CBSE AISSCE 2016 Marking Scheme for Informatics Practices
(Sub Code: 065 Paper Code 90/1 Delhi)

General Instructions:
- Marking scheme is the final document for all references with regard to evaluation and cannot be altered under any circumstance.
- The answers given in the marking scheme are SUGGESTIVE, Examiners are expected to award marks for all alternative correct Solutions/Answers conveying the similar meaning.
- All programming questions have to be answered with respect to Java Language only.
- In Java, ignore case sensitivity for identifiers (Variables / Functions / Structures / Class Names).
- In SQL related questions :
  - A. Both ways of text/character entries should be acceptable. For example: "AMAR" and 'amar' both are acceptable.
  - B. All date entries should be acceptable for example: 'YYYY-MM-DD', 'YY-MM-DD', 'DD-Mon-YY', "DD/MM/YY", 'DD/MM/YY', "MM/DD/YY", 'MM/DD/YY' and {MM/DD/YY} are correct.
  - C. Semicolon should be ignored for terminating the SQL statements.
  - D. Ignore case sensitivity for commands.
  - E. Ignore headers in output questions.

1	(a)	Two doctors have connected their mobile phones to transfer a picture file of a person suffering from a skin disease. What type of network is formed? Which communication media out of Coaxial cable, Optical fiber, Bluetooth, Satellite link should be used to transfer the file?	2
	Ans	PAN Bluetooth	
		(1 mark each for each correct answer)	
	(b)	State reason why Star topology requires more cable length than Bus topology.	2
	Ans	Star topology involves a central hub or switch to which all individual node(s) are connected with individual cable, therefore more cable is required in Star topology than Bus topology.	
		(2 marks for correct answer) *Note : Full 2 marks to be allotted if reason represented with the help of diagram*	
	(c)	"Open Source Software developers work for the good of community". Is this statement true? Give reason.	2
	Ans	Yes, the above statement is true. ● Open source developers choose to make the source code of their software publicly available to which many developers can view/use the software and also modify it. ● Users can download the software free of cost. So, they work for the good of the community.	

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		(1 mark for stating 'Yes') *(1 mark for correct reason)*	
	(d)	What happens during 'Domain Name Resolution'?	2
	Ans	The process of translating a domain name to an IP address is called Domain name resolution.	
		(2 marks for correct answer) *Note : Full 2 marks to be allotted if reason is represented with the help of example.*	
	(e)	How is 'Denial of service' attack, a threat to Network security?	2
	Ans	Denial-of-service (DoS) is an indication that an attacker (hacker) or unauthorised user has attempted to connect/access data and thus suggests a threat on network security.	
		(2 marks for correct answer) *Note : 1½ mark for only stating what is DoS .*	
2	(a)	Identify the odd one out of the following statements. State reason for your choice. i) switch ii) do while iii) while iv) for	1
	Ans	i) switch switch is a selection statement but others are looping / iteration statements.	
		(½ mark for identifying) *(½ mark for reason)*	
	(b)	What is the difference between setVisible() and setEnabled() methods?	1
	Ans	setVisible() sets the visibility of a component i.e. whether the component will be visible or hidden on form. setEnabled() sets whether the component can trigger an event or not.	
		(1 mark for correct answer) *Note : Full 1 mark to be allotted if difference explained with the help of example.*	

	(c)	What is the difference between the following statements i) and (ii)
		     i) a = 5;
		  ii) if (a = = 5)
		      x = 3;
			1

	Ans	In i) variable a is being assigned the value 5 whereas in ii) a is being checked for equality with 5 OR In i) assignment operator is used and in ii) relational operator '==' is used.	
		(1 mark for mentioning correct difference)	
	(d)	Write the output in jtextField1 if depcode is 3.	1

		```switch(depcode)\n {\n case 1 :\n allowance = 4000;\n break;\n case 2 :\n allowance = 3200;\n break;\n\n default :\n allowance = 1000;\n }\n jTextField1.setText(" "+allowance);```	
	Ans	1000	
		(1 mark for correct answer)	
(e)		Sandhya is creating a webpage. She is entering HTML code on her computer. In between, she keeps pressing 'Refresh'/ 'Reload' button on her browser. What is the purpose?	2
	Ans	The purpose of 'Refresh'/'Reload' is to view the changes in the webpage.	
		(2 marks for correct answer)	
(f)		What does 'XML' stand for? How is the purpose of HTML different from XML?	2
	Ans	XML stands for eXtensible Markup Language. HTML is used to create web pages / display data whereas XML is used to describe/store/transport data.	
		(1 mark for expanding XML) *(1 mark for correct difference)* *Note : Full 1 mark to be allotted if purpose of only HTML is specified.*	
(g)		Write Java code (statements) to declare Y as integer variable. Then, assign the value 30 to a variable Y. Increase the value of Y by 5 and store the increased value in Z.	2
	Ans	```int Y;\nY = 30;\nY = Y + 5;\nZ = Y;```	
		(½ mark for declaring Y) *(½ mark for initialising Y to 30)* *(½ mark for incrementing the value of Y)* *(½ mark for assigning the final value to Z)*	
3	(a)	What is MySQL?	1
	Ans	MySQL is a Relational Database Management System.	
		(1 mark for correct answer)	

		Note: ½ mark to be awarded if only 'Open Source Software' is mentioned	
(b)		Charvi is inserting "Sharma" in the "LastName" column of the "Emp" table but an error is being displayed. Write the correct SQL statement. `INSERT INTO Emp('Sharma') VALUES (Lastname) ;`	1
	Ans	`INSERT INTO Emp(Lastname) VALUES ('Sharma') ;`	
		(1 mark for correct answer)	
(c)		Kunal created the following table with the name 'Friends':	1

FriendCode	Name	Hobbies
F101	Bijoy	Swimming
F102	Abhinav	Reading books
F103	Jyotsna	Dancing

Now, Kunal wants to delete the 'Hobbies' column. Write the MySQL statement.

	Ans	`ALTER TABLE Friends DROP Hobbies;`
		OR
		`ALTER TABLE Friends DROP COLUMN Hobbies;`	

		(½ mark for ALTER TABLE) *(½ mark for DROP Hobbies)* *OR* *(½ mark for just mentioning ALTER TABLE command)*	
(d)		Mrs. Sen entered the following SQL statement to display all Salespersons of the cities "Chennai" and 'Mumbai' from the table 'Sales'. Table :Sales	1

Scode	Name	City
101	Aakriti	Mumbai
102	Aman	Punjab
103	Banit	Delhi
104	Fauzia	Mumbai

```
SELECT * FROM Sales
WHERE City='Chennai'
AND City='Mumbai';
```
Rewrite the correct statement if wrong or write statement is correct.

Ans	`SELECT * FROM Sales`
	`WHERE City='Chennai'`
	`OR City='Mumbai';`
	OR
	`SELECT * FROM Sales`
	`WHERE City='Chennai'|| City='Mumbai';`
	OR
	`SELECT * FROM Sales`
	`WHERE City IN ('Chennai', 'Mumbai');`	

		(1 mark for correct SQL statement) *Note : ½ mark to be allotted if only error is identified.*	
	(e)	i) Name 2 Aggregate (Group) functions of SQL.	2
		`SUM(), MAX(), MIN(), AVG() ,COUNT(), COUNT(*)` (Any Two)	
		(½ mark each for any 2 Group functions) *Note : Function names without parentheses also to be accepted as correct answers.*	
		ii) Consider the table:	

Table: Company

SID	SALES
S101	20000
S103	NULL
S104	10000
S105	15000

What output will be displayed by the following SQL statement?
`SELECT  AVG(SALES) FROM Company;`

	Ans	15000	
		(1 mark for correct answer)	
	(f)	Given below is the 'Stu' table:	2

RNO	NAME
1	Amit
2	Bhishm

The following Statements are entered:
```
SET AUTOCOMMIT = 0;
INSERT INTO Stu VALUES(5,'Rahul');
COMMIT;
UPDATE Stu set name='Rahuliya' where Rno= 5;
SAVEPOINT A;
INSERT INTO Stu VALUES(6,'Cristina');
SAVEPOINT B;
INSERT into Stu values(7,'Fauzia');
SAVEPOINT C;
ROLLBACK TO B;
```
Now what will be the output of the following statement:
`SELECT * FROM Stu;`

Ans		

RNO	NAME
1	Amit
2	Bhishm
5	Rahuliya
6	Cristina

(½ mark for each row)

	(g)	Consider the table 'Hotel' given below.	2

Table : Hotel

EMPID	Category	Salary
E101	MANAGER	60000
E102	EXECUTIVE	65000
E103	CLERK	40000
E104	MANAGER	62000
E105	EXECUTIVE	50000
E106	CLERK	35000

Mr. Vinay wanted to display average salary of each Category. He entered the following SQL statement. Identify error(s) and Rewrite the correct SQL statement.

```
SELECT Category, Salary
FROM Hotel
GROUP BY Category;
```

Ans

```
SELECT Category, AVG(Salary)
FROM Hotel
GROUP BY Category;
```

(2 marks for correct answer)
OR
(1 mark for only identifying error)

4	(a)	When is if-else if statement preferred over switch statement?	1

Ans
- When relational operators have to be used
- When range checks has to be done
- When data types other than int & char have to be used

(1 mark for any one correct point)

	(b)	What is the purpose of break statement?	1

Ans 'break' statement terminates the loop / switch and transfers control to the statement following the loop / switch .

(1 mark for correct answer)
Note : Full 1 mark to be allotted if "break terminates the loop / switch" is mentioned.

	(c)	What will be displayed in jTextField1 and jTextField2 after the following code is executed:	1

```
int t;
int s;
s = 2;
t = (4*s++)/2;
jTextField1.setText(" "+t);
jTextField2.setText(" "+s);
```

Ans 4 will be displayed in jTextField1
3 will be displayed in jTextField2

(½ mark for each correct answer)

| (d) | Write the contents of jTextField1, jTextField2, jTextField3 and jTextField4 when the following statements are executed :<br><br>```
 String x;
String str = "Java";
x = str.concat("study");
double a = 7.8765;
jTextField1.setText(x.length()+" ");
 jTextField2.setText(x.toUpperCase());
 jTextField3.setText(x.substring(2,5));
 jTextField4.setText(Math.round(7.8765)+" ");
``` | 2 |
| Ans | jTextField1: 9
jTextField2: JAVASTUDY
jTextField3: vas
jTextField4: 8
OR
9
JAVASTUDY
vas
8 | |
| | *(½   mark for each line of output)* | |
| (e) | Rewrite the following code using **WHILE** loop:<br><br>```
 int sum = 0;
for(int i=9;i>=1;i--)
{
   if(i%3==0)
      sum = sum + i;
   else
      sum = sum - i;
}
``` | 2 |
| Ans | ```
int sum = 0,  i= 9;
while (i>=1)
{
   if(i%3==0)
      sum = sum + i;
   else
    sum = sum - i;
 i--;
}
``` | |
| | *(½ mark for correct initialisation of i)*
(½ mark for correct condition)
(½ mark for correct loop body)
(½ mark for correct updation of i) | |
| (f) | The following code has error(s). Rewrite the correct code underlining all the corrections made :<br><br>```
int x = 10;
int y = 50;
``` | 2 |

|  |  | ```
do;
  {
    x+5 = x;
    y-5 = y;
  while ( x <= y );
``` |  |
|  | Ans | ```
int x = 10;
int y = 50;
    do
     {
        x= x+5;
        y = y-5;
     }
  while ( x <= y );
``` |  |
| | | *(½ mark for correcting each error)*
OR
(1 mark for only identifying any four errors) | |
| | (g) | Vijay has developed a software for planning personal budget. A screenshot of the same is shown below:

Total Income, Expenses of Bills (Water/Electricity), Groceries, Entertainment, other expenses and whether money is to be sent to Hostel are entered by the user. Sum of Expenses, Grand Total of Expenses and Savings are calculated and displayed by the program. Write the code to do the following :
i. When 'CALCULATE' button is clicked, Sum of Expenses, Total Expenses and Savings should be calculated and displayed in appropriate text fields.

● Sum of Expenses is calculated by adding expenses on Bills(Water/Electricity), Groceries, Entertainment and other expenses. | 3 |

		● Grand Total of Expenses is calculated according to the following criteria: If 'Money to be sent to Hostel' checkbox is selected, 3000.00 is to be added to the sum of expenses. If it is not selected, Grand Total of Expenses is the same as sum of expenses. ● Savings = Total Income – Grand Total of Expenses.	

	Ans	//Calculation of Sum of Expenses
		
		```jTextField6.setText("" +\nInteger.parseInt(jTextField2.getText()+\nInteger.parseInt(jTextField3.getText()+\nInteger.parseInt(jTextField4.getText()+\nInteger.parseInt(jTextField5.getText());```
		
		//Calculation of Grand Total of Expenses
		
		```if(jCheckBox1.isSelected())\n jTextField7.setText("" + 3000 +\n Integer.parseInt(jTextField6.getText()));\nelse\n jTextField7.setText("" +\n Integer.parseInt(jTextField6.getText()));```
		
		// Calculation of Savings
		
		```jTextField8.setText("" +\nInteger.parseInt(jTextField1.getText()) –\nInteger.parseInt(jTextField7.getText()));```	

		(1 mark for calculating and displaying 'Sum of Expenses') *(1 mark for correct use of if ...else statement)* *(½ mark for calculating and displaying 'Grand Total of expenses')* *(½ mark for calculating and displaying 'Savings')*	
	(ii)	When 'CLEAR' button is clicked, all text fields and checkbox should be cleared.	1
		```jTextField1.setText("");\njTextField2.setText("");\njTextField3.setText("");\njTextField4.setText("");\njTextField5.setText("");\njTextField6.setText("");\njTextField7.setText("");\njTextField8.setText("");\njCheckBox1.setSelected(false);```	
		(½ mark for clearing any text field) *(½ mark for clearing check box)* *Note : NULL in place of "" to be accepted for clearing text field.*	
	(iii)	When 'CLOSE' button is clicked, the application should close.	1
		```System.exit(0);```	

		(1 mark for correct answer)	
5	(a)	Anita has created the following table with the name 'Order'. Table: Order	2

Column Name	Constraint
OrderId	Primary Key
OrderDate	Not Null
OrderAmount	
StoreId	

One of the rows inserted is as follows :

OrderId	OrderDate	OrderAmount	StoreId
O101	2015-02-12	34000	S104

	i.	What is the data type of columns OrderId and OrderDate in the table Order ?	
	Ans	Data type of OrderId : `varchar/char` Data type of OrderDate : `date`	
		(½ mark each for each correct output)	
	ii.	Anita is now trying to insert the following row :	

OrderId	OrderDate	OrderAmount	StoreID
O102	NULL	59000	S105

Will she be able to successfully insert it? Give reason.

	Ans	(ii) No Reason – Not Null Constraint applied on attribute AnimalName	
		(½ mark for mentioning "NO") *(½ mark for mentioning correct reason)*	
	(b)	Write the output of the following SQL queries:	2
	(i)	`SELECT MID('BoardExamination', 2, 4)`	
	Ans	`oard`	
		(½ mark forcorrect output)	
	(ii)	`SELECT ROUND(67.246, 2)`	
	Ans	`67.25`	
		(½ mark for correct output)	
	(iii)	`SELECT INSTR('INFORMATIONFORM', 'FOR')`	
	Ans	`3`	
		(½ mark for correct output)	
	(iv)	`SELECT DAYOFYEAR('2015-01-10')`	
	Ans	`10`	
		(½ mark for correct output)	
	(c)	Write commands in SQL for (i) to (iv) and output for (v) and (vi).	**6**

Table: Store

StoreId	Name	Location	City	NoOfEmployees	DateOpened	SalesAmount
S101	Planetfashion	KarolBagh	Delhi	7	2015-10-16	300000
S102	Trends	Nehru Nagar	Mumbai	11	2015-08-09	400000
S103	Vogue	Vikas Vihar	Delhi	10	2015-06-27	200000
S104	Superfashion	Defence Colony	Delhi	8	2015-02-18	450000
S105	Rage	Bandra	Mumbai	5	2015-09-22	600000

(i) To display name, location, city, SalesAmount of stores in descending order of SalesAmount.

Ans
```
SELECT Name,Location,City, SaleAmount
FROM Store
ORDER BY SaleAmount desc;
```

(½ *mark for* SELECT)
(½ *mark for* ORDER BY)

(ii) To display names of stores along with SalesAmount of those stores that have 'fashion' anywhere in their store names.

Ans
```
SELECT Name,SalesAmount
FROM Store
WHERE Name like '%fashion%';
```

(½ *mark for* SELECT)
(½ *mark for condition*)

(iii) To display Stores names, Location and Date Opened of stores that were opened before 1st March 2015.

Ans
```
SELECT Name,Location,DateOpened
FROM Store
WHERE DateOpened <'03/01/2015';
OR
SELECT Name,Location,DateOpened
FROM Store
WHERE DateOpened <03012015;
```

(½ *mark for* SELECT)
(½ *mark for condition*)

(iv) To display total SalesAmount of each city along with city name.

Ans
```
SELECT SUM(SalesAmount),City
FROM Store
GROUP BY City;
```

(½ *mark for* SELECT)
(½ *mark for* GROUP BY *clause*)

	(v)	`SELECT distinct city FROM store;`	
	Ans		

City
Delhi
Mumbai

(1 mark for correct output)

	(vi)	`SELECT Name, length(name),left(name,3) FROM Store where NoOfEmployees<3;`	
	Ans	Empty Set OR No Output	

(1 mark for correct answer)

6	(a)	Write SQL query to create a table 'Event' with the following structure:	2

Field	Type	Constraint
EventId	Varchar(5)	PRIMARY KEY
EventName	Varchar(30)	NOT NULL
Location	Varchar(50)	
ClientID	Integer	
EventDate	Date	

Ans

```
CREATE TABLE Event
(
EventId VARCHAR(5) PRIMARY KEY,
EventName VARCHAR(30) NOT NULL,
Location VARCHAR(50),
ClientID INTEGER,
EventDate DATE
);
```

(½ Mark for CREATE TABLE)
(½ Mark for Column Names with Data Types)
(½ Mark for PRIMARY KEY Constraint)
(½ Mark for NOT NULL Constraint)

	(b)	Consider the tables given below.	2

Table:Faculty

TeacherId	Name	Address	State	PhoneNumber
T101	Savita Sharma	A-151, Adarsh Nagar	Delhi	991019564
T102	Deepak Ghai	K-5/52, Vikas Vihar	Mumbai	893466448
T103	MahaLakshmi	D-6	Delhi	981166568
T104	Simi Arora		Mumbai	658777564

Table:Course			
CourseId	**Subject**	**TeacherId**	**Fee**
C101	Introductory Mathematics	T101	4500
C103	Physics	T101	5000
C104	Introductory Computer Science	T102	4000
C105	Advance Computer Science	T104	6500

(i)	Which column is used to relate the two tables?	
Ans	TeacherId column is used to connect the two tables.	
	(1 mark for correct column name)	
(ii)	Is it possible to have a primary key and a foreign key both in one table? Justify your answer with the help of table given above.	
Ans	Yes. As in the Table:Course, CourseId can be used as Primary key and TeacherId is the foreign key.	
	(½ Mark for correct answer) *(½ Mark for correct justification)*	
(c)	With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii) :	6
(i)	To display CourseId,TeacherId, Name of Teacher, Phone Number of Teachers living in Delhi.	

Ans	`SELECT CourseId, TeacherId, Name, PhoneNumber`
	`FROM Course, Faculty`
	`WHERE Course.TeacherId = Faculty.TeacherId`
	`AND city = 'Delhi';`	

	(1 mark for correct use of `SELECT` *and* `FROM`*)* *(½ mark for each condition using* `WHERE` *clause)*	
(ii)	To display TeacherID, Names of Teachers, Subjects of all teachers with names of Teachers starting with 'S'.	

Ans	`SELECT TeacherId,Name,Subject FROM Faculty, Course`
	`WHERE Faculty.TeacherId = Course. TeacherId AND Name`
	`like 'S%;;`	

	(1 mark for correct use of SELECT and FROM) *(½ mark for each condition)*	
(iii)	`SELECT CourseId, Subject, TeacherId, Name, PhoneNumber FROM Faculty, Course WHERE Faculty.TeacherId = Course.TeacherId AND Fee >= 5000;`	
Ans		

CourseId	Subject	TeacherID	Name	PhoneNumber
C103	Physics	T101	Savita Sharma	991019564

CBSE AISSCE 2016 Marking Scheme for Informatics Practices
(Sub Code: 065 Paper Code 90/1 Delhi)

		C105	Advance Computer Science	T104	Simi Arora	658777564	

(1 mark for each line of correct output)

7	(a)	"In e-Business, customers should shop only when they trust the e-store provider for payment methods"- Justify the statement	1
	Ans	In e-business, security about the transaction being made by the customer is of utmost importance. A customer should ensure that information about his/her bank accounts, credit cards should not be available to unauthorized persons/e-stores as account may be hacked or money may get stolen/embezzled.	
		(1 mark for correct justification)	
	(b)	Which of the following statements is NOT true in e-Governance? Rewrite the statement after correcting it. (i) Online applications and tracking of status of applications should be provided. (ii) Citizens should not be required to submit documents in physical form. (iii) On line Forms should be made tricky so that only well educated users can enter data. (iv) Government should interact with citizens and enlighten them about different schemes through social media and web based platforms.	2
	Ans	(iii) Online Forms should be made so simple that all users can enter data	
		(1 mark for identifying (iii) as answer) *(1 mark for writing correct statement)* *OR* *(½ mark each for mentioning any one of (i), (ii) or (iv) as True)*	
	(c)	Ms. Arora is creating a form for accepting Visa applications. Help her to choose most appropriate controls out of ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries.	2

S.No.	Function
1	To enter EMAIL ID
2	To choose GENDER
3	To enter NATIONALITY from countries given as options.
4	To enter REMARKS in the form of a paragraph about the purpose of visit.

	Ans		

S.No.	Function	Control
1	To enter EMAIL ID	Text field
2	To choose GENDER	Radio Button

		3	To enter NATIONALITY from countries given as options.	Combobox		
		4	To enter REMARKS in the form of a paragraph about the purpose of visit.	Text Area		
		(½ mark for each answer)				