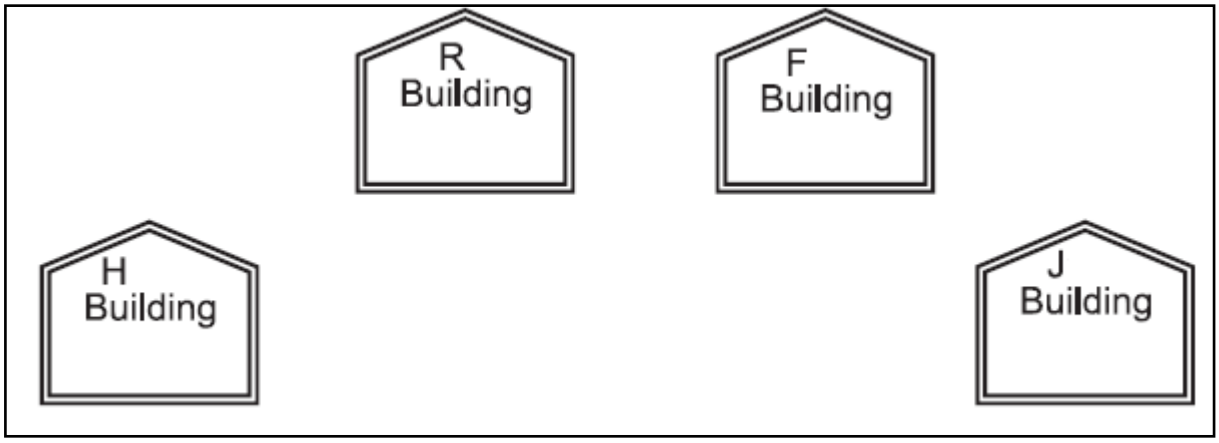
Informatics Practices
Half Yearly Examination
Class : 12
Max Marks: 70 Time : 3 Hrs.

1	(a)	Which communication channel(s) is/are suitable in each of the following situations: a. Transfer of data from one mobile phone to another. b. Very fast communication between two offices in two different countries.	1
	(b)	Compare IP address, MAC address, URL	1
	(c)	Distinguish between hub and Switch	1
	(d)	Name two kinds of attacks can be made on data and computers?	1
	(e)	Distinguish between Open Source software and Proprietory software with reference to customizability of the software.	2
	(f)	Ahlux Industries has set up its new center at Pune for its office and web based activities. The company compound has 4 buildings as shown in the diagram below:  **Center to center distances between various buildings is as follows:** H Building to R Building — 50 m R Building to F Building — 60 m F Building to J Building — 25m J Building to H Building — 170m H Building to F Building — 125 m R Building to J Building — 90 m **Number of Computers in each of the buildings is follows:** Harsh Building — 15	2

		<table><tr><td>Raj Building</td><td>150</td></tr><tr><td>Fazz Building</td><td>15</td></tr><tr><td>Jazz Bulding</td><td>25</td></tr></table> 1) Suggest a cable layout of connections between the buildings. 2) Suggest the placement of the following devices with justification: (i) Repeater (ii) Hub/Switch	
	(g)	Distinguish between Star and Bus Topology with diagrams of each.	2
2	(a)	Write the purpose of Comments in a Java code. Are they read by the compiler?	1
	(b)	How is a loop different from Selection control structure?	1
	(c)	Distinguish between do…while and while loops.	1
	(d)	What is the purpose of Comments in a program?	1

	(c)	Write equivalent If statement for the following code:
		
		`String str = jTextField1.getText();`
		`Number = Integer.parseInt(str);`
		`Switch (Number)`
		`{`
		`case 10:jTextField1.setText("Ten Thousand");break;`
		`case 20:jTextField1.setText ("Twenty Thousand"); break;`
		
		`default:jTextField1.setText ("Not enough!!!");`
			2

	(d)	What will be the values of r and p after execution of the following code:
		`int p, r=8;`
		`for (p = 4; p<=8; ++p)`
		`r = p - 2;`
			2

3	(a)	Which command is used in MySql to insert a marker in a transaction so that we can rollback changes till the marker?	1
	(b)	Write SQL statement to insert a primary key on Rollnum column in alreay created table named "Stu".	1
	(c)	Distinguish between Commit and Rollback	2
	(c)	What is the purpose of following SQL query. Explain with example **`Select count(salary) from Emp group by department;`**	2
	(d)	Table Employee has columns- Empcode,empname,department code. Table Department has departmentcode, departmentname,number_of_employees. Identify the Primary keys in both the tables and foreign key in department table. State reasons for your identification.	2
	(e)	A table 'Employee' in a database has 5 columns and no rows in it. What is its degree and cardinality. What will be its degree and cardinality if 6 rows are added in the table?	2
	(f)	`Write the output of following SQL queries.` `i. SELECT ROUND(6.88,2) ;`	2

		ii. SELECT MID('Discovery Channel',4,6) ; iii. SELECT DAYOFMONTH ('2011-03-30'); iv. SELECT TRUNCATE (7.727,1);	

4	(a)	The code given below will give an error on execution if the value entered in t2 is 0. Identify the type of the error and modify the code to handle such an error.
		
		`int a,b,c;`
		`a= t1.getText();`
		`b= Integer.parseInt(t2.getText());`
		`c= a / b;`
			1

	(b)	What should be done so that only 1 option button is chosen out of option buttons on the form?	1

	(c)	How many times will the following loop get executed?
		`m = 2;`
		`n = 15;`
		`while ( m <= n)`
		`{`
		`x+=10;`
		`}`
			2

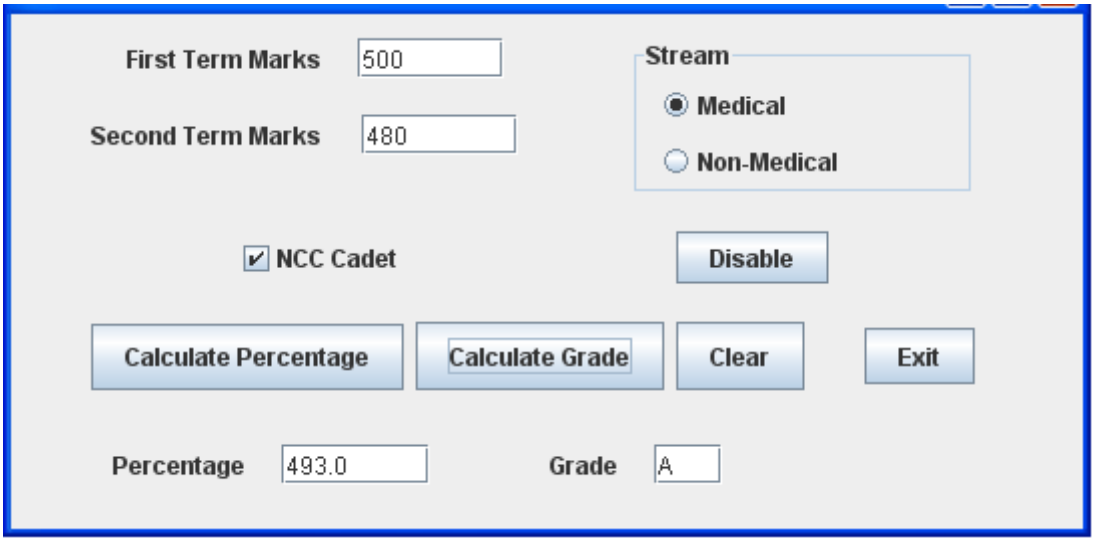
	(d)	Rewrite the following program code using a for loop: **`int i = 5;`** **`while (i>3)`** **`{`** **`i = i-1;`** **`}`**	2

	(e)	The following code has some error(s). Rewrite the correct code underlining all the corrections made:
		
		double p = jTextField1.getText();
		double r;
		double t = (jTextField3.getText());
		if (jCheckBox1.Selected())
		r = 0.10*p;
		else;
		r = 0.07*p;
		jTextField2.display(" "+r);
			2

	(f)	Find the output of the following code:
		
		`int Number1 = 7,Number2=8;`
		`int Second = 73;`
		`if (Number1>0 || Number2>5)`
		`if (Number1>7)`
		`jTextField1.setText("Code Worked");`
		`else`
		`jTextField1.setText("Code MightWork");`
		`else`
			2

```
jTextField1.setText("Code will not Work");
```

(g)



Write code for Clear button to clear all text boxes and set the radiobutton on for Medical Stream. 1

Write code for Calculate Percentage button. It should calculate the percentage(assuming max marks is 100 for both first and second terms). 2
If the student is an NCC student, percentage is increased by 3

Write code for Calculate Grade button.Criterion is as folllows 2

For Medical Students:

Percentage	**Grade**
Atleast 80	A
70- less than 80	B
Below 70	C

For Non Medical stream:

Percentage	**Grade**
Atleast 75	A
60- less than 75	B
Below 60	C

5 (a) What is the purpose of DROP TABLE command in SQL? How is it different from DELETE command? 2

(b) "PrincipalName" is a column in a table "Schools". The SQL queries 2

```
SELECT count(*) FROM Schools;
```

and

```
SELECT count(Principal) FROM schools;
```

Give the result 28 and 27 respectively. What may be the possible reason for this? How many records are present in the table – 27 or 28?

(c) Consider the table Projects given below. Write commands in SQL for i) to iv) and output for v) to viii)

PROJECTS

ID	ProjName	ProjSize	StartDate	EndDate	Cost
1	Payroll-MMS	Medium	2006-03-17	2006-09-16	60000
2	Payroll-ITC	Large	2008-02-12	2008-01-11	500000
3	IDMgmt-LITL	Large	2008-06-13	2009-05-21	300000
4	Recruit-LITL	Medium	2008-03-18	2008-06-01	50000
5	IDMgmt-MTC	Small	2007-01-15	2007-01-29	20000
6	Recruit-ITC	Medium	2007-03-01	2007-06-28	50000

i. To display all information about projects of Medium ProjSize. 1
ii. To list the ProjSize of projects whose ProjName ends with LITL. 1
iii. To list ID, name, size and Cost of all the projects in descending order of StartDate. 1
iv. To count the number of projects of cost less than 100000. 1

v. SELECT sum(Cost) FROM projects; 2
vi. SELECT DISTINCT ProjSize FROM projects;
vii. SELECT ID FROM Projects WHERE StartDate > EndDate;
viii. SELECT ProjSize, COUNT(*) FROM Projects group by ProjSize;

6 (a) Write an SQL query to create a table 'TEAMS' with the following structure: 2

Field	Type	Constraint
TeamCode	Varchar(5)	Primary Key
TeamName	Varchar(20)	
TeamLeader	Varchar(20)	
NoOfMembers	Integer	
Isolated	Char(1)	Not Null

(b) In a database there are two tables 'Employee' and 'Department' as shown below: 2

Employe

CompID	CompName	CompHO	DepCode
1	Titan	Okhla	101
2	Maxima	Shahdara	107
3	Ajanta	Najafgarh	101

Department

Depcode	DepName
101	HRD
102	Accounts
103	Computers

(i) Identify the foreign key column in the table Model.
(ii) Look at the data of both the tables-Do you find any discrepancy?

<table>
<tr><td></td><td>(c)</td><td>Consider the tables ITEM and Salesman given below:
<u>Item</u>
<table><tr><th>ItemCode</th><th>ItemName</th><th>Qty_Sold</th><th>Salesman_code</th></tr><tr><td>101</td><td>Guage123</td><td>100</td><td>2</td></tr><tr><td>102</td><td>Vern34</td><td>234</td><td>3</td></tr><tr><td>103</td><td>Calliper</td><td>456</td><td>3</td></tr><tr><td>104</td><td>Clew</td><td>121</td><td>2</td></tr></table>
<u>Salesman</u>
<table><tr><th>Salesman_code</th><th>Name</th></tr><tr><td>1</td><td>Neeraj</td></tr><tr><td>2</td><td>Mohit</td></tr><tr><td>3</td><td>Ragini</td></tr><tr><td>4</td><td>Mohit</td></tr><tr><td>5</td><td>Nandini</td></tr></table>With reference to these tables, write commands in SQL
(i)Display the ItemCode, ItemName and Salesman name of sales people who sold them.
(ii)Display the details of items which are sold more than 200.
(iii) Display the cardinality of join of the two tables.</td><td>2
2
2</td></tr>
<tr><td>7</td><td>(a)</td><td>How is e-governance beneficial to a country. Write two points</td><td>1</td></tr>
<tr><td></td><td>(b)</td><td>How is e-business useful to customers.Write 2 points</td><td>2</td></tr>
<tr><td></td><td>(c)</td><td>Seema has designed an interface for astrology software. She wishes to create controls on a form for the following functions. Choose appropriate controls from Text box, Label, radio button, Check box, List box, Combo box, Command button and write in the third column.
<table><tr><th>SNo</th><th>Control used to:</th><th>Control</th></tr><tr><td>1</td><td>Enter Name</td><td></td></tr><tr><td>2</td><td>Select place of birth(country)</td><td></td></tr><tr><td>3</td><td>Select gender</td><td></td></tr><tr><td>4</td><td>Clear the Form</td><td></td></tr></table></td><td>2</td></tr>
</table>