ASSIGNMENT FOR AUTUMN BREAK

CLASS XI – INFORMATICS PRACTICES (2017-18)

HARDWARE CONCEPTS

Q1. Write at least two points of difference between the following terms:

(i) Analog Computer and Digital Computer
(ii) Data and Information
(iii) Compiler and Interpreter
(iv) Input Devices and Output Devices
(v) RAM and ROM
(vi) CD and DVD
(vii) Serial Port and Parallel Port
(viii) Hardware and Software
(ix) Impact Printer and Non-Impact Printer

Q2. Explain any two strengths and two weakness of computer?

Q3. Name the supercomputers developed in India.

Q4. Write two points of similarities between Compiler and Interpreter.

Q5. Name any two wireless ports.

Q6. A school newsletter contains text and images in it. The head teacher needs one thousand copies of this newsletter. Give two reasons why a laser printer should be used rather than inkjet or dot matrix printer.

Q7. Expand the following terms:

(i) MICR **(ii)** OCR **(iii)** OMR **(iv)** LCD **(v)** TFT **(vi)** OLED **(vii)** DVD-RW

Q8. Explain the following terms:

(i) Peripherals
(ii) Language Processor
(iii) Firmware
(iv) Cache Memory
(v) Communication Bus
(vi) Nibbles

Q9. Calculate :

(i) 248 Nibbles = ? bits
(ii) 256 bits = ? bytes
(iii) 2 MB = ? bits
(iv) 1 TB = ? bytes

Q10. Several items of data are input to a computer using direct data entry methods. Write down the most appropriate input device to input each item of data given below :

(a) data written in special ink at the bottom of bank cheques.
(b) information or the label of a supermarket product.
(c) shaded in boxes on a student's exam-answer sheet.
(d) debit card details input at an ATM.

Q11. Name the subunits that make up the CPU, and give the function of each of the units.

Q12. What do you mean by E-waste. Explain any two methods of e-waste disposal.

Q13. Out of the following devices, write whether they are input devices, output devices or storage devices. Also write their functions:

(i) Light Pen
(ii) Flatbed Plotter
(iii) Dot Matrix Printer
(iv) DVD
(v) OMR
(vi) Microphone
(vii) Webcam
(viii) Speaker
(ix) Magnetic Disk
(x) MICR

Q14. Why computer needs secondary storage devices, when it is already having Main Memory? Give two reasons.

SOFTWARE CONCEPTS

Q1. What is Operating System? Briefly explain any three types of Operating System.

Q2. Name any two popular operating systems.

Q3. Give two examples for each of the following type of packages:

(i) Word Processing Software **(ii)** Spreadsheets **(iii)** Database Management Systems

Q4. What is the significance of a firewall in a computer's security scheme?

Q5. What are application softwares? What are four categories of application softwares?

Q6. What is System Software? What are two categories of system software ?

Q7. Define the following terms :

(i) Cookies
(ii) Virus
(iii) Worms
(iv) Trojan Horse
(v) Phishing
(vi) Utilities

Q8. What do you understand by computer security? What are the possible solutions to ensure computer security?

Q9. Expand the following terms**: (i)** HLL **(ii)** IDE **(iii)** DBMS **(iv)** DTP

Q10. Why is disk defragmenter useful ?

STARTING WITH GUI PROGRAMMING

Q1. Expand the following terms:

(i) WORA
(ii) IDE
(iii) JVM
(iv) RAD
(v) GUI

Q2. How is ordinary compilation process different from Java compilation?

Q3. Explain the following :

(i) Event **(ii)** Event Source **(iii)** Event Listener

Q4. What is then difference between the following terms :

(i) Container Control and Child Control
(ii) TextField and TextArea

Q5. What are the different characteristics of Java ?

Q6. What do you understand by JVM ? What is the role of JVMin platform independence ?

Q7. What is **W**rite **O**nce **R**un **A**nywhere(**WORA**) characteristic of Java .

PROGRAMMING FUNDAMENTALS & FLOW OF CONTROL

Q1. What is the effect of absence of break in a switch statement ?

Q2. The expression 19% 4 evaluates to _____.

Q3. What is the significance of break statement in a switch statement ?

Q4. Which of the following are valid identifiers and why/why not?

Data_rec , _data , my.file , break

Q5. Write one advantage and one disadvantage of using ? : in place of if.

Q6. What is the problem of dangling-else ? When does it arise ? What are the different solution available for this problem?

Q7. Write equivalent java expressions for the following expressions :

(i) $ut + ½ ft^2$
(ii) $\sqrt{a^2 + b^2}$
(iii) (iii) $2 - ye^y - 4y$
(iv) (iv) X^8

Q8. What output will the following code fragment produce ?

```
int val ,res, n=1000;
res= n+ val > 1750 ? 400 : 200 ;
System.out.println(“”+res);
```

(i) If val = 2000 (ii) If val = 500

Q9. Consider the following code snippet :

```
int i = 10;
int n = i++ % 5;
```

What are the values of i and n after the code is executed ?

Q10. What will be the value of following, if j=4 initially ?

(i) (5* ++ j) % 9 (ii) (5* j ++) % 4

Q11. What is implicit and explicit type conversion? Explain with the help of an example.

Q12. What will be the output of following code fragment if the value of ps is

(i) 1 (iii) 6

(ii) 4 (iv) 3

```
switch(ps)
 {
        case 1: System.out.println("It is Numeric 1");
                break;
        case 2: System.out.println("It is Numeric 2");
        case 3: System.out.println("It is Numeric 3");
                break;
        case 4: System.out.println("It is Numeric 4");
        default: System.out.println("Not 1234");
        }
```

Q13. What is fall through ?

Q14. Write a statement in Java to declare a String type variable with a name City.

Q15. What will be displayed in jTextArea1 after executing the following statement ?

```
jTextArea1.setText("Live\n In Peace\t and harmony ");
```

Q16. What will be displayed in jTextField1 and jTextField2 after the following code is executed:

```
int t ;
int x ;
x = 12 ;
t = (3*x++)/3;
jTextField1.setText(" "+t);
jTextField2.setText(" "+x);
```

Q17. Write the value of variable 'c' after execution of the following code :

```
int d ;
int c ;
d =7;
c = (3* ++d) % 3 ;
```

Q18. What message will be displayed after the execution of following code ?

```
int Age= 64, Relaxation = 4;
int ModiAge = Age – Relaxation ;
if(ModiAge < 60)
      jOptionPane.showMessageDialog(Null, "NOT Eligible");
else
      jOptionPane.showMessageDialog(Null, "Eligible");
```

Q19. Write the difference between the following :

(i) A=10

(ii) A == 10

Q20. Write Java code to assign the value 500 to variable x. Increase the value of x by 50 and store it in variable y.

CONVERSION QUESTIONS (switch to if else/if/if else if)

Q1. Rewrite the following fragment using switch:

```
if(ch == 'E')
    eastern++;
if(ch == 'W')
    western++;
if(ch =='N')
     northern++;
if(ch =='S')
     southern++;
else
     unknown++;
```

Q2. Rewrite the following program code using if else if statement

```
String remarks;
int num = Integer.parseInt(jTextField1.getText ( ));
switch (num)
{
        case 0 : remarks = "You have not won any points";
                 break;
        case 1 : remarks = "You have won one point";
                 break;
        case  2 : remarks ="You have won two points";
                 break;
        default : remarks ="All the best ";
    }
```

Q3. Rewrite the above code using only if statement.

Q4. Rewrite the following program code using a Switch statement:

```
if(code == 1)
   Month ="January";
else if(code == 2)
   Month = "February";
else if(code == 3)
   Month = "March";
else if(code == 4)
   Month = "April";
else
   Month = "No Match";
```

Q5. Rewrite the following program code using a if statement :

```
int c = jComboBox1.getSelectedIndex( ) ;
switch(c)
{
   case 0 : Amount = Bill ; break ;
   case 1: Amount = 0.9 * Bill ; break ;
   case 2 : Amount = 0.8 * Bill ; break ;
   default : Amount = Bill ;
  }
```

QUESTIONS BASED ON OUTPUT AND LOOP EXECUTION

Q1. How many times will the following **WHILE loop execute?**

```
int y=7 , sum=0;
while(y <= 25)
{
    sum=sum + y;
    y = y + 5;
  }
```

Q2. How many times the following **while loop executed ?**

```
int  p = 5;
int q = 20;
while(p <= q)
{
   p += 6;
   }
```

Q3. Write the output that will be generated by the code given below :

```
int  i ;
i = 7 ;
int r ;
r = 8 ;
    while(i <= 10)
    {
       System.out.println(r*i) ;
        i = i + 2 ;
     }
```

Q4. Write the value of sum1 and i after execution of the following WHILE loop:

```
int i = 1, sum1 = 0;
while (i<10)
{
   sum1 = sum1 + i;
   i = i + 2;
   }
```

Q5. How many times does the following loop execute ? What is its type (Entry-controlled or Exit –controlled)?

```
int x =2 , y = 20 ;
while (x <= y) {
        JOptionPane.showMessageDialog(null, " " + x);
        x = x + 3;
                        }
```

Q6. What will be the value of x and y after execution of the following code :

```
int x , y=0 ;
for (x=0 ; x<=5 ; ++x)
{        y = x++ ;
      -- y ;
 }
```

Q7. Find the output of the following code fragment?

(a)
```
int s = 14;
if( s < 20 )
   System.out.print("Under");
else  {
   System.out.print("over");
   System.out.println("the limit ");
      }
```

(b)
```
int s = 94;
if(s < 20) {
   System.out.print("Under");
    }
else  {
   System.out.print("Over");
   }
   System.out.println("the limit");
```

Q8. What will be the value of P and Q after execution of the following code :

```
int  P, Q=100 ;
for (P = 12 ; P <=16 ; P++ )
  {
       Q+= P ;
        }
System.out.println("P:"+ P + "Q:"+Q) ;
```

Q9. How many times are the following loops executed?

```
int num =5;
do
 {
     System.out.println(num+1);
      num -- ;
  } while (num!=0) ;
```

Q10. What will be the output of the following code:

```
int A = 15, B ;
for (B=2; B<=6; B+=2)
 {
       A= A + B;
    }
JOptionPane. showMessageDialog (null, "A:"+A+"B:"+B+"") ;
```

Q11. How many times the following loop will execute?

```
int i, j, n;
n =0 ; i =1 ;
do{
          n++;
          i++;
    } while(i <= 5);
```

Q12. How many times each of the following loops will execute? Which one of these is an entry control loop and which one is an exit control loop?

Loop 1	Loop 2

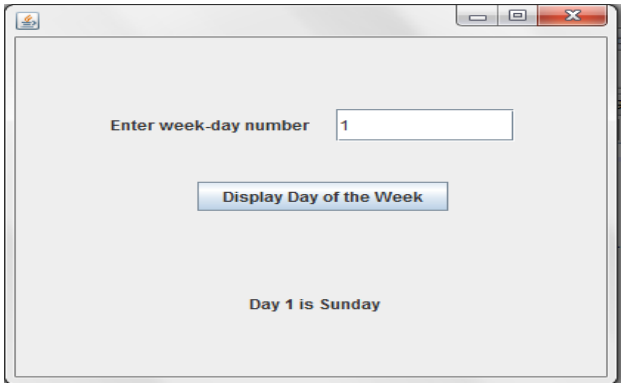
int sum = 0, i=5;
do
{
sum +=i ;
i++ ;
} while(i<5) ;
	int sum =0 , i=5 ;
	while (i<5)
	{
	sum +=i ;
	i++ ;
	}

Q13. Write the value that will be stored in variable sum after execution of following code :

```
int sum=0, m=4 ;
for(int i =9 ; i >= 6 ; i--)
{
    if(i%2 == 0)
        sum = sum + i ;
   else
        sum = sum – i ;
  }
```

GUI BASED QUESTIONS

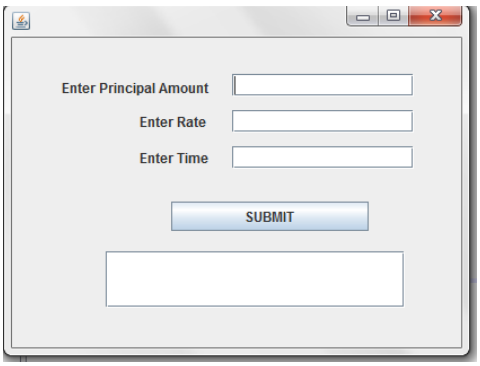
Q1. Write a Program for the GUI application having interface as shown below:



Upon clicking the push button, appropriate weekday should get displayed in the label.

Q2. Obtain principal amount, rate and time and then calculate simple interest as per the following GUI.

(Hint : SI = (PRINCIPAL * RATE * TIME)/100)



Q3. Write a Java code that takes two numbers as input from textfields and displays their sum .

Q4. Write a GUI application that accept an integer number and check its divisibility by 4 and print a message "divisible by 4 " or "not divisible by 4".

Q5. Write Java code that takes the cost of a pencil from jTextField1 and number of pencil from jTextField2 and Calculate total amount as cost * number to be displayed in jTextField3 and 20% service tax out of total amount in jTextField4.

Q6. Write Java code that takes value for a number (n) in jTextField1 and cube (n*n*n) of it to be displayed in jTextField2.

QUESTIONS BASED LOOP CONVERSION

Q1. Rewrite the following code using a while loop.

```
int Num = 1;
do {
    jTextArea1. setText(Integer.toString(++Num) +"\n");
    Num = Num + 1;
  }while(Num <= 10);
```

Q2. Rewrite the following code using while loop :

```
int i, j=15;
for(i=1; i<=6 ; i++)
        System.out.println(i++);
       System.out.println("Finished!!!");
```

Q3. Given the following code fragment :

```
i = 2;
do {
System.out.println(i) ;
i += 2;
 } while (i < 51) ;
      JOptionPane.showMessageDialog(null , "Thank You");
```

Rewrite the above code using a while loop.

Q4. Rewrite the code given in Q1. using for loop.

Q5. Rewrite following while loop into a for loop.

```
int stripes = 0;
while (stripes <= 13)  {
    if(stripes % 2 == 2)
     {
        System.out.println("colour code Red");
      }
     else {
        System.out.println("colour code Blue");
         }
     System.out.println("New Stripes");
        Stripes = stripes + 1;
      }
```

Q6. Rewrite the following code using a while loop.

```
int i = 0 , x = 0;
for(i=1 ; i < 10 ; I *= 2) {
    x++;
    jTextArea1.append(String.valueOf(x) + " ");
     }
```

QUESTIONS BASED ERROR CORRECTION

Q1. The following code has some error(s). Rewrite the code underlining all the corrections made :

```
int a  ;
int b = 15 ;
do  ;
    a = a + 3 ;
    b = b – 3 ;
    while  a <= b ;
```

Q2. The following program has some errors. Rewrite the correct code underlining each correction:

```
int p, sum==0;
{
 sum=+3;
 p=sum;
 } while (p=<12)
```

Q3. The following code has some error(s). Rewrite the correct code underlining all the corrections made.

```
 Int k = 2 ; sum =0;
{
    sum = k ;
    k += 3;
  } while(k =< 20)
jTextField1(Integer.toString(sum));
```

Q4. The following code has some error(s). Rewrite the correct code underlining all the corrections made.

```
int Sum = 0, Step = 5;
int I;
 for(i = 0 ; i =<5 ; i++)
 {
   Step += 5;
   Sum += Step;
   }
   jTextArea1.showText(" "+Sum);
```

Q5. The following code has some error(s). Rewrite the correct code underlining all the corrections made.

```
Int Total=0 , Jump = 5;
Int I;
for(i =0 ; I =<5 ; i++)
{
    Jump += 5;
    Total += Jump ;
  }
        jTextArea1.showText("" + Total);
```

Q6. Correct the errors with the following code fragment :

```
int s=0 , d , r=0 ;
n = text1.getText( );
while n!= 0 ;
 {
    d=n%10;
    r = r*10+d;
    n=/10 ;
    }
```

***** Make a separate Note book of 50 or 60 pages for writing the solutions of all above questions.***