Marking Scheme

Subject: Informatics Practices

Class: XII

Session 2017-18

Time: 3 Hrs.			M.M. 70
1	(a)	Mr. Ravi, an IT Help Desk executive needs to remotely login a customer's PC to provide him technical support. Suggest a remote access software to him.	1
	Ans	Teamviewer ***(1 Mark for correct answer)***	
	(b)	Identify the type of network (out of LAN/PAN/MAN/WAN) formed in the given diagram: 	1
	Ans	PAN ***(1 Mark for each correct answer)***	
	(c)	Identify the fastest wired media out of the following: Ethernet cable, Optical fiber, Co-axial cable	1
	Ans	Optical fiber ***(1 Mark for correct answer)***	
	(d)	Mention any two main advantages of star topology over bus topology.	1
	Ans	i. It has centralized control. ii. Fault diagnosis is easy. ***(½ Mark for each correct advantage)***	
	(e)	Discuss the significance of Bluetooth technology.	2
	Ans	Bluetooth is a wireless technology standard for exchanging data over short distances using short-wavelength radio waves. It is used in building personal area networks (PANs).	

		Now a days many gadgets and peripheral devices are Bluetooth enabled like Speakers, mouse, headphone, printer etc. ***(2 Mark for correct answer)***	
	(f)	I. Write down any two advantages of Open Source Software over Proprietary software. II. Ms. Sita trying to log into your Internet Banking account for online transaction activity. However, as strange as it may seem, she is denied of an access to the bank's website, in spite of having a swift internet connection. What do you think the reason behind this problem is and suggest her few simple precautions in order to overcome any such type of network security threats.	4
	Ans	I. i. Source code is available. ii. Money need not to be paid for procuring the license for usage and further distribution. ***(1 Mark for each correct advantage)*** II. She could be under a DoS attack! She should deploy an antivirus program and firewall into her network if not already done. This helps in restricting the bandwidth usage to authenticated users only. ***(1 Mark for correct reason identification)*** ***(1 Mark for suggesting correct precautions)***	
2	(a)	I. Help Manish in identifying the incorrect variable name with justification from the following: i. unit@price; ii. fee; iii. userid; iv. avg marks; II. Write Java code to declare a variable named Price of integer type. Assign a value 10 to this variable. Overwrite the value of price with its double value. Decrease the value of price by 5.	4

	Ans	I.
		i. unit@price; // Special symbols like '@' is not allowed in variable name
		iv. avg marks;// Spaces are not allowed in variable name
		
		(½ Mark for each correct identification of incorrect variable name)
		(½ Mark for each correct justification)
		
		II.
		int price;
		price=10;
		price=price*2;
		price=price-5;	

		(½ Mark for each correct statement)	

	(b)	Rewrite the following code using switch case:
		int day=Integer.parseInt(jTextField1.getText());
		if(day>=1 && day<=5)
		jOptionPane1.showMessageDialog(this, "Working Day");
		else if(day>=6 && day<=7)
		jOptionPane1.showMessageDialog(this, "Off Day");
		else
		jOptionPane1.showMessageDialog(this, "Invalid Entry");
			2

	Ans	int day=Integer.parseInt(jTextField1.getText());
		
		switch(day)
		{
		case 1:
		case 2:
		case 3:
		case 4:
		case 5:
		jOptionPane1.showMessageDialog(this, "Working Day"); break;
		case 6:
		case 7:
		jOptionPane1.showMessageDialog(this, "Off Day"); break;
		default:
		jOptionPane1.showMessageDialog(this, "Invalid Entry");
		}
		(2 Mark for correct conversion of if-else block to switch block)	

	(c)	i. 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. ii. How HTML is different from XML? Mention any two point of difference.	4
	Ans	i. She should use comments in HTML. Any text to make comments in HTML, should be preceded by <! and should end with -> Example: <body> <!- This is only used for comment -> Welcome </body> ***(1 Mark for correct solution)***	

		(1 Mark for correct example) ii. • 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 not case sensitive whereas XML tags are case sensitive. • HTML tags are predefined, whereas XML tags are not predefined. • XML is used to store and transfer the data over different platforms while HTML is used to design webpages. ***(2 Marks for any two correct point for differentiation)***	
3	(a)	Mention any two example of common Database Management System.	1
	Ans:	MySQL, Ingres, Postgres, Oracle etc. ***(½ Mark for any two correct example)***	
	(b)	Write the full forms of the following: i. DDL ii. DML	1
	Ans:	i. DDL-Data Definition Language ii. DML-Data Manipulation Language ***(½ Mark for each correct full form)***	
	(c)	Ms. Archana, a class XI student has just started learning MySQL. Help her in understanding the basic difference between Alter and Update command with suitable example. Also suggest her suitable command for the following purpose: i. To display the list of the databases already existing in MySQL. ii. To use the database named City. iii. To remove the pre-existing database named Clients. iv. To remove all the records of the table named "Club" at one go along with its structure permanently.	4
	Ans:	**Differentiation between ALTER and UPDATE command:**	

ALTER	**UPDATE**
It's a DDL command.	It's a DML command.
It can be used for the following purpose: • To add a new column. • To remove an existing column. • To modify a column. • To add/remove a constraint.	It's used to modify the records of the table.
Example: If a table named emp already exists with following columns:	Example: To modify the address to Noida from "New Delhi", we may use

		<table><tr><td>Empno</td><td>Name</td><td>Dept</td></tr></table> To add an address column, we may use following command: Alter Table emp add address varchar(20); the following command : Update emp set address= “Noida” where city= “New Delhi”; ***(1 Mark for correct differentiation between ALTER and UPDATE command)*** ***(1 Mark for suitable example)*** suitable command: i. Show Databases ii. Use City iii. Drop Database Clients iv. Drop table Club ***(½ Mark for each the correct answer)***	
	(d)	Observe the given table named “Loan” carefully and predict the output of the following queries: Loan <table><tr><td>File_No</td><td>Cust_Name</td><td>PhoneNo</td><td>Loan_Amt</td><td>Bank</td><td>Cheque_Dt</td></tr><tr><td>619095</td><td>Ms. Roshni</td><td>9899965430</td><td>809876</td><td>HBDC Ltd.</td><td>2017-06-15</td></tr><tr><td>234252</td><td>Mr. Rajesh</td><td>8654327890</td><td>745738</td><td>ICUCI Ltd.</td><td>2017-07-22</td></tr><tr><td>543613</td><td>Mrs. Sapna</td><td>8883546354</td><td>NULL</td><td>NBI Ltd.S</td><td>2017-07-24</td></tr><tr><td>435467</td><td>Mr. Navneet</td><td>9764747474</td><td>647484</td><td>ICUCI Ltd.</td><td>2017-08-13</td></tr><tr><td>263427</td><td>Ms. Puja</td><td>8746454742</td><td>546373</td><td>HBDC Ltd.</td><td>2017-08-30</td></tr></table> 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;	4

	Ans.	i.
		`+--------------------------------+`
		`| count(file_no)-count(loan_amt) |`
		`+--------------------------------+`
		`|                 1              |`
		`+--------------------------------+`	

		ii. +------------+----------+ | cust_name | loan_amt | +------------+----------+ | Mr. Rajesh | 745738 | | Mrs. Sapna | NULL | +------------+----------+ iii. +------+ | ID | +------+ | 23sh | | 43et | +------+ iv. +--------------------+ | Discounted Payment | +--------------------+ | 728888 | | 671164 | +--------------------+ ***(1 Mark for each the correct output)***	
4	(a)	Write down the full forms of the following: i. URL ii. IDE	1
	Ans	i. Uniform Resource Locator ii. Integrated Development Environment ***(½ Mark for each correct full forms)***	
	(b)	Which property is to be used during design time to add a list of countries in the list box?	1
	Ans	Model property ***(1 Mark for correct answer)***	

	(c)	What will be the final value of variable x after the following code is executed:
		
		int x=10;
		while(x>1)
		{
		x=x/3;
		++x;
			1

		} 	
	Ans	1 ***(1 Mark for correct answer)***	

	(d)	i. Find the output of the following Java code snippet after execution of each java statement labelled as Line 1, Line 2, Line 3, Line 4:
		
		String userid="INDIA",pwd="";
		pwd=userid.substring(0,2); //Line 1
		int L=userid.length(); //Line 2
		pwd=pwd.toLowerCase(); //Line 3
		pwd=pwd.concat(""+L); //Line 4
		
		ii. Rewrite the following code using for loop:
		
		int attempt=0;
		while(attempt<=3)
		{
		String login=jTextField1.getText();
		String pwd=jTextField2.getText();
		if(login.equals("XII") && pwd.equals("IP"))
		{
		jOptionPane1.showMessageDialog(null, "Welcome");
		break;
		}
		else
		jOptionPane1.showMessageDialog(null, "Pl try again");
		
		attempt++;
		}
			4

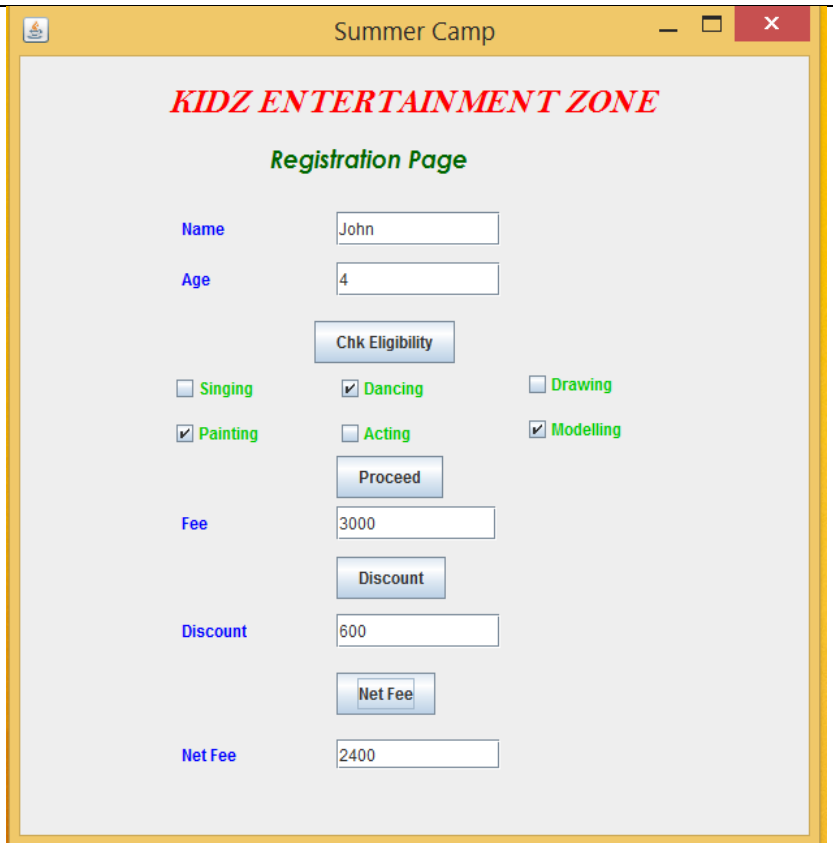
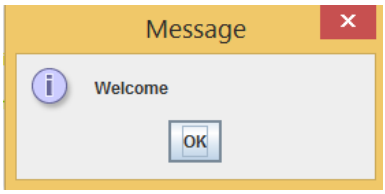
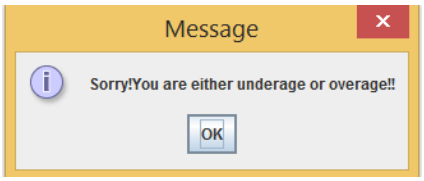
	Ans	i.
		IN
		5
		in
		in5
		(½ Mark for each correct output)
		
		ii.
		
		for(int attempt=0;attempt<=3;attempt++)
		{
		String login=jTextField1.getText();
		String pwd=jTextField2.getText();
		if(login.equals("XII") && pwd.equals("IP"))	

		{
		jOptionPane1.showMessageDialog(null, "Welcome");
		break;
		}
		else
		jOptionPane1.showMessageDialog(null, "Pl try again");
		
		}
		
		(2 Mark for correct code in for loop)	

	(e)	The following code has error(s). Rewrite the correct code underlining all the corrections made :
		int start=2;end=20;
		do;
		{
		start=start+start;
		while(start<=end)
			2

	Ans	int start=2**,**end=20; //Correction 1
		do //Correction 2
		{
		start=start+start;
		} //Correction 3
		while(start<=end)**;** //Correction 4
		
		(½ Mark for each correct correction)	

	(f)	Ms. Neelam works as a programmer in "Kidz Entertainment Zone". She has designed a Registration Page to calculate the total fee of summer camp depending upon the number of activities selected by the user considering age eligibility as well. A screenshot of the same is shown below:	

		 Help her in writing the code to do the following: i. After entering the age in the specified text field, when 'Chk Eligibility' button is clicked, a dialogue box should be displayed with a message "Welcome" if age is in between 3-13 years else the program should be terminated after displaying the message "Sorry! You are either underage or overage!!".   ii. After selecting the desirable activities, total fee should be displayed in the specified text field on the click of "Proceed" button at the rate of Rs. 1000 per activity. iii. A discount of 20% is applicable if more than one activity is chosen by the user. iv. After clicking on the "Net Fee" button, Net Fee should be calculated and displayed in the respective text field as per the given formula: NetFee = Fee – Discount	6

	Ans	i.
		int age=Integer.parseInt(jTextField2.getText());
		if(age>=3 && age<=13)
		{
		jOptionPane1.showMessageDialog(this, "Welcome");
		}
		else
		{
		jOptionPane1.showMessageDialog(this, "Sorry!You are either underage or overage!!");
		System.exit(0);
		}
		(2 Mark for correct code)
		
		ii.
		int count=0;
		if(jCheckBox1.isSelected())
		count++;
		if(jCheckBox2.isSelected())
		count++;
		if(jCheckBox3.isSelected())
		count++;
		if(jCheckBox4.isSelected())
		count++;
		if(jCheckBox5.isSelected())
		count++;
		if(jCheckBox6.isSelected())
		count++;
		jTextField3.setText(""+(count*1000));
		
		(2 Mark for correct code)
		
		iii.
		int fee=Integer.parseInt(jTextField3.getText());
		int disc=0;
		if(fee>1000)
		disc=fee*20/100;
		jTextField4.setText(""+(disc));
		
		(1 Mark for correct code)
		
		iv.
		int fee=Integer.parseInt(jTextField3.getText());
		int disc=Integer.parseInt(jTextField4.getText());
		jTextField5.setText(""+(fee-disc));	

		(1 Mark for correct code)	
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
	Ans:	Varchar would be the suitable data type for EName column as char data type is a fixed length data type while varchar is a variable length data type. Any employee's name will be of variable length so it's advisable to choose varchar over char data type. ***(1mark for the correct data type)*** ***(1mark for the correct Justification)***	
	(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
	Ans:	**SQL command to add a primary key column:** Alter table employee add empid int primary key; **Importance of Primary key in a table:** Primary key column is used to uniquely identify each record of the table. A column defined as primary key cannot have a duplicate entry and can't be left blank. ***(1 mark for correct SQL command to add a primary key column)*** ***(1 mark for correct importance of Primary key in a table)***	
	(c)	Consider the following table: <u>Student</u> (table below) Write commands in SQL for (i) to (iv):	4

Admn	Name	Stream	Optional	Average
1001	Shrishti	Science	CS	90
1002	Ashi	Humanities	Maths	80
1003	Aditya	Commerce	IP	60
1004	Ritu Raj	Science	IP	65
1005	Sonali	Commerce	Maths	60
1006	Saumya	Science	IP	65
1007	Ashutosh	Science	IP	95
1008	Prashant	Commerce	P.ED	80
1009	Aman	Commerce	IP	70
1010	Rishabh	Humanities	P.ED	85

i. To display the details of all those students who have IP as their optional subject.
ii. To display name, stream and optional of all those students whose name starts with 'A'.
iii. To give an increase of 3 in the average of all those students of humanities section who have Maths as their optional subject.
iv. To display a name list of all those students who have average more than 75.

Ans:

i. select * from student where optional='IP';
ii. select name, stream, optional from student where name like 'A%';
iii. update student set average=average+3 where stream='Humanities' and optional='Maths';
iv. select name from student where average>75;

(1 Mark each correct command)

(d) On the basis of the Table Student, write the output(s) produced by executing the following queries: 2

i. Select max(average), min(average) from students group by stream having stream like 'Science';
ii. Select name from students where optional IN ('CS','IP');

Ans :

i.

Max(Average)	Min(Average)
95	65

ii.

Name
Shrishti
Aditya
Ritu Raj
Saumya
Ashutosh
Aman

(1 Mark for each correct output)

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

Table: Registration

Field name	Datatype	Size	Constraint
Reg_Id	Integer	2	Primary Key
Name	Varchar	20	
Course	Varchar	10	
Join_Dt	Date		

Ans:

```
Create table Registration
(
Reg_Id Integer(2) Primary Key,
Name varchar(20),
```

Course varchar(10),
Join_Dt date
);

(½ Mark for create table statement)
(1 Mark for all the fieldnames with datatypes)
(½ Mark for correct placement of Primary key constraint)

(b) Consider the tables given below while attempting the following questions:

Train

TrainId	TName	Source	Destination
3402	Century Express	New Delhi	Mumbai
4023	Superfast Express	Kanyakumari	Chandigarh
3424	Lucknow Mail	Lucknow	New Delhi
6542	Capital Express	Chennai	Kolkata
9876	Punjab Mail	Patna	Ludhiana
5400	Century Express	New Delhi	Kanpur

Reservation

RefNo	TrainId	Passenger	JourneyDate
S001	4023	Shubham Singh	2017-07-02
C001	6542	Jishan Mittal	2017-06-25
S002	4023	Jessica Raj	2017-07-02
P001	9876	Paramjeet Singh	2017-07-22
S003	4023	Gurjyot Singh	2017-07-03
C002	6542	Akash Mukharjee	2017-06-25
P002	9876	Meera Devi	2017-07-22
L001	3424	Ruby Lal	2017-06-29
C003	5400	Tapshree	2017-07-04

(i) Identify the primary key column of Train and Reservation. 1

Ans: Train-TrainId
Reservation-RefNo

(½ Mark for each correct answer)

(ii) Help Mr. Sajal in identifying the wrong statement with reference to UNION clause: 1

a. Each SELECT statement within UNION must have the same number of columns
b. The columns must also have similar data types
c. The columns in each SELECT statement must also be in the same order
d. By default, the UNION operator selects all the values.

Ans: d

(1 Mark for correct answer)

(c) 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 Train name along with its passenger name.
ii. To display Train detail which has no reservation yet.
iii. SELECT T.* from Train T, Reservation R where T.TrainId=R.TrainId AND Source LIKE "%Delhi" OR Destination LIKE "%Delhi";

Ans:

i. select TName, Passenger from Train T, Reservation R where T.TrainId=R.TrainId;

(½ Mark for correct usage of Select)
(½ Mark for correct From statement)
(1 Mark for the correct condition)

ii. i. select T.* from Train T, Reservation R where T.TrainId!=R.TrainId;

(½ Mark for correct usage of Select)
(½ Mark for correct From statement)
(1 Mark for the correct condition)

iii.

TrainId	TName	Source	Destination
3424	Lucknow Mail	Lucknow	New Delhi
5400	Century Express	New Delhi	Kanpur

(1 Mark for each row)

7 (a) Write down any two benefits of net banking. 1

Ans:
i. Banking can be done anytime i.e. 24x7.
ii. Its fast and hassle free.
(½ Mark each for correct benefit)

(b) Mr. Sanjay, a banking professional want to enroll himself in an e-Learning course. Mention him any two challenges of e-Learning. 2

Ans:
i. The lack of learner's motivation.
ii. The busy schedule of the learners.

(1 Mark for each correct challenges with e-Learning)

(c) Ms. Juhi, works as an IT Executive in a health insurance company named 'Total Health'. She has been assigned a task to design a customer registration page. 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 considering the following points: 2

- Customer can enter his/her name in the control.
- Customer can choose only one city out of given list of city.
- Customer can choose only one type out of given policy types.
- Customer can choose any number of INCLUSIONS out of given inclusions.

S. No.	Control used to	Control

		1	CUSTOMER'S NAME			
		2	CUSTOMER'S CITY			
		3	POLICY TYPE (Individual/Family)			
		4	INCLUSIONS (Critical Illness/Accidental Coverage/Health Checkup/Others)			
	Ans					

S. No.	Control used to	Control
1	CUSTOMER'S NAME	TextField
2	CUSTOMER'S CITY	ComboBox
3	POLICY TYPE (Individual/Family)	RadioButton
4	INCLUSIONS (Critical Illness/Accidental Coverage/Health Checkup/Others)	CheckBox/ListBox

(1/2 mark for each correct answer)