datatype	Size	Constraint
BOOK_ID	Integer	2	Primary Key
BOOK_NAME	Varchar	20	
CATEGORY	Varchar	10	
ISSUE_DATE	Date		

OR

Help Ramesh in identifying any two columns for a table named student along with their suitable data type.

Ans: Create table Books
(
BOOK_ID Integer (2) Primary Key,
BOOK_NAME Varchar (20),
CATEGORY Varchar (20),
ISSUE_DATE Date
);

(2 mark for correct query)

OR

Column Name	**Data Type**
RollNo	Integer
Name	Varchar(20)

(1 mark for each correct column name along with suitable data type)

(b) In a Bank's database, there are two tables 'Customer' and 'Transaction' as shown below.

Customer

Acc_No	Cust_Name	Cust_City	Cust_Phone	Open_Bal
2101001	Sunita	Ambala	9710557614	10000
2201002	Sandhya	Patna	8223545233	15000
2301003	Vivek	New Delhi	9972136576	13000
2401004	Meena	New Delhi	9321305453	10000

Transaction

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

Consider these tables while attempting the questions given below:

(i) Identify the candidate keys of Customer table. **1**

OR

Briefly explain the concept of Candidate keys.

Ans: Acc_No, Cust_Phone

(½ mark for each correct answer)

	OR All the columns having capability to become Primary Key are known as Candidate Keys. (ii) Which column can be considered as foreign key column in Transaction table? **OR** Identify Primary Key column of Transaction table. **Ans:** Acc_No **OR** Trans_Id ***(1 mark for correct answer)***	**1**
	(c) With reference to the above given tables, attempt the questions given below: i. Write a query to display customer's name who has withdrawn the money. **OR** Write a query to display customer's name along with their transaction details. ii. Write a query to display customer's name who have not done any transaction yet. **OR** How many rows and column will be there in the Cartesian product of the above given tables. Also mention the degree and cardinality of the Cartesian product of the above given tables. iii. 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"; **OR** Discuss the significance of having clause with group by statement with suitable example. **Ans:** i. Select cust_name from customer c,transaction t where c.Acc_No=t.Acc_No and Transaction_Type= "Debit"; **OR** Select cust_name, t.* from customer c, transaction t where c.Acc_No=t.Acc_No; ***(2 mark for correct query)*** ii. Select cust_name from customer c,transaction t where c.Acc_No!=t.Acc_No; ***(2 mark for correct query)*** **OR** Cartesian Product: Number of Rows: 20 Number of Columns: 9 Degree: 9 Cardinality: 20 ***(½ mark for each correct answer)***	**6**

	iii. 2301003 65000 2201002 20000 ***(2 mark for correct output)*** **OR** Sometimes we do not want to see the whole output produced by a statement with Group By clause. We want to see the output only for those groups which satisfy some condition. It means we want to put some condition on individual groups (and not on individual records). A condition on groups is applied by Having clause. For example consider the following query: 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"; This query will create account number wise groups and instead of displaying the total amount of all type of transactions, it will only display the total of credit transactions only. ***(2 mark for correct answer)***	
7.	**(a)** It's an era of online financial transactions. Help Julie in identifying any two challenges which a common man may face for the same. **Ans:** i. A common man should have an electronic gadget like smart phone or computer. ii. A common man should be oriented for online financial safety measures. ***(1 mark for each correct answer)***	**2**
	(b) Mention any one major environmental benefits of ICT to Ms. Megha so that she can utilize it in her future "Save Earth" campaign **Ans:** Major environmental impact of ICT on our society is that it is creating a virtually paperless work environment so reducing cutting down of trees for paper manufacturing. ***(1 mark for each correct answer)***	**1**
	(c) Ms. Achla, works as a Programmer in a survey firm named "National Survey Foundation". In her current project, she is supposed to design a survey page for an online educational training program. Help her in choosing the most appropriate controls for the specified task from Textfield, Label, RadioButton, CheckBox, ListBox, ComboBox, Button and write in the third column:	**2**

S. No.	Control used to input	Control
1	TRAINEE'S NAME	
2	TRAINING LOCATION	
3	GRADE THE SESSION (Excellent, Good, Satisfactory, Unsatisfactory)	
4	SUGGESTIONS	

Ans:

S. No.	Control used to input	Control
1	TRAINEE'S NAME	TextField
2	TRAINING LOCATION	Radio Button/Combo Box
3	GRADE THE SESSION (Excellent, Good, Satisfactory, Unsatisfactory)	Radio Button/Combo Box
4	SUGGESTIONS	Text Area

(1/2 mark for each correct answer)

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