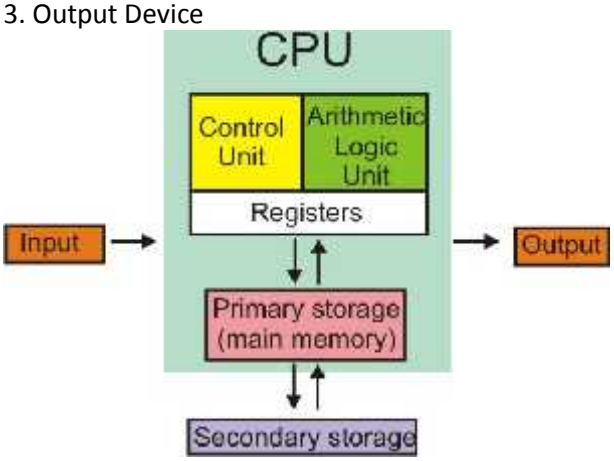
Sample Paper
Informatics Practices (Theory)
Set - 01
Class – XI

Time Allowed: 3 Hours *Maximum Marks: 70*

Instructions:

(i) ***All*** *questions are compulsory.*

(ii) Programming Language : Java, SQL

1. a)	**Which of the following is not hardware :** **(i) Hard disk (ii) Printer (iii) Keyboard (iv) CPU (v) JVM**	1
Ans.	JVM	
b)	**Define the terms : (i) nibble (ii) gigabyte**	1
Ans.	i. Nibble – In computer terms a nibble = 4 bits = 1/2 byte. ii. Gigabyte – 1GB = 1billion bytes. 2 to the 30th power (1,073,741,824) bytes. One gigabyte is equal to 1,024 megabytes. Gigabyte is often abbreviated as G or GB.	
c)	**What are the major strengths and weaknesses of computer?**	1
Ans.	Strengths – Speed, accuracy, reliability, and versatility. Weakness – Lack in decision-making, zero IQ.	
d)	**Name the various components of a computer. Draw a diagram.**	2
Ans.	Every computer system basically have three most vital parts: 1. Input Device 2. Central Processing Unit (CPU) and 3. Output Device 	
e)	**What are the software classifications? Discuss their functioning in brief.**	2
Ans.	System software helps run the computer hardware and computer system. It includes operating systems, device drivers, diagnostic tools, utilities and more. Language Processor software usually provides tools to assist a programmer in writing computer programs and software using different programming languages in a more convenient way. Application software allows end users to accomplish one or more specific (non-computer related) tasks. Typical applications include industrial automation, business software, educational software, medical software,	
f)	**Why is Disk Defragmenter used?**	1
Ans.	Disk Defragmenter speeds up disk access by rearranging the files and free space on your computer; so that files are stored in contiguous units and free space is consolidated in one contiguous block.	
g)	**What is a port? Explain some port types briefly.**	
Ans.	Ports are used to connect external devices to the computer. Several types of ports are there, example of some Network Ports – It is an address (16-bit address) within a computer, usually associated with a particular application protocol.	2

	Serial Ports –They transfer data serially a bit at a time Needs only wire to transmit 8 bits, it is also known as COM port. Parallel Ports – A byte (8-bit) is transferred at a time in parallel port, 8-bits are transmitted parallel to each other. Parallel port are very commonly used for printer, scanner, CD writer and many other external devices.	
h)	**What are cookies?**	1
Ans.	A cookie, also known as a web cookie, browser cookie, and HTTP cookie, is a piece of text stored on a user's computer by their web browser in form of text file.	
i)	**Explain the term Integrated Development Environment with its tools.**	2
Ans.	IDE (Integrated Development Environment) is an application program consisting of different development tools needed for developing an application. An generally IDE consists the following tools – i) Source Code Editor ii) Compiler iii) Debugger iv) Code v) help document	
j)	**Explain the terms : (i) Adware (ii) Spyware**	2
Ans.	Adware are the programs which delivers ads to your computer (generally in POP-UP's form). They consume your network. Spyware are the programs which are used to monitor/Log the activity performed on a computer. These are used to spy on someone either for legal or illegal purpose. Example: Keylogger applications.	
k)	**What is the difference between a threat and an attack? Name some common threats to computer security.**	1
Ans.	Threat is a potential violation of security whereas when a threat is actually executed, it becomes attack. Those who execute such actions, or cause them to be executed are called attackers. Some common threats are: Viruses, Spyware, Adware, Spamming	
2. a)	Differentiate between a Text Field and Text Area	1

Ans.

Text Field	Text Area
Text Field is a one-line text box	Text Area can be set to span multiple lines of input.
Text field doesn't have scrollbar capability	Due to multi lines text area automatically handle scrollbar
Text field doesn't need line wrapping capabilty	Text Area also have the ability of line wrapping

b) **Which operators are supported by Java?** 1

Ans. Java provides a rich set of operators for various types of operations. We can divide all the Java operators into the following groups:

1. Arithmetic Operators: + , – , * , / , %
2. Relational Operators: ==, >, >=, <, <=, !=
3. Logical Operators: && , || , !
4. Bitwise Operators: & , | , << , >>
5. Assignment Operators: = , += , -= , *= , /=
6. Conditional Operators: ? :
7. Increment Operator: ++
8. Decrement Operator: – –

c) **What is the difference between if and switch statements?** 1

Ans.

switch statement	**if-else statement**
The switch statement can only test for equality	if-else can evaluate for Relational or Logical conditions
switch cannot handle ranges	if-else is more versatile i.e. it can handle ranges
Switch cannot handle floating point tests	if-else can handle floating point, integer and character tests whereas
In Switch blocks, unless you have break statements inside each condition block, the subsequent blocks would not be ignored.	In the if else blocks, if one condition is satisfied, all other blocks are ignored

d)	**Write a program to check whether the given number is even or odd using *conditional operator***	2

Ans.	`int i=Integer.parseInt(jTextField1.getText());`
	`String str=i%2==0?"EVEN":"ODD";`
	`System.out.print(str);`	

e)	**How one can make a Text Field un-editable on a Frame?**	1
Ans.	Enabled(false);	

3. a)	**The following code has error(s). Rewrite the correct code underlining all the corrections made. What will be the output after correction.**
	`int Sum = 0 , Step = 5;`
	`int I ;`
	`for (i=0;i<=5,i++);`
	`{`
	`  Step += 5 ,`
	`  Sum += Step ;`
	`}`
	`jTextArea1. showText ( "  " + Sum )`
		3

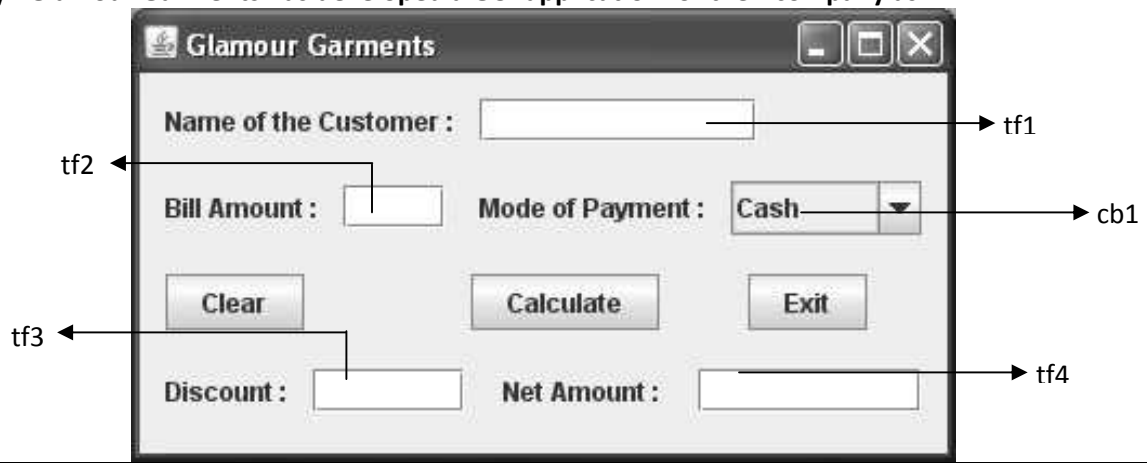
Ans.	`int Sum = 0 , Step = 5;`
	`int i;`
	`for (i=0;i<=5;i++);`
	`{`
	`  Step += 5;`
	`  Sum += Step;`
	`}`
	`jTextArea1. setText ( "  " + Sum );`
	
	`output: 135`	

b)	**Rewrite the following program code using a switch statement:**
	`if (code == 1)`
	`  Month = "January" ;`
	`else if( code == 4 )`
	`  Month = "April" ;`
	`else if( code == 8 )`
	`  Month = "August" ;`
	`else`
	`  Month =  "No Match" ;`
		2

Ans.	`switch(code)`
	`{`
	`  case 1: Month=”January”;`
	`  break;`
	`  case 4: Month=”April”;`
	`  break;`
	`  case 8: Month=”August”;`
	`  break;`
	`  default: Month=”No Match”;`
	`}`	

c)	**Rewrite the following code using do-while loop:**
	`for (int i=0;i<10;i++ )`
	`  jTextArea1.append ( 2 + " x " + i + " = " + ( 2 * i ) ) ;`
		2

Ans.	do{
	jTextArea1.append (2 + " x " + i + " = " + (2 * i)) ;
	i++;
	}while(i<10);	

d)	**What are these methods used for?** (i) isEditable ( ) (ii) getItemCount ( ) (iii) getEchoChar ( ) (iv) append ( )	4
Ans.	i) isEditable – This method is of jComboBox, which returns true/false depending up on whether th combo box's text filed is editable or not. ii) getItemCount – This method returns the total numbers of items in a combo box. iii) getEchoChar(char) –getEchoChar method takes a character parameter which is displayed in password field instead of the actual characters typed by the user. iv) append(string) – Adds the specified text given within parenthesis of text area to the end of the text area.	
e)	**What will be displayed in jTextArea1 after executing the following statements?** jTextArea1.setText ("APS\t RKPuram \n HalfYearly\t 2011") ;	1
Ans.	APS RKPuram HalfYearly 2011	
f)	**Write the name of the method which is used to enter value using dialog of JOptionPane control.**	1
Ans.	showInputDialog()	
g)	**Case Study : Glamour Garments has developed a GUI application for their company as :**  	
i.	**Write the code for Clear button to clear all the text fields and the check box.**	1

Ans.	tf1.setText("");
	tf2.setText("");
	tf3.setText("");
	tf4.setText("");	

ii.	**Write the code for Exit button the application should be closed while displaying a message "Happy Shopping" in a dialog box.**	2
Ans.	JOptionPane.showMessageDialog(null, "Happy Shopping"); System.exit(0);	

iii. **Write the code for Calculate button to :**

(i) To ensure that the Bill Amount entered by the user is a positive number, if it is negative prompt a message to the user asking to reenter the valid Bill Amount — 2

(ii) Calculate the discount on bill amount and display it in the respective jtextfield, As per the given criteria : — 2

Mode of Payment	discount
Cash	8 %
Cheque	7 %
Credit Card	Nil

(iii) Calculate net amount as: Net Amount = Bill Amount – Discount and display it in the respective jtextField. — 1

Ans. i)

```
Calculate Button code -
int discount=0;
int b_amt=Integer.parseInt(tf2.getText());
if(b_amt<0)
{
   JOptionPane.showMessageDialog(null, "Bill Amount cannot be negative");
}
else
{
```

ii)

```
   String mode=jComboBox1.getSelectedItem();
   switch(mode)
   {
       case "Cash": discount=b_amt*8/100;
                    tf3.setText(discount+"");
                    break;
       case "Cheque": discount=b_amt*7/100;
                      tf3.setText(discount+"");
                      break;
       case "Credit Card": tf3.setText("NIL");
                           break;
   }
}
int net_amt=b_amt-discount;
tf4.setText(net_amt+"");
```

4. a) **Explain the following terms with example:** — 5

(i) Primary Key
(ii) DDL
(iii) Where Clause
(iv) The Like Clause
(v) Truncate Command

Ans.

Primary Key – It is a column (or columns) in a table that uniquely identifies each row. A primary key value is unique and cannot be null. There is only one primary key for a table.

DDL – A database scheme is specified by a set of definitions which are expressed by a special language called data definition language (DDL).

Where – We use where clause with Select command to specify the condition / criteria for retrieving the selective rows from the table.

Like – The LIKE clause is used to select the rows containing columns that match a wild card pattern.

Truncate – Truncate command is used to delete all the rows from table at once but table is structure is not delete.

b) **Write the output of the following SQL queries:** — 1

(i) SELECT Concat(Left("Mr. Amit Kumar",3),Concat(Concat(Mid("Mr. Amit Kumar",5,1)," "),Right("Mr. Amit Kumar",5)));

	(ii) SELECT DAYOFWEEK("2012-12-31"); (iii) SELECT ROUND(6.25 ,-1); (iv) SELECT Char(67,66,83,69,67,83,78,73,80);	1 1 1
Ans.	i) Mr.A Kumar ii) 2 iii) 10 iv) CBSECSNIP	
c)	**Create the table-Customer as per following structure:** Column Name — Data Type/Size — Constraints Cust_Id — integer — Primary Key C_Date — date Cust_Name — char(20) — Not Null Cust_Address — varchar(30) Amount — decimal(7,2) — check Amount>500 Cust_Phone — integer(10) — unique	2

Ans.	`CREATE TABLE Customer(`
	`  Cust_Id INTEGER PRIMARY KEY,`
	`  C_Date DATE,`
	`  Cust_Name CHAR(20) NOT NULL,`
	`  Cust_Address VARCHAR(30),`
	`  Amount DECIMAL(7,2) CHECK(Amount>500),`
	`  Cust_Phone INTEGER(10) UNIQUE`
	`);`	

d)	**Write the SQL commands for the (i) to (iv) and write the output of the (v) and (vi) on the basis of table STUDENT given below:**	

STUDENT

No	Name	Stream	Marks	Grade	Class	DOB
1	Kamlesh	Computer	78.0	B	12B	1984-04-12
2	Praveen	Commerce	88.2	A	11C	1987-05-02
3	Manoj	Commerce	67.6	C	12C	1990-02-09
4	Laxmi	Computer	77.1	B	12C	1990-12-07
5	Suja	Biology	78.6	B	11A	1987-12-02
6	Basima	Commerce	89.4	A	12B	1984-05-12
7	Soju	Biology	88.4	A	11A	1985-09-05
8	Deepa	Computer	75.5	A	12A	1990-02-15
9	Shushil	Biology	92.4	A	12A	1984-04-13
10	Baba	Commerce	92.5	A	12C	1984-03-13
11	Vinit	Computer	56.0	C	11B	1984-09-22

(i) To display the details of Commerce stream students in class 12 and got marks more than 90. — 1
(ii) To display name marks & grades. Arrange the grade in ascending alphabetically order and arrange the mark in way that it displays marks from highest to lowest in particular Grade. — 1
(iii) To display the names of stream in upper case don't repeat the same stream. — 1
(iv) To display all students record except Shushil. — 1
(v) SELECT NAME,LEFT(CLASS,2) FROM STUDENT WHERE STREAM = 'Biology'; — 1
(vi) SELECT NAME,STREAM,MARKS FROM STUDENT WHERE STREAM = 'Computer' AND GRADE IN ("A","B"); — 1

Ans.

i) SELECT * FROM STUDENT WHERE STREAM = 'Commerce' AND Class IN ("12A","12B","12C") AND Marks>90;
ii) SELECT Name, Marks, Grade from student ORDER BY GRADE,Marks DESC;
iii) SELECT DISTINCT(UPPER(Stream)) from student;
iv) SELECT * from student where name<>'Shushil';
v)

NAME	LEFT(CLASS,2)
Suja	11
Soju	11
Shushil	12

vi)

NAME	STREAM	MARKS
Kamlesh	Computer	78.00
Laxmi	Computer	77.10
Deepa	Computer	75.50

5. a) **What do you mean by e-Learning? What are the limitations of E-learning?** 2

Ans.

e-Learning is a flexible term used to describe a means of teaching through technology such as a network, browser, CDROM, or DVD multimedia platforms.
Larger up-front investment – Due to development costs, up-front investment is large
Reduced social and cultural interaction – Elimination of peer-to-peer learning, the impersonality, suppression of communication mechanisms like body language.
Inappropriate content – Inappropriate content for e-learning may exist.
Technology issues – Whether compatibility of all software and hardware can be achieved which can lead to unavailability of required technologies.

b) **What is difference between traditional business system and e-business?** 2

Ans.

Traditional Business	e-Business
• It is very difficult to form traditional business as it involves many formalities. • In traditional business the location should be in proximity to the source of raw materials or the market for products. • Operating cost is high in traditional business due to fixed charges associated with the investment in procurement and storage, production, marketing and distribution facilities. • In traditional business contact is through the intermediaries and there is no direct contact with customers. • In traditional business it will take long time to get a response from the customer. • Traditional business structure is vertical/tall due to hierarchy of chain of command. • Traditional business has fewer opportunities to have international touch.	• On the other hand it is easy to form an e-business as compared to traditional business. • Whereas there is no such specific location is required for e-business. • But on the other hand operating cost is low as a result of reliance on network of relationship rather than ownership of resources. • But in e-business there is a direct relation with customers. • But the business man gets instant response in e-business. • But structure of e-business is horizontal/flat due to directness of command and communication. • But at the same time e-business have much more opportunities to go international.