Sample Paper 2015

Class   : XII   MM : 70
Subject   : Informatics Practices   Time : 3 hours

General Instructions :
1. This question paper is divided into three sections
2. Section – A consists 30 marks.
3. Section – B is of 20 marks each
4. Section – C is of 20 marks each
5. Attempt all the parts of a section together.

Section – A

(1) Answer the following questions:

(a)	Write the name of most suitable communication wireless channels for each of the following situations (i) Communication between two offices in hilly areas. (ii) Transfer data from one mobile phone to another	1
(b)	Name two encodings used for Indian language computing.	1
(c)	Name the type of network formed when you connect your computer to internet.	1
(d)	**Brightlands Girls Sr. Sec. School** installed Windows 7 and Open Office for its computer lab computer lab. Which type of software is Windows 7 and Open Office?	1
(e)	Heena says that the following numbers indicate an address : 20: AC : C2 : 56 : 3D :AB What is the above address called? What does the last three values of it stand for?	2
(f)	What is an open standard? Give any two examples.	2
(g)	What do you understand by Network Security? Name two common threats to it.	2

(2) Answer the following questions:

(a)	What makes XML different from HTML?	2
(b)	What is the use of **LINK**, **ALINK**, **VLINK** attribute of <body> tag?	3
(c)	Create a java method that receives a number as parameter and returns 1 if the number is a multiple of three else returns 0.	2
(d)	What is the difference between a class and an object?	2
(e)	Name any two methods associated with jOption dialog.	1

(3) Answer the following questions:

(a)	Write the sql command to create a database named BLS if it is does not exist in Mysql.	1
(b)	Aanchal wants to replace all NULLS in the column COMM of table EMPL with 100. Write the sql command that solves her problem.	1
(c)	Name any two sql commands which are committed by default.	1
(d)	Write a SQL command to view the constraints of EMP table.	1
(e)	A table Student has 5 columns and 3 rows. What will be the **degree** and **cardinality** of the table after execution of the given sql statement **Update Student Set Session=2012;**	2
(f)	Distinguish between primary key and candidate key with suitable examples.	2
(g)	What do you understand by ALL or NONE in context of transaction handling?	2

(4)	RajMahal Hotel computerized its Billing System. Given below the data entry screen through which bill amount is calculated.		

Rate	Breakfast	Lunch	Dinner
Veg	100	200	300
Non Veg	200	400	500

(a)	Write the code for calculate button to calculate amount as per the rate specified in the table, service tax (12% of amount) . Total bill amount=total + service tax.	5
(b)	Write the code to clear all textfields, uncheck checkbox and set **Veg** as the default option	2
(c)	Write the code to exit the application. Use ConfirmDialog with the following message **"Are you sure you want to Exit "** If only user presses **Yes** button then application should be closed.	2
(d)	Write the code to make textfields **tfAmount**, **tfBillAmount** non editable.	1

(5) Answer the following questions

(a)	Write the output of the following code	2

```
int f=1,i=2;
do{
f*=I;
}while(++i<5);
System.out.println(f);
```

(b)	Rewrite the following code segment using for… loop without effecting the output of the code:	2

```
        int  a=0,j ;
        while(a!=20)
          {     j+=a;
             If(a%5==0)
                { a+=5;  }
             else
                { a+=1;}
            a+=2;
          }
```

(c)	Define a class **Bank** to represent the bank account of a customer with the following specification	2
	Private Members:	

         - Name   of type String
         - Account_no   of type long
         - Type_of_account   of type char
         - Balance   of type float

Public Members:
A **constructor** to initialize data members as follows
         - Name   NULL
         - Account_no   100001
         - Type_of_account   'S'
         - Balance   5000

(d)	How has society benefited from e-governance?	2
(e)	What benefit does an e-business offers to the customers?	2

Section C   (Based on MYSQL)

(6)	Answer the following questions:	

(a)	Write output of the following SQL queries :
	 i) SELECT TRUNCATE(222.78);
	 ii) SELECT DAYOFMONTH('2015-1-18');
	 iii) SELECT MID('I m loving it',-2,1);
	 iv) SELECT SQRT(POW(2,4));
		2

(b)	Consider the tables ITEMS & COMPANY. Write SQL commands for the statements (i) to (iv) and give the outputs for SQL queries (v) to (viii)	8

Table : ITEMS

ID	PNAME	PRICE	MDATE	QTY
T001	Soap	12.00	2007-03-11	200
T002	Paste	39.50	2006-12-23	55
T003	Deodorant	125.00	2007-6-12	46
T004	Hair Oil	28.75	2007-9-25	325
T005	Cold Cream	66.00	2007-10-9	144
T006	Tooth Brush	25.00	2006-2-17	455

Table : COMPANY

ID	COMP	City
T001	HLL	Mumbai
T008	Colgate	Delhi
T003	HLL	Mumbai
T004	Paras	Haryana
T009	Ponds	Noida
T006	Wipro	Ahmedabad

i. To display PNAME, PRICE * QTY only for the city Mumbai.
ii. To display product name, company name & price for those items which IDs are equal to the IDs of company.
iii. To delete the items produced before 2007.
iv. To increase the quantity by 20 for soap and paste.

v. SELECT COUNT(*) FROM ITEMS WHERE ITEMS.ID=COMPANY.ID;

vi. SELECT PNAME FROM ITEMS WHERE PRICE=SELECT MIN(PRICE) FROM ITEMS;

vii. SELECT COUNT(*) FROM COMPANY WHERE COMP LIKE "P_ _ _ _";

viii. SELECT PNAME FROM ITEMS WHERE QTY<100;

(7)	Answer the following questions:	2

(a) Write an SQL query to create the table "Books" with the following structure-

Field	Type	Constraint
Book_Id	Varchar(6)	Primary Key
Book_Name	Varchar(25)	Not Null
Author_Name	Varchar(30)	
Publisher	Varchar(20)	Default 'CBSE
Price	Integer	Between 100 and 1000
Type	Varchar(15)	
Quantity	Integer	Not Null

(b) Consider the table SPORTS given below. Write commands in SQL for (i) to (iv) and output for (v) to (viii)   8

Table : SPORTS

StudentNo	Class	Name	Game1	Grade1	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Athletics	C

   i.   Display the names of the students who have grade 'A' in either Game1 or Game2 or both.

   ii. Display the number of students having game 'Cricket'.

   iii. Display the names of students who have same game for both Game1 and Game2.

   iv. Display the games taken by the students whose name starts with 'A'.

   v. SELECT COUNT(*) FROM SPORTS;

   vi. SELECT DISTINCT Class FROM SPORTS;

   vii. SELECT MAX(Class) FROM STUDENT;

   viii. SELECT COUNT(*) FROM SPORTS GROUP BY Game1;

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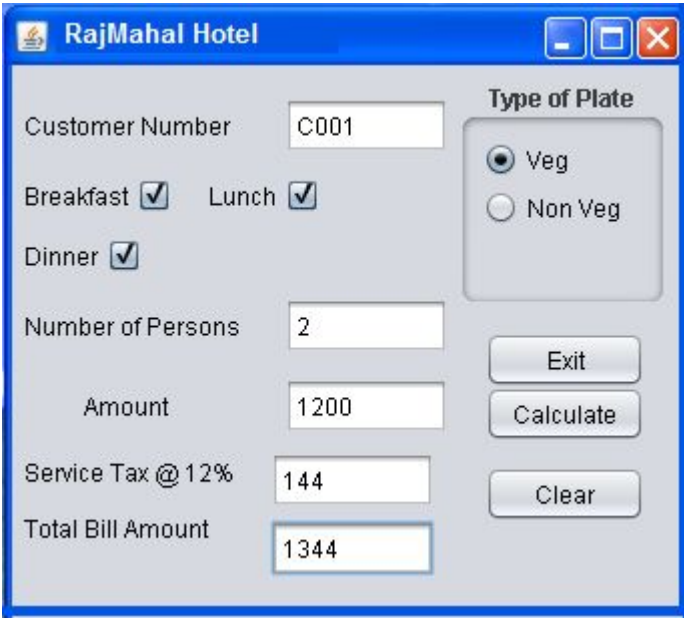5. Attempt all the parts of a section together.

	Section – A	
(1) Answer the following questions:		
(a)	Write the name of most suitable communication wireless channels for each of the following situations	1
Ans	(i) Communication between two offices in hilly areas. **Microwave**	
	(ii) Transfer data from one mobile phone to another **Bluetooth**	
(b)	Name two encodings used for Indian language computing.	1
Ans	Unicode and ISCII	
(c)	Name the type of network formed when you connect your computer to internet.	1
Ans	WAN	
(d)	**Brightlands Girls Sr. Sec. School** installed Windows 7 and Open Office for its computer lab computer lab. Which type of software is Windows 7 and Open Office?	1
Ans	Windows 7 - Proprietary software and Open Office - Open Source software	
(e)	Heena says that the following numbers indicate an address : 20: AC : C2 : 56 : 3D :AB What is the above address called? What does the last three values of it stand for?	2
Ans	MAC Address. The last three values are the card number.	
(f)	What is an open standard? Give any two examples.	2
Ans	Open standard are internationally accepted technical standards that guarantee that data can be exchanged and accessed across platforms and applications . Examples : OGG, FLAC, HTML, SVG	
(g)	What do you understand by Network Security? Name two common threats to it.	2
Ans	Network security is needed to protect data during their transmission and to guarantee that data transmissions are authentic. Two common threats are (i) Trojan Horse (ii) Worms	
(2) Answer the following questions:		
(a)	What makes XML different from HTML? **HTML** Contains Predefined tags, TAGS may or may not have a closing tag	2
Ans	**XML** contains user defined tags , TAGS must have a closing tag.	
(b)	What is the use of **LINK**, **ALINK**, **VLINK** attribute of <body> tag?	3
Ans	**LINK** :- This sets the colour of all of the non-visited links on the page. **ALINK** :- This sets the colour of all of the active-visited links on the page. **VLINK** :- This sets the colour of all of the visited links on the page.	
(c)	Create a java method that receives a number as parameter and returns 1 if the number is a multiple of three else returns 0.	2

Ans	`int checkMultiple(int n)`
	`{`
	`    if(n%3==0)`
	`      return 1;`
	`    else`
	`        return 0;`
	`}`	

(d)	What is the difference between a class and an object?	2
Ans	A class is a blueprint that represents a set of similar objects. An Object is an identifiable entity with some characteristics and behavior.	

(e)	Name any two methods associated with jOption dialog.　　(any two)	1
Ans	showInputDialog()　　　　　　　　showConfirmDialog() showMessageDialog()　　　　　　　showOptionDialog()	

(3) Answer the following questions:

(a)	Write the sql command to create a database named **BLS** if it is does not exist in Mysql.	1
Ans	CREATE DATABASE IF NOT EXISTS BLS;	
(b)	Aanchal wants to replace all **NULLS** in the column **COMM** of table **EMPL** with **100.** Write the sql command that solves her problem.	1
Ans	SELECT IFNULL(comm,100) from empl. Update EMPL set comm=100 where COMM IS NULL;	
(c)	Name any two sql commands which are committed by default.	1
Ans	CREATE, ALTER and DROP	
(d)	Write a SQL command to view the constraints of EMP table.	1
Ans	SHOW TABLE EMP;　　 or DESC EMP;	
(e)	A table Student has 5 columns and 3 rows.	2
Ans	What will be the degree and cardinality of the table after execution of the given sql statement **Update Student Set Session=2012;** Degree – 5 Cardinality – 3	
(f)	Distinguish between primary key and candidate key with suitable examples.	2
Ans	Primary Key – Uniquely identifies a row Candidate key is a candidate for primary key	
(g)	What do you understand by ALL or NONE in context of transaction handling?	2
Ans	It means that either all operations of a transaction are carried out successfully or none of it.	

Section – B (Based on Java)

(4)	RajMahal Hotel computerized its Billing System. Given below the data entry screen through which bill amount is calculated.	

Rate	Breakfast	Lunch	Dinner
Veg	100	200	300
Non Veg	200	400	500

(a)	Write the code for calculate button to calculate amount as per the rate specified in the table, service tax (12% of amount) . Total bill amount=total + service tax.	5
(b)	Write the code to clear all textfields, uncheck checkbox and set **Veg** as the default option	2

(c)	Write the code to exit the application. Use ConfirmDialog with the following message **"Are you sure you want to Exit "** If only user presses **Yes** button then application should be closed.		2
(d)	Write the code to make textfields **tfAmount**, **tfBillAmount** non editable.		1

(5) Answer the following questions

(a)	Write the output of the following code	2

```
int f=1,i=2;                          Output
do{                                              24
f*=I;
}while(++i<5);
System.out.println(f);
```

(b)	Rewrite the following code segment using **for**… loop without effecting the output of the code:	2

``int a=0,j ;
while(a!=20)
{   j+=a;
      If(a%5==0)
        { a+=5; }
      else
        { a+=1;}
     a+=2;
}```
	``int a=0,j;
	for(a=0;a!=20)
	{
	         j+=a;
	
	         If(a%5==0)
	           { a+=5; }
	         else
	             { a+=1;}
	        a+=2;
	}```

(c)	**a) Define a class Bank to represent the bank account of a customer with the following specification**
	Private Members:
	- Name of type String
	- Account_no of type long
	- Type_of_account of type char
	- Balance of type float
	-
	Public Members:
	A constructor to initialize data members as follows
	- Name NULL
	- Account_no 100001
	- Type_of_account 'S'
	- Balance 5000
	-
		``class Bank
		{
		
		String Name ;
		Long Account_no;
		char typeofaccount;
		float balance;
		
		      public Bank()
		      {
		         Name =NULL;
		         Account_no=100001;
		         Type_of_account = 'S';
		         Balance = 5000;
		      }
		}```
			2

(d)	How has society benefited from e-governance? • Reduction in the number of trips to offices. • Reduction in waiting time • Reduction in bribes. • All the above factors resulted in reduced cost of availing the services.	2
(e)	What benefit does an e-business offers to the customers? • Improved speed of response • Cost savings • Improved efficiency and availability. • Improved customer service	2

		Section C (Based on MYSQL)		
(6)	Answer the following questions:			

(a)	Write output of the following SQL queries :
	   i) SELECT TRUNCATE(222.78);
	   ii) SELECT DAYOFMONTH('2015-1-18');
	   iii) SELECT MID('I m loving it',-2,1);
	   iv) SELECT SQRT(POW(2,4));
			Output
			223
			18
			I
			4
				2

(b)	Consider the tables ITEMS & COMPANY. Write SQL commands for the statements (i) to (iv) and give the outputs for SQL queries (v) to (viii)			8

Table : ITEMS

ID	PNAME	PRICE	MDATE	QTY
T001	Soap	12.00	2007-03-11	200
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T005	Cold Cream	66.00	2007-10-9	144
T006	Tooth Brush	25.00	2006-2-17	455

Table : COMPANY

ID	COMP	City
T001	HLL	Mumbai
T008	Colgate	Delhi
T003	HLL	Mumbai
T004	Paras	Haryana
T009	Ponds	Noida
T006	Wipro	Ahmedabad

		i. To display PNAME, PRICE * QTY only for the city Mumbai.	
		Ans SELECT PNAME, QTY*PRICE FROM ITEMS WHERE ITEMS.ID = COMPANY.ID AND COMPANY.City='Mumbai';	
		ii. To display product name, company name & price for those items which IDs are equal to the IDs of company.	
		Ans SELECT PNAME, COMP, PRICE FROM ITEMS, COMPANY WHERE ITEMS.ID = COMPANY.ID;	
		iii. To delete the items produced before 2007.	
		Ans DELETE FROM ITEMS WHERE MDATE < '2007-01-01';	
		iv. To increase the quantity by 20 for soap and paste.	
		Ans UPDATE ITEMS SET QTY = QTY + 20 WHERE PNAME = 'Soap' OR PNAME = 'Paste';	
		v. SELECT COUNT(*) FROM ITEMS WHERE ITEMS.ID=COMPANY.ID;	
		Ans 4	
		vi. SELECT PNAME FROM ITEMS WHERE PRICE=SELECT MIN(PRICE) FROM ITEMS;	
		Ans Soap	
		vii. SELECT COUNT(*) FROM COMPANY WHERE COMP LIKE "P_ _ _ _";	
		Ans 2	
		viii. SELECT PNAME FROM ITEMS WHERE QTY<100;	
		Ans Paste **Deodorant**	
(7) **(a)**		**Answer the following questions:** Write an SQL query to create the table "**Books**" with the following structure-	2

Field	Type	Constraint
Book_Id	Varchar(6)	Primary Key
Book_Name	Varchar(25)	Not Null
Author_Name	Varchar(30)	
Publisher	Varchar(20)	Default 'CBSE'
Price	Integer	Between 100 and 1000
Type	Varchar(15)	
Quantity	Integer	Not Null

Ans

Create table Books
```
(
  Book_Id        Varchar(6)    Primary Key,
  Book_Name      Varchar(25)   Not Null,
  Author_Name    Varchar(30)   ,
  Publisher      Varchar(20)   Default 'CBSE',
  Price          Integer       Check(Price Between 100 and 1000),
  Type           Varchar(15)   ,
  Quantity       Integer       Not Null,
);
```

| (b) | Consider the table SPORTS given below. Write commands in SQL for (i) to (iv) and output for (v) to (viii) | 8 |

Table : SPORTS

StudentNo	Class	Name	Game1	Grade1	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Athletics	C

   i.   Display the names of the students who have grade 'A' in either Game1 or Game2 or both.

Ans Select Name from SPORTS where Grade1='A' OR Gra de2='A';

   ii. Display the number of students having game 'Cricket'.

Ans Select count(*) from SPORTS Where Game1='Cricket' OR Game2='Cricket';

   iii. Display the names of students who have same game for both Game1 and Game2.

Ans Select Name from SPORTS where Game1=Game2;

   iv. Display the games taken by the students whose name starts with 'A'.

Ans Select Game1,Game2 from SPORTS where Name LIKE 'A%';

   v. 'SELECT COUNT(*) FROM SPORTS;

Ans 6

   vi. SELECT DISTINCT Class FROM SPORTS;

Ans   7
        8
        9
        10

   vii. 'SELECT MAX(Class) FROM STUDENT;

Ans   10

   viii. SELECT COUNT(*) FROM SPORTS GROUP BY Game1;

Ans   **2**
          2
          1
          1

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