

SESSION ENDING EXAMINATION

INFORMATICS PRACTICES

CLASS XI

Time allowed: 3 hours

Maximum Marks: 70

- Note:**
- (i) This question paper is divided into 3 sections
 - (ii) **Section A** consists of 30 Marks.
 - (iii) **Section B** consists of 20 marks.
 - (iv) **Section C** consists of 20 Marks.
 - (iv) Answer the questions after carefully reading the text.

SECTION-A

1. Answer the following questions :
 - a. Define each of the following:
(a) Nibble (b) Byte (c) Kilo Byte (d) Giga Byte 2
 - b. State the basic units of the computer. Name the subunits that make up the CPU, and give the function of each of the units. 2
 - c. Differentiate between the compiler and interpreter. 2.
 - d. What is a computer virus? How can it affect your computer? 2.
 - e. Expand the following terms : 2
a) PDAs b) MICR c) DVD d) TFT
2.
 - a. Which Graphical controls of JAVA can used to display multiple choices out of which more than one can be selected? 1
 - b. Suppose you want to scan your storage devices attached with your computer for virus infection . Suggest the type and name of the software. 1
 - c. What is Write Once Run Anywhere characteristics of Java? 2
 - d. How can you declare the variable in JAVA for the following:- 2
 - (i) If you want to store the employee no. of an employee.
 - (ii) If you want to store the name of an employee.
 - e. What is meant by E-learning. Suggest any two websites which can be used for E-learning. 2
 - f. What benefits (mention at least 2) does an e-business offer to an organization? 2
3.
 - a. Define the following terms in respect of Relational database management System: 2
 - (i) Primary Key.
 - (ii) Foreign Key.
 - b. Differentiate between DEFAULT and CHECK constraint of table with example. 2
 - c. What will be the output of following code? 2
 - (i) `SELECT LOWER(CONCAT('Informatics', 'Practices'));`
 - (ii) `SELECT INSTR('INFORMATICS PRACTICES','OR');`
 - d. Difference between DDL and DML commands of SQL with example. 2
 - e. Rahul wants to create a table STUDENT which can store Roll number, name, address and percentage in SQL. Write the 2

command to create the table STUDENT (Decide the type and size of column on your own).

SECTION-B

4. a. Give the value of x after executing following Java code. 2
- ```
int a=10;
int b=12;
int x=5; int y=6;
while (a<=b)
{ if (a%2==0)
 x=x+y;
 else
 x=x-y;
 a=a+1;
}
```
- b. Find the errors from the following code segment and rewrite the corrected code underlining the correction made. 2
- ```
int a ,b;
c = a + b;
for(;i<=5;i++)
{
    Display c;
    c=c+1
}
```
- c. Rewrite the following code using **do-while** loop. 2
- ```
For(int x=0;x<10;x++)
{
 System.out.println(x);
}
```
- d. Write a JAVA Program to print the following Pattern: 2+2
- |                                                  |                                                               |
|--------------------------------------------------|---------------------------------------------------------------|
| <p>(i)</p> <pre>6 55 444 3333 22222 111111</pre> | <p>(ii)</p> <pre>A AAA AAAAA AAAAAAA AAAAAAAA AAAAAAAAA</pre> |
|--------------------------------------------------|---------------------------------------------------------------|
5. a. Design an application that obtains three values in three text fields from user: Principal, Rate of Interest, Time. It should then compute and display Simple Interest when Calculate button is clicked. Controls names and Interface are given below 4
- 

| Control  | Purpose                    | Name          |
|----------|----------------------------|---------------|
| Text box | To accept Principal        | (jTextField1) |
|          | To accept Rate of Interest | (jTextField2) |
|          | To accept Time             | (jTextField3) |
|          | To display Simple Interest | (jTextField4) |

|                |                                                       |          |
|----------------|-------------------------------------------------------|----------|
| Command Button | To Click for computation & display of Simple Interest | jButton1 |
|----------------|-------------------------------------------------------|----------|

- b. Write a java code to calculate and print the factorial of an integer stored in variable **num**. 4
- c. Rajni Raghav works for a Computer Institute. He wishes to create controls on application form for the following functions. Choose appropriate controls from Text Box, Label, Option Button, Check Box, List Box, Combo Box, command Button and write in the third column : 2

| S.No. | Function / Purpose of Control       | Control |
|-------|-------------------------------------|---------|
| 1     | Enter Applicant Name                |         |
| 2     | Enter Gender                        |         |
| 3     | Enter Course from a List of choices |         |
| 4     | Submit Form                         |         |

#### SECTION-C

6. Answer the question based on the table given below:

**TABLE : Student**

| Column Name | Data Type | Siz | Constraint                |
|-------------|-----------|-----|---------------------------|
| Roll_No     | NUMBER    | e   | PRIMARY KEY               |
| Name        | VARCHAR   | 4   | Not Null                  |
| Stipend     | NUMBER    | 20  | Stipend is greater than 0 |
| Stream      | VARCHAR   | 7   | Not Null                  |
| Grade       | VARCHAR   | 15  |                           |

1

- (i) Write the SQL command to create the above table with constraints. 2
- (ii) Insert 2 records with relevant information, in the table student 1
- (iii) Display all the records of the table Student. 1
- (iv) Delete the Student Whose Roll no is 100. 1
- (v) Change the Stream of Student to 'Computer' Whose Roll no. is 536. 1
- (vi) Add one column email of data type VARCHAR and size 30 to the table Student. 1
- (vii) View structure of the table created by you. 1
- (viii) Drop the table Student. 1
- (ix) Make the all changes permanently. 1

7.

Answer the question based on the table given below:

**TABLE : HOSPITAL**

| No. | Name    | Age | Department       | DateFadm | Charges | Sex |
|-----|---------|-----|------------------|----------|---------|-----|
| 1   | Arpit   | 62  | Surgery          | 21/01/98 | 300     | M   |
| 2   | Zareena | 22  | ENT              | 12/12/97 | 250     | F   |
| 3   | Kareem  | 32  | Orthopedic       | 19/02/98 | 200     | M   |
| 4   | Arun    | 12  | Surgery          | 11/01/98 | 300     | M   |
| 5   | Zubin   | 30  | ENT              | 12/01/98 | 250     | M   |
| 6   | Ketaki  | 16  | ENT              | 24/02/98 | 250     | F   |
| 7   | Ankita  | 29  | Cardiology       | 20/02/98 | 800     | F   |
| 8   | Zareen  | 45  | Gynecology       | 22/02/98 | 300     | F   |
| 9   | Kush    | 19  | Cardiology       | 13/01/98 | 800     | M   |
| 10  | Shilpa  | 23  | Nuclear Medicine | 21/02/98 | 400     | F   |

(a) To list the names all the patients admitted after 15/01/98. 2

(b) To list the names of female patients who are in ENT department. 2

(c) To list names of all patients with their date of admission in ascending order. 2

(d) To display Patient's Name, Charges, Age for only female patients. 2

Find Out the Output of Following SQL Command:-

(i) Select COUNT(DISTINCT charges) from HOSPITAL; 1

(ii) Select MIN(Age) from HOSPITAL where Sex="F"; 1

## SESSION ENDING EXAMINATION

### INFORMATICS PRACTICES

#### CLASS XI

#### MARKING SCHEME

Time allowed: 3 hours

Maximum Marks: 70

*(ALL the answers are suggestive, similar and correct answers may also be considered)*

**Note:** (i) This question paper is divided into 3 sections

(ii) **Section A** consists of 30 Marks. (iii)

**Section B** consists of 20 marks. (iv) **Section**

**C** consists of 20 Marks.

(iv) Answer the questions after carefully reading the text.

#### SECTION-A

1. Answer the following questions :

a. Define each of the following:

(a) Nibble (b) Byte (c) Kilo Byte (d) Giga Byte

2

Ans:- Nibble- Collection of 4 bits

Byte- Collection of 8 bits

Kilobyte- Collection of 1024 bytes

Gigabyte- Collection of 1024 Mega Bytes

(1/2 marks each for each correct ans)

b. State the basic units of the computer. Name the subunits that make up the CPU, and give the function of each of the units.

2

Basic Units: 1. Input unit 2. Central Processing unit(CPU) 3. Output Unit 4. Memory.

Ans. The CPU has two subunits : The control Unit(CU) and Arithmetic logic unit(ALU).

The control unit controls the entire operation being carried out. The

ALU performs the arithmetic and logical operations.

**2 marks for the correct answer.**

c. Differentiate between the compiler and interpreter.

2

Ans. An interpreter converts and executes HLL program code into Machine language code line by line where as Compiler converts an HLL program into object program(Machine Lang.) in one go and once the program is error free, it can be executed later.

**2 Marks for the correct answer.**

d. What is a computer virus? How can it affect your computer?

2

Ans. Computer viruses are malicious codes/programs that cause damage to data and files on a system. Viruses can attack any part of a computer. It can effects as (a) Worms : A worm is a self-replicating program which eats up the entire disk space or memory. (b) Trojan Horses: A Trojan horse is a program that appears harmless but actually performs malicious functions such as deleting files.

**2 Marks for the correct answer.**

e. Expand the following terms :

2

a) PDAs b) MICR c) DVD d) TFT

Ans. PDA :Personal Digital Assistants .

MICR : Magnetic Ink Character Reader / Recognition

DVD : Digital Video Disk

TFT : Thin Film Transistor

**½ Mark each for each correct expansion**

2. a. Which Graphical controls of JAVA can used to display multiple choices out of which more than one can be selected? 1  
jCheckbox .
- Ans. **1 Mark for correct answer**
- b. Suppose you want to scan your storage devices attached with your computer for virus infection. Suggest the type and name of the software. 1
- Ans. Antivirus - MCaffe , Avast, AVG etc.
- 1 Mark for correct answer**
- c. What is Write Once Run Anywhere characteristics of Java? 2
- Ans. The Java programs need to be written just once, which can be run on different platforms without making changes in the Java program. Only the Java interpreter is changed depending upon the platform. This characteristic is known as Write Once Run Anywhere.  
(2 marks for complete answer )
- d. How can you declare the variable in JAVA for the following:- 2
- (iii) If you want to store the Employee no. of an employee.  
(iv) If you want to store the name of an employee.
- Ans. (i) Int employeeeno;  
(ii) String name;
- 1 mark each for each correct declaration.**
- e. What is meant by E-learning. Suggest any two websites which can be used for E-learning. 2
- Ans. E-learning is a flexible term used to describe a means of teaching and learning through technology such as a network, browser, CDROM or DVD multimedia platforms.  
Two websites : [www.moodle.org](http://www.moodle.org), [www.w3schools.com](http://www.w3schools.com)
- 1 Mark for defining e-learning**
- ½ Mark each for each correct website.**
- f. What benefits (mention at least 2) does an e-business offer to an organization?. 2
- Ans. The benefits an e-business offer to an organization are:
1. Provides convenience and comfort for customers.
  2. Offers opportunity to access new markets across the globe.
- 1 Mark each for each correct benefit.**
3. a. Define the following terms in respect of Relational database management System: 2
- (iii) Primary Key. (iv) Foreign Key.
- Ans. (i) A Primary Key is a set of one or more attributes that can uniquely identify tuples within the relation.  
(ii) A column in the current table that is a primary key in another table (Master Table) is known as foreign key.
- 1 Mark each for defining each of the key correctly**
- b. Differentiate between DEFAULT and CHECK constraint of table with example. 2
- Ans.
- | DEFAULT Constraint                                                                                                                     | CHECK Constraint                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Default constraint is used to set a default value for a column that may be used when no value is inserted by the user for that column. | Check constraint is used to check the valid values for a column.                     |
| Ex -<br>Create table student (<br>Gender char(1) Default 'M');                                                                         | Ex -<br>Create table student (<br>Sal decimal(6,2) check (sal>=2000 and sal<=5000)); |
- 1 mark for correct difference**
- ½ mark each for correct example of each.**

- c. What will be the output of following code? 2
- ```
(iii) SELECT LOWER(CONCAT('Informatics', 'Practices')); (iv)
      SELECT INSTR('INFORMATICS PRACTICES','OR');
```
- Ans. (i) informaticspractices
- (ii) 4

1 Mark each for each correct output.

- d. Difference between DDL and DML commands of SQL with example. 2

Ans. Data Definition(Description) Language Subset of SQL commands that are used to describe various objects of database.(Example: CREATE/ALTER)

Data Manipulation Language Subset of SQL commands that are used to manipulate data in tables.(Example: SELECT/INSERT/DELETE/UPDATE)

1 mark for correct difference

½ mark each for correct example of each.

- e. Rahul wants to create a table STUDENT which can store Roll number, name, address and percentage in SQL. Write the command to create the table STUDENT (Decide the type and size of column on your own). 2
- Create table STUDENT(Rollnumber integer, name varchar(15), address varchar(30), percentage decimal(3,2));

Ans. **2 Marks for correct answer.**

SECTION-B

4. A Give the value of x after executing following Java code. 2

```
int a=10;
int b=12;
int x=5; int y=6;
while (a<=b)
{   if (a%2==0)
    x=x + y;
    else
    x=x-y;
    a=a+1;
}
```

Ans. **11**

(2 marks for correct output.)

- b. Find the errors from the following code segment and rewrite the corrected code underlining the correction made. 2

```
int a ,b;
c = a + b;
for(;i<=5;i++)
{
    Display c;
    c=c+1
}
```

Corrected Code:

Ans. int a , b, c;

c = a + b;

for(i<=5;i++)

{

System.out.println(" "+c);

```

        c=c+1;
    }

```

½ mark each for finding any 4 errors.

c. Rewrite the following code using **do-while** loop.

2

```

For(int x=0;x<10;x++)
{
    System.out.println(x);
}

```

Ans. int x=0;

do

{

System.out.println(x);

x=x+1;

} while(x<10)

2 marks for correct answer.

d. Write a JAVA Program to print the following Pattern:

2+2

(i)

(ii)

6

A

55

AAA

444

AAAAA

3333

AAAAAAA

22222

AAAAAAAAA

111111

Ans.

(i)

```
for(int i=6; i>=1;i--)
```

```
{
```

```
    for(int j=6; j>=i; j--)
```

```
        System.out.print(""+i);
```

```
        System.out.println();
```

```
}
```

2 marks for correct code.

(ii)

```
for(int i=1; i<=5;i++)
```

```
{
```

```
    for(int j=4; j>=i; j--)
```

```
        System.out.print(" ");
```

```
        for(int k=1; k<=(2*i-1); k++)
```

```
            System.out.print("A");
```

```
System.out.println();
```

```
}
```

2 marks for correct code.

5. a. Design an application that obtains three values in three text fields from user: Principal, Rate of Interest, Time. It should then compute and display Simple Interest when Calculate button is clicked. Controls names and Interface are given below -

4

Control	Purpose	Name
Text Box	To accept Principal	jTextField1
	To accept Rate of Interest	jTextField2
	To accept Time	jTextField3
	To display Simple Interest	jTextField4

Command Button	To Click for computation & display of Simple Interest	jButton1
----------------	---	----------

Ans.

```
private void jButton1ActionPerformed
(java.awt.event.ActionEvent evt)
{
    jTextField4.setText
    (Double.toString(
    (Double.parseDouble(jTextField1.getText())
    *Double.parseDouble(jTextField2.getText())
    *Double.parseDouble(jTextField3.getText())
    /100)));
}
```

OR

```
private void jButton1ActionPerformed
(java.awt.event.ActionEvent evt)
{
    double P,R,T,SI;
    P= Double.parseDouble (jTextField1.getText()); R=
    Double.parseDouble (jTextField2.getText()); T=
    Double.parseDouble (jTextField3.getText());
    SI = P*R*T/100;
    jTextField4.setText(Double.toString(SI));
}
```

4 Mark for correct code.

- b. Write a java code to calculate and print the factorial of an integer stored in variable **num**.

4

Ans. long i=0, fact=1, num=2;

```
i=num;
while(num!=0)
{
    Fact=fact*num;
    --num;
}

System.out.println("the Factorial of " + I + "is" + fact);
```

4 marks for correct answer.

- c. Rajni Raghav works for a Computer Institute. He wishes to create controls on application form for the following functions. Choose appropriate controls from Text Box, Label, Option Button, Check Box, List Box, Combo Box,

2

command Button and write in the third column :

S.No.	Function / Purpose of Control	Control
1	Enter Applicant Name	
2	Enter Gender	
3	Enter Course from a List of choices	
4	Submit Form	

Ans.

- 1 Text Box
- 2 Option Button
- 3 Combo Box
- 4 Command Button

½ mark each for each correct control name.

SECTION-C

6. Answer the question based on the table given below:

TABLE : Student

Column Name	Data Type	Size	Constraint
Roll_No	NUMBER	4	PRIMARY KEY
Name	VARCHAR	20	Not Null
Stipend	NUMBER	7	Stipend is greater than 0
Stream	VARCHAR	15	Not Null
Grade	VARCHAR	1	

- | | | |
|---------|---|---|
| (x) | Write the SQL command to create the above table with constraints. | 2 |
| (xi) | Insert 2 records with relevant information, in the table student | 1 |
| (xii) | Display all the records of the table Student. | 1 |
| (xiii) | Delete the Student Whose Roll no is 100. | 1 |
| (xiv) | Change the Stream of Student to 'Computer' Whose Roll no. is 536. | 1 |
| (xv) | Add one column email of data type VARCHAR and size 30 to the table Student. | 1 |
| (xvi) | View structure of the table created by you. | 1 |
| (xvii) | Drop the column Grade from the table Student. | 1 |
| (xviii) | Make the all changes permanently. | 1 |

Ans. (i) create table student(Roll_No integer(4) primary key, Name varchar(20) NOT NULL, Stipend integer(7) Check Stipend>0, Stream varchar(15) NOT NULL, Grade varchar(1));

2 marks for correct answer.

- (ii) (a) insert into Student values(100,'Vishal Mishra',1000, 'Science','A');
 (b) insert into Student values(101,'Arvind Verma',2000, 'Science','A');
- (iii) select * from student;
- (iv) delete from Student where Roll_No=100;
- (v) update Student set Stream='Computer' where Roll_No=536;
- (vi) alter table Student add(email varchar(30));
- (vii) desc[ribe] Student; Drop
- (viii) table Student;
- (ix) commit;

1 mark each for each correct answer from part (ii) to (ix)

7.

Answer the question based on the table given below:

TABLE : HOSPITAL

No.	Name	Age	Department	DatoFadm	Charges	Sex
1	Arpit	62	Surgery	21/01/98	300	M
2	Zareena	22	ENT	12/12/97	250	F
3	Kareem	32	Orthopedic	19/02/98	200	M
4	Arun	12	Surgery	11/01/98	300	M
5	Zubin	30	ENT	12/01/98	250	M
6	Ketaki	16	ENT	24/02/98	250	F
7	Ankita	29	Cardiology	20/02/98	800	F
8	Zareen	45	Gynecology	22/02/98	300	F
9	Kush	19	Cardiology	13/01/98	800	M
10	Shilpa	23	Nuclear Medicine	21/02/98	400	F

Ans.

a) SELECT name FROM hospital WHERE DatoFadm > '15-jan-1998';

(b) SELECT name FROM hospital WHERE sex='F' and department='ENT';

(c) SELECT name FROM hospital ORDER BY DatoFadm asc;

(d) SELECT name, charges, age FROM hospital WHERE sex='F';

[2 mark each for each correct query]

i)5

ii)16

[1 mark each for each correct output]