

XII INFORMATICS PRACTICES
CBSE Board – 2011-OD

[Time allowed: 3hours]

[Maximum Marks: 70]

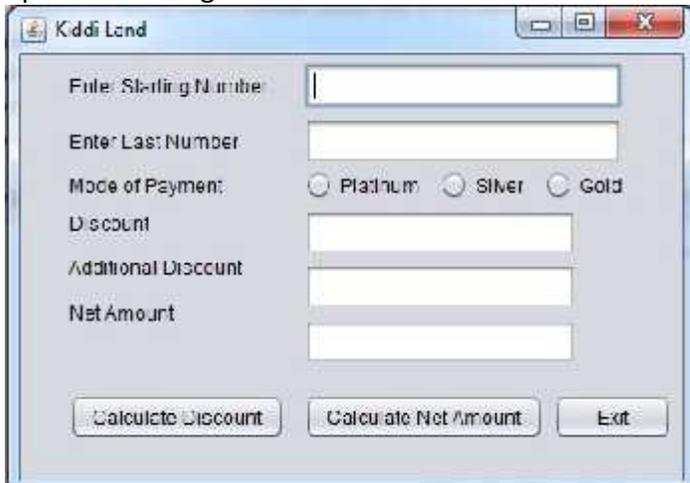
Instructions (i) *All questions are compulsory*
(ii) *Programming Language: Java*

1(a)	Ms. Kant Sengupta wants to prevent unauthorized access to/from his company's local area network. Write the name of a system (software/hardware), which he should install to do the same.	1								
Ans.	Firewall or Intrusion Detection System									
(b)	Seven Brother Fashion Inc. is a fashion company with design unit and market unit 130 meters away from each other. The company recently connected their LANs using Ethernet cable to share the stock related information. But, after joining their LANs, they are not able to share the information due to loss of signal in between. Which device out of the following should you suggest to be installed for a smooth communication? (i) Modem (ii) Repeater (iii) UPS	1								
Ans.	Repeater									
(c)	Which of the following is not a feature of Networking? (i) Resource sharing (ii) Reliability (iii) Uninterrupted power supply (iv) Reduced cost	1								
Ans.	Uninterrupted power supply									
(d)	Name any two Indian scripts included in Unicode.	1								
Ans.	Devnagari, Bengali, Gurmukhi, Gujarati, Kannada, Malayalam, Oriya, Tamil, Arabic, Telugu									
(e)	Mr. Vidya Chauhan is confused between Proprietary and Open source software. Mention at least two points of differences to help her understand the same.	2								
Ans.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th align="center">Proprietary software</th> <th align="center">Open Source software</th> </tr> </thead> <tbody> <tr> <td align="center">✓ Has to be paid for</td> <td align="center">✓ Free and therefore need not be paid for</td> </tr> <tr> <td align="center">✓ Source code not available</td> <td align="center">✓ Source code available for change</td> </tr> <tr> <td align="center">✓ Cannot be copied / distributed</td> <td align="center">✓ Can be copied and distributed</td> </tr> </tbody> </table>	Proprietary software	Open Source software	✓ Has to be paid for	✓ Free and therefore need not be paid for	✓ Source code not available	✓ Source code available for change	✓ Cannot be copied / distributed	✓ Can be copied and distributed	
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(f)	Identify the type of topology from the following:	2								
(i)	In it, each node is connected with the help of a single co-axial cable.									
Ans.	Bus Topology									
(ii)	In it, each node is connected with the help of independent cable with the help of a central switching (communication controller).									
Ans:	Star Topology									
(g)	Define the following with reference to Threats to network security.	2								

	<p>(i) Worm</p> <p>(ii) Trojan Horse</p>													
Ans.	<p>(i) Worm :</p> <ul style="list-style-type: none"> ✓ Self-replicating malware without user intervention ✓ Consumes high volume of bandwidth leading to Denial of service (DoS) <p>(ii) Trojan Horse</p> <ul style="list-style-type: none"> ✓ Appears to perform a desirable function for the user ✓ Steals information through a 'backdoor' /Records browsing activities without the knowledge of the user ✓ Causes system crash or freeze 													
2(a)	While working in Netbeans, Ms. Khorana wants to display 'Pass' or 'Needs to Reappear' message depending the marks entered in jTextField. Help her to choose more appropriate statement out of 'If statement' and 'Switch statement'.	1												
Ans.	IF statement													
(b)	How one can make a Text Field un-editable on a Frame?	1												
Ans.	<JTextField>.setEditable (false)													
(c)	Which HTML tags are used for making a table and adding rows in a HTML document?	1												
Ans.	<ul style="list-style-type: none"> ✓ <TABLE> </TABLE> tags are used for making a table. ✓ <TR> </TR> are used for adding rows in a HTML document. 													
(d)	How is tag different from tag of HTML?	1												
Ans.	<ul style="list-style-type: none"> ✓ stands for ordered list. This tag is used to display an ordered/ numbered list. ✓ stands for unordered list. This tag is used to display a bulleted list. 													
(e)	What will be the value of P and Q after execution of the following code: <pre>int P,Q=100; for(P=10;P<=12;P++) { Q+=P; } JOptionPane.showMessageDialog(this, "P:" + P + "Q:" + Q + "");</pre>	2												
Ans.	P:13 Q:133													
(f)	Differentiate between XML and HTML.	2												
Ans.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">XML</th> <th style="text-align: center;">HTML</th> </tr> </thead> <tbody> <tr> <td>✓ Defines, stores and retrieves the data</td> <td>✓ Defines how webpage is displayed</td> </tr> <tr> <td>✓ XML tags are not predefined</td> <td>✓ HTML tags are predefined</td> </tr> <tr> <td>✓ New tags can be created as per need</td> <td>✓ New tags cannot be defined</td> </tr> <tr> <td>✓ XML tags must have a closing tag.</td> <td>✓ HTML tags may not have closing tag</td> </tr> <tr> <td>✓ XML tags are case-sensitive.</td> <td>✓ HTML tags are not case-sensitive.</td> </tr> </tbody> </table>	XML	HTML	✓ Defines, stores and retrieves the data	✓ Defines how webpage is displayed	✓ XML tags are not predefined	✓ HTML tags are predefined	✓ New tags can be created as per need	✓ New tags cannot be defined	✓ XML tags must have a closing tag.	✓ HTML tags may not have closing tag	✓ XML tags are case-sensitive.	✓ HTML tags are not case-sensitive.	
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(g)	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.	2												

Ans.	<pre>double cost=Double.parseDouble(jTextField1.getText()); int n = Integer.parseInt(jTextField2.getText()); double amount=cost * n; jTextField4.setText(Double.toString(amount)); jTextField5.setText (Double.toString(amount * 0.20));</pre>							
3(a)	Write MySql command that will be used to open an already existing database "CONTACTS".	1						
Ans.	USE CONTACTS;							
(b)	<p>The Doc_name Column of a table Hospital is given below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Doc_name</th> </tr> </thead> <tbody> <tr> <td>Avinash</td> </tr> <tr> <td>Hariharan</td> </tr> <tr> <td>Vinayak</td> </tr> <tr> <td>Deepak</td> </tr> <tr> <td>Sanjeev</td> </tr> </tbody> </table> <p>Based on the information, find the output of the following queries:</p> <p>(i) Select doc_name from Hospital where doc_name like "%v";</p> <p>(ii) Select doc_name from Hospital where doc_name like ":%e%";</p>	Doc_name	Avinash	Hariharan	Vinayak	Deepak	Sanjeev	2
Doc_name								
Avinash								
Hariharan								
Vinayak								
Deepak								
Sanjeev								
Ans.	<p>(i) Sanjeev</p> <p>(ii) Deepak Sanjeev</p>							
(c)	A table "Transport" in a database has degree 3 and cardinality 8. What is the number of rows and columns in it?	2						
Ans.	8 3							
(d)	Differentiate between Alternate key and Candidate key.	1						
Ans.	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Alternate Key</th> <th>Candidate Key</th> </tr> </thead> <tbody> <tr> <td>✓ A key that can act as a primary key but is not selected as primary key</td> <td>✓ A key that can be set as Primary key is called a candidate key.</td> </tr> </tbody> </table>	Alternate Key	Candidate Key	✓ A key that can act as a primary key but is not selected as primary key	✓ A key that can be set as Primary key is called a candidate key.			
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(e)	Define a class with reference to Object Oriented Programming.	1						
Ans.	A class is a logical unit – a user defined data type. It encapsulates and binds The data members and the methods.							
(f)	A employee_Id consisting of 5 digits is stored in a string variable strEmpId. Now Mr. Deb wants to store this Id in integer type of variable IntEmpId. Write a java statement to do this.	1						
Ans.	int IntEmpId = Integer.parseInt (strEmpId) ;							
(g)	<p>Sarthak, a student of class XII, created a table "Class". Grade is one of the columns of this table. To find the details of students whose Grades have not been entered, he wrote the following MySql query, which did not give the desired result.</p> <p>SELECT * FROM Class WHERE Grade="Null";</p> <p>Help Sarthak to run the query by removing the errors from the query and write the correct Query.</p>	2						

Ans.	SELECT * FROM Class WHERE Grade IS NULL;	
4(a)	<p>What will be displaced in of jTextField1 after executing the following code?</p> <pre>int m=16; m=m+1; if(m<15) jTextField1.setText(Integer.toString(m)); else jTextField1.setText(Integer.toString(m+15));</pre>	2
Ans.	32	
(b)	<p>Rewrite the following program code using a Switch statement.</p> <pre>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";</pre>	2
Ans.	<pre>switch(code) { case 1: Month="January" ; break; case 2: Month="February" ; break; case 3: Month="March" ; break; case 4: Month="April" ; break; default: Month="No Match" ; }</pre>	
(c)	<p>What will be displayed in JTextArea1 after executing the following statement:</p> <pre>JTextArea1.setText("cbse\n Final_Exam\t IP");</pre>	1
Ans.	<p>Cbse Final_Exam IP</p>	
(d)	<p>The following code has some error(s). Rewrite the correct code underlining all the correction made:</p> <pre>Int K=2;sum=0;//Declaring K and sum as Integer { sum=K; K+=2; }</pre>	2

	<pre>while(K<=20) jTextField1(Integer.toString(sum));</pre>	
Ans.	<pre>int k=2,sum=0; //could also be written as int k = 2; int sum = 0; do { sum=k; // could also be written as sum=sum + k; k += 2 ; }while(k<=20); jTextField1.setText(Integer.toString(sum)) ;</pre>	
(e)	<p>Given a string object namely 'subject', having value as "123" stored in it. What will be result of the following: JOptionPane.showMessageDialog(null,""+(subject.length() + Integer.parseInt(subject)));</p>	1
Ans.	126	
(f)	<p>The following code has some error(s). Rewrite the correct code underlining all the correction made:</p> <pre>int Sum=0,Step=5; int I; for(i=0,i<=5;i++) { Step+=5; Sum+=Step; } jTextArea1.showText(""+Sum);</pre>	2
Ans:	<pre>int Sum = 0, Step = 5; <u>int i ;</u> for (i=0 ; i <= 5 ; i++) { Step + = 5; Sum + = Step; } jTextArea1.<u>setText</u> ("" + Sum);</pre>	
(g)	<p>Mr. Radhey Shyam Bansal the owner of the Kiddi Land Enterprise has asked his programmer Ekta to develop the following GUI in Netbeans.</p> 	5

Mr. Bansal accepts payment through three types of credit cards. The discount is given according to the following scheme:

Type of Card	Discount
Platinum	20% of amount
Gold	15% of amount
Silver	10% of amount

If the bill amount is more than Rs. 25,000/- then the customer gets an additional offer of 5%. Write java code for the following:

- i) To assign Additional Discount as 0 (jTextField4) and Net amount as 0 (jTextField5). Also set them as un-editable. **(1)**
- ii) [when "Calculate Discount" (jButton1) is clicked] **2**
 To calculate discount as per the given criteria and display the same in jTextField3
 To assign Additional Discount (jTextField4) as 5% of amount (jTextField2) as per the above condition.
 To enable "Calculate Net Amount" (jButton2) button
- iii) [when "Calculate Net Amount" (jButton2) button is clicked] **2**
 To calculate net amount as [TotalCost(jTextField2)- Discount (jTextField3)
 -Additional Discount (jTextField4)]
 To display the net amount in jTextField5.

Ans:

```
( i)  jTextField4.setText("0");
      jTextField5.setText("0"); jTextField4.setEditable(false);
      jTextField5.setEditable(false);

(ii) double discount = 0.0 ;
      double billAmount=
      Double.parseDouble(jTextField2.getText());
      if(jRadioButton1.isSelected()) discount = 0.20;
      if(jRadioButton2.isSelected()) discount = 0.15;
      (jRadioButton3.isSelected()) discount = 0.10;
      jTextField3.setText(billAmount * discount + "");
      if (billAmount > 25000)
      jTextField4.setText (billAmount*0.05+" ");
      jButton2.setEnabled(true) ;

(iii)  double netAmount =
        Double.parseDouble(jTextField2.getText()) -
        Double.parseDouble(jTextField3.getText())
        Double.parseDouble(jTextField4.getText());
        jTextField5.setText(netAmount + " ");
```

5(a) What is the purpose of ALTER TABLE command in MySQL? How is it different from UPDATE command? **2**

Ans: ALTER TABLE command is used to modify the structure of a table.

	ALTER TABLE	UPDATE																																											
	✓ It is a DDL command.	✓ It is a DML command																																											
	✓ Changes the underlying table structure	✓ Changes values of tuples in a table																																											
	✓ Cannot be rolled back	✓ Can be rolled back																																											
(b)	Table employee has 4 records and Table Dept has 3 records in it. Mr. Jain wants to display all information stored in both of these related tables. He forgot to specify equi-join condition in the query. How many rows will get displayed on execution of this query?		1																																										
Ans:	12																																												
(c)	Consider the table EXAM given below. Write commands in MySQL for(i) to (iv) and output for (v) to (vii)		7																																										
	Table : EXAM																																												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Name</th> <th>Stipend</th> <th>Subject</th> <th>Average</th> <th>Division</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Karan</td> <td>400</td> <td>English</td> <td>68</td> <td>FIRST</td> </tr> <tr> <td>2</td> <td>Aman</td> <td>680</td> <td>Mathematics</td> <td>72</td> <td>FIRST</td> </tr> <tr> <td>3</td> <td>Javed</td> <td>500</td> <td>Accounts</td> <td>67</td> <td>FIRST</td> </tr> <tr> <td>4</td> <td>Bishakh</td> <td>200</td> <td>Informatics</td> <td>55</td> <td>SECOND</td> </tr> <tr> <td>5</td> <td>Sugandha</td> <td>400</td> <td>History</td> <td>35</td> <td>THIRD</td> </tr> <tr> <td>6</td> <td>Suparna</td> <td>550</td> <td>Geography</td> <td>45</td> <td>THIRD</td> </tr> </tbody> </table>			No.	Name	Stipend	Subject	Average	Division	1	Karan	400	English	68	FIRST	2	Aman	680	Mathematics	72	FIRST	3	Javed	500	Accounts	67	FIRST	4	Bishakh	200	Informatics	55	SECOND	5	Sugandha	400	History	35	THIRD	6	Suparna	550	Geography	45	THIRD
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i	To list the names of those students, who have obtained Division as FIRST in the ascending order of NAME.		1																																										
ii	To display a report listing NAME, SUBJECT and Annual stipend received assuming that the stipend column has monthly stipend.		1																																										
iii	To count the number of students, who have either accounts or informatics as subject.		1																																										
iv	To insert a new row in the table EXAM: 6,"Mohan",500,"English",73,"Second"		1																																										
v	SELECT AVG(Stipend) FROM EXAM WHERE DIVISION="THIRD"		1																																										
vi	SELECT COUNT(DISTINCT Subject) FROM EXAM;		1																																										
vii	SELECT MIN(Average) FROM EXAM WHERE Subject="English";																																												
Ans:	(i) SELECT Name FROM Exam WHERE Division = 'FIRST' ORDER BY Name; (ii) SELECT NAME, SUBJECT, STIPEND * 12 FROM EXAM; (iii) SELECT COUNT(*) FROM EXAM WHERE SUBJECT IN ('Accounts', 'Informatics'); (iv) INSERT INTO EXAM VALUES (6, "Mohan", 500, "English", 73, "SECOND"); (v) 475 (vi) 6 (vii) 68																																												

6(a) Write a MySQL command for creating a table "BANK" whose structure is given below: 2

Table : BANK

Field Name	Datatype	Size	Constraint
Acct_number	Integer	4	Primary Key
Name	Varchar	3	
BirthDate	Date		
Balance	Integer	8	Not Null

Ans: CREATE TABLE BANK (Acct_number INTEGER (4) PRIMARY KEY, Name VARCHAR(3) , BirthDate DATE, Balance INTEGER (8) NOT NULL);

(b) In a database there are two tables "ITEM" and "CUSTOMER" as shown below: 5

Table : ITEM

ID	ItemName	Company	Price
1001	Moisturiser	XYZ	40
1002	Sanitizer	LAC	35
1003	Bath Soap	COP	25
1004	Shampoo	TAP	95
1005	Lens Solution	COP	350

Table : CUSTOMER

C_ID	CustomerName	City	ID
01	Samridhh Ltd	New Delhi	1002
05	Big Line Inc	Mumbai	1005
12	97.8	New Delhi	1001
15	Tom N Jerry	Bangalore	1003

Write the command in SQL queries for the following:

(i) To display the details of Items whose Price is in the range of 40 and 95(Both values included) 1

(ii) To display the CustomerName, City from table Customer and ItemName and Price from table Item, with their corresponding matching ID. 2

(iii) To increase the price of all the products by 50. 2

Ans: (i) SELECT * FROM ITEM WHERE PRICE >= 40 AND PRICE <= 95;
 (ii) SELECT CUSTOMERNAME, CITY, ITEMNAME, PRICE FROM CUSTOMER CUST, ITEM WHERE CUST.ID = ITEM.ID;
 (iii) UPDATE ITEM SET PRICE = PRICE + 50 ;

(c) In a database School there are two tables Employee and Dept as show below. 2

Table : Employee

EmpId	Name	Sal	Deptno
T001	Vishakha	34000	10
T001	Mridul	32000	50
T001	Manish	45000	20

Table : Dept

Deptno	DName	LocationId
10	Lights	HH02
20	Dance	FF02
30	Production	AB01

- (i) Identify the foreign key in the table Employee.
 (ii) What output, will you get, when an equi-join query is executed to get the NAME from Employee Table and corresponding DNAME from Dept table?

Ans: (i) Deptno
 (ii) Vishakha Lights

7(a) Give one social impact of e-Business.

1

Ans: Brings rapid change in
 ✓ the social fabric characterized by globalization of markets
 ✓ business and government policies

(b) Write two advantages of e-Learning sites.

1

Ans:
 ✓ Self paced learning
 ✓ Unlimited revisions
 ✓ Facilitates electronic delivery of customized learning objects
 ✓ Facilitates teacher-student interaction
 ✓ Facilitates peer-peer interaction

(c) Write three important features of e-Governance? Give URL of one of the commonly used e-Governance portal.

2

Ans:
 ✓ Provides citizens access to information about the processes and services.
 ✓ Facilitates a speedy, transparent, accountable and efficient process for performing government administrative activities.
 ✓ Uses modern information and telecommunication technologies such as internet, Local area networks to enhance efficiency
 ✓ A lot of productive time of government servants and general public is saved.
 e.Governance portal:
 ✓ www.incometaxindia.gov.in
 ✓ supremecourtindia.nic.in

	<ul style="list-style-type: none">✓ passport.gov. in✓ https://www.irctc.co.in	
(d)	<p>Anuja is creating a form for her practical file. Help her to choose most appropriate controls from List Box, Combo Box, TextField, TextArea, RadioButton, Checkbox, Label and Command button for the following entries from user.</p> <ul style="list-style-type: none">(i) A message “Enter Marks” in front of a TextField.(ii) An input to choose more than one subjects from a set of choices.(iii) An input for entering remarks.(iv) An input for accepting Gender.	2
Ans:	<ul style="list-style-type: none">(i) Label(ii) ListBox/Check Box(iii) TextArea [Most Appropriate answer] TextField [Also acceptable](iv) RadioButton/ComboBox [Most Appropriate answer] TextField [Also acceptable]	

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