

SET – 4

Series : ONS/1

Code No. 90/1

Roll No.

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Candidates must write the Code on the title page of the answer-book.

- Please check that this question paper contains **8** printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains **7** questions.
- **Please write down the Serial Number of the question before attempting it.**
- 15 minute time has been allotted to read this question paper. The question paper will be distributed at 10.15 a.m. From 10.15 a.m. to 10.30 a.m., the students will read the question paper only and will not write any answer on the answer-book during this period.

INFORMATICS PRACTICES

Time allowed : 3 hours

Maximum marks : 70

Instructions :

- All questions are compulsory.*
- Answer the questions after carefully reading the text.*

- 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**
 - State reason why Star topology requires more cable length than Bus topology. **2**
 - “Open Source Software developers work for the good of community”. Is this statement true ? Give reason. **2**
 - What happens during ‘Domain Name Resolution’ ? **2**
 - How is ‘Denial of service’ attack, a threat to Network security ? **2**
- Identify the odd one out of the following statements. State reason for your choice. **1**
 - switch
 - do while
 - while
 - for

90/1

1

[P.T.O.]



- (b) What is the difference between setVisible() and setEnabled() methods ? **1**
- (c) What is the difference between the following statements (i) and (ii). **1**

- (i) a=5;
- (ii) if(a == 5)
x=3;

- (d) Write the output in jTextField1 if deocode is 3. **1**

```
switch (deocode)
{
    case 1 :
        allowance=4000;
        break;
    case 2 :
        allowance=3200;
        break;
    default :
        allowance=1000;
}
jTextField1.setText( " " +allowance);
```

- (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**
- (f) What does 'XML' stand for ? How is the purpose of HTML different from XML ? **2**
- (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**

3. (a) What is MySQL ? **1**

- (b) Charvi is inserting "Sharma" in the "LastName" column of the "Emp" table but an error is being displayed. Write the correct SQL statement. **1**

```
INSERT INTO Emp('Sharma')VALUES(LastName) ;
```

- (c) Kunal created the following table with the name 'Friends' : **1**

Table : Friends

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.

- (d) Mrs. Sen entered the following SQL statement to display all Salespersons of the cities "Chennai" and 'Mumbai' from the table 'Sales'. 1

Table : Sales

Scode	Name	City
101	Aakriti	Mumbai
102	Aman	Chennai
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.

- (e) (i) Name two Aggregate (Group) functions of SQL. 2
(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;
```

- (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;
```

- (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;
```

4. (a) When is if-else if statement preferred over switch statement ? 1
(b) What is the purpose of break statement ? 1
(c) What will be displayed in jTextField1 and jTextField2 after the following code is executed: 2

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

- (d) Write the contents of jTextField1, jTextField2, jTextField3 and jTextField4 when the following statements are executed : 2

```
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)+" ");
```

- (e) Rewrite the following code using WHILE loop : 2

```
int sum = 0;
for(int i=9;i>=1;i--)
{
    if(i%3==0)
        sum=sum + i;
    else
        sum=sum - i;
}
```

- (f) The following code has error(s). Rewrite the correct code underlining all the corrections made : 2

```
int x=10;
int y=50;
do;
{
    x+5=x;
    y-5=y;
while(x<=y);
```

- (g) Vijay has developed a software for planning personal budget. A screenshot of the same is shown below :

The screenshot shows a window titled "PERSONAL BUDGET PLAN". At the top, there is a label "Total Income" followed by an empty text input field. Below this is a section header "EXPENSES". Under "EXPENSES", there are four labels: "Bills(Water/Electricity)", "Groceries", "Entertainment", and "Other Expenses", each followed by an empty text input field. To the right of these input fields is a checkbox labeled "Money to be sent to Hostel". Below the input fields are three buttons: "CALCULATE", "CLEAR", and "CLOSE". At the bottom of the window, there are three labels: "SUM OF EXPENSES", "GRAND TOTAL OF EXPENSES", and "SAVINGS", each followed by an empty text input field.

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

- 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.

(ii) When 'CLEAR' button is clicked, all text fields and checkbox should be cleared. 1

(iii) When 'CLOSE' button is clicked, the application should close. 1

5. (a) Anita has created the following table with the name 'Order'. 2

Table : Order

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 ?

(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.

(b) Write the output of the following SQL queries : 2

(i) `SELECT MID('BoardExamination', 2, 4);`

(ii) `SELECT ROUND(67.246, 2);`

(iii) `SELECT INSTR('INFORMATION FORM', 'FOR');`

(iv) `SELECT DAYOFYEAR('2015-01-10');`

(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

- To display name, location, city, SalesAmount of stores in descending order of SalesAmount.
- To display names of stores along with SalesAmount of those stores that have 'fashion' anywhere in their store names.
- To display Stores names, Location and Date Opened of stores that were opened before 1st March, 2015.
- To display total SalesAmount of each city along with city name.
- SELECT distinct city FROM store;
- SELECT Name, length (name), left (name, 3) FROM Store where NoOfEmployees<3;

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	

(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

- Which column is used to relate the two tables ?
- 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.

90/1

7

[P.T.O.]



(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.

(ii) To display TeacherID, Names of Teachers, Subjects of all teachers with names of Teachers starting with 'S'.

(iii) `SELECT CourseId, Subject, TeacherId, Name, PhoneNumber FROM Faculty, Course WHERE Faculty.TeacherId = Course.TeacherId AND Fee >= 5000;`

7. (a) "In e-Business, customers should shop only when they trust the e-store provider for payment methods"-Justify the statement. 1

(b) Which of the following statements is NOT true in e-Governance ? Rewrite the statement after correcting it. 2

(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) Online 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.

(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 CommandButton 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.

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	
		<i>(1 mark each for each correct answer)</i>	
	(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.	
		<i>(2 marks for correct answer)</i> <i>Note : Full 2 marks to be allotted if reason represented with the help of diagram</i>	
	(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. <ul style="list-style-type: none"> ● 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.	

CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

		<i>(1 mark for stating 'Yes')</i> <i>(1 mark for correct reason)</i>	
	(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.	
		<i>(2 marks for correct answer)</i> <i>Note : Full 2 marks to be allotted if reason is represented with the help of example.</i>	
	(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.	
		<i>(2 marks for correct answer)</i> <i>Note : 1½ mark for only stating what is DoS .</i>	
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.	
		<i>(½ mark for identifying)</i> <i>(½ mark for reason)</i>	
	(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.	
		<i>(1 mark for correct answer)</i> <i>Note : Full 1 mark to be allotted if difference explained with the help of example.</i>	
	(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.	
		<i>(1 mark for mentioning correct difference)</i>	
	(d)	Write the output in jTextField1 if decode is 3.	1

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(Sub Code: 065 Paper Code 90/1 Delhi)

		<pre> switch (depcode) { case 1 : allowance = 4000; break; case 2 : allowance = 3200; break; default : allowance = 1000; } jTextField1.setText(" "+allowance); </pre>	
	Ans	1000	
		<i>(1 mark for correct answer)</i>	
	(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.	
		<i>(2 marks for correct answer)</i>	
	(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.	
		<i>(1 mark for expanding XML)</i> <i>(1 mark for correct difference)</i> <i>Note : Full 1 mark to be allotted if purpose of only HTML is specified.</i>	
	(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	<pre> int Y; Y = 30; Y = Y + 5; Z = Y; </pre>	
		<i>(½ mark for declaring Y)</i> <i>(½ mark for initialising Y to 30)</i> <i>(½ mark for incrementing the value of Y)</i> <i>(½ mark for assigning the final value to Z)</i>	
3	(a)	What is MySQL?	1
	Ans	MySQL is a Relational Database Management System.	
		<i>(1 mark for correct answer)</i>	

CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

		<p>Note: ½ mark to be awarded if only ‘Open Source Software’ is mentioned</p>																
	(b)	<p>Charvi is inserting "Sharma" in the "LastName" column of the "Emp" table but an error is being displayed. Write the correct SQL statement.</p> <p style="text-align: center;"><code>INSERT INTO Emp ('Sharma') VALUES (Lastname) ;</code></p>	1															
	Ans	<code>INSERT INTO Emp (Lastname) VALUES ('Sharma') ;</code>																
		<i>(1 mark for correct answer)</i>																
	(c)	<p>Kunal created the following table with the name ‘Friends’:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>FriendCode</th> <th>Name</th> <th>Hobbies</th> </tr> </thead> <tbody> <tr> <td>F101</td> <td>Bijoy</td> <td>Swimming</td> </tr> <tr> <td>F102</td> <td>Abhinav</td> <td>Reading books</td> </tr> <tr> <td>F103</td> <td>Jyotsna</td> <td>Dancing</td> </tr> </tbody> </table> <p>Now, Kunal wants to delete the ‘Hobbies’ column. Write the MySQL statement.</p>	FriendCode	Name	Hobbies	F101	Bijoy	Swimming	F102	Abhinav	Reading books	F103	Jyotsna	Dancing	1			
FriendCode	Name	Hobbies																
F101	Bijoy	Swimming																
F102	Abhinav	Reading books																
F103	Jyotsna	Dancing																
	Ans	<p><code>ALTER TABLE Friends DROP Hobbies;</code> OR <code>ALTER TABLE Friends DROP COLUMN Hobbies;</code></p>																
		<p><i>(½ mark for ALTER TABLE)</i> <i>(½ mark for DROP Hobbies)</i> OR <i>(½ mark for just mentioning ALTER TABLE command)</i></p>																
	(d)	<p>Mrs. Sen entered the following SQL statement to display all Salespersons of the cities "Chennai" and ‘Mumbai’ from the table ‘Sales’.</p> <p>Table :Sales</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Scode</th> <th>Name</th> <th>City</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Aakriti</td> <td>Mumbai</td> </tr> <tr> <td>102</td> <td>Aman</td> <td>Punjab</td> </tr> <tr> <td>103</td> <td>Banit</td> <td>Delhi</td> </tr> <tr> <td>104</td> <td>Fauzia</td> <td>Mumbai</td> </tr> </tbody> </table> <p><code>SELECT * FROM Sales WHERE City='Chennai' AND City='Mumbai';</code> Rewrite the correct statement if wrong or write statement is correct.</p>	Scode	Name	City	101	Aakriti	Mumbai	102	Aman	Punjab	103	Banit	Delhi	104	Fauzia	Mumbai	1
Scode	Name	City																
101	Aakriti	Mumbai																
102	Aman	Punjab																
103	Banit	Delhi																
104	Fauzia	Mumbai																
	Ans	<p><code>SELECT * FROM Sales WHERE City='Chennai' OR City='Mumbai';</code> OR <code>SELECT * FROM Sales WHERE City='Chennai' City='Mumbai';</code> OR <code>SELECT * FROM Sales WHERE City IN ('Chennai', 'Mumbai');</code></p>																

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(Sub Code: 065 Paper Code 90/1 Delhi)

		<p><i>(1 mark for correct SQL statement)</i> <i>Note : ½ mark to be allotted if only error is identified.</i></p>											
	(e)	i) Name 2 Aggregate (Group) functions of SQL.	2										
		SUM(), MAX(), MIN(), AVG(), COUNT(), COUNT(*) (Any Two)											
		<i>(½ mark each for any 2 Group functions)</i> <i>Note : Function names without parentheses also to be accepted as correct answers.</i>											
		ii) Consider the table: <div style="text-align: center;"> <p>Table: Company</p> <table border="1" style="margin: auto;"> <thead> <tr> <th>SID</th> <th>SALES</th> </tr> </thead> <tbody> <tr> <td>S101</td> <td>20000</td> </tr> <tr> <td>S103</td> <td>NULL</td> </tr> <tr> <td>S104</td> <td>10000</td> </tr> <tr> <td>S105</td> <td>15000</td> </tr> </tbody> </table> </div> <p>What output will be displayed by the following SQL statement? SELECT AVG(SALES) FROM Company;</p>	SID	SALES	S101	20000	S103	NULL	S104	10000	S105	15000	
SID	SALES												
S101	20000												
S103	NULL												
S104	10000												
S105	15000												
	Ans	15000											
		<i>(1 mark for correct answer)</i>											
	(f)	Given below is the 'Stu' table: <div style="text-align: center;"> <table border="1" style="margin: auto;"> <thead> <tr> <th>RNO</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Amit</td> </tr> <tr> <td>2</td> <td>Bhishm</td> </tr> </tbody> </table> </div> <p>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;</p>	RNO	NAME	1	Amit	2	Bhishm	2				
RNO	NAME												
1	Amit												
2	Bhishm												
	Ans	<table border="1" style="margin: auto;"> <thead> <tr> <th>RNO</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Amit</td> </tr> <tr> <td>2</td> <td>Bhishm</td> </tr> <tr> <td>5</td> <td>Rahuliya</td> </tr> <tr> <td>6</td> <td>Cristina</td> </tr> </tbody> </table>	RNO	NAME	1	Amit	2	Bhishm	5	Rahuliya	6	Cristina	
RNO	NAME												
1	Amit												
2	Bhishm												
5	Rahuliya												
6	Cristina												
		<i>(½ mark for each row)</i>											
	(g)	Consider the table 'Hotel' given below.	2										

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(Sub Code: 065 Paper Code 90/1 Delhi)

		<p>Table : Hotel</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">EMPID</th> <th style="text-align: center;">Category</th> <th style="text-align: center;">Salary</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">E101</td> <td style="text-align: center;">MANAGER</td> <td style="text-align: center;">60000</td> </tr> <tr> <td style="text-align: center;">E102</td> <td style="text-align: center;">EXECUTIVE</td> <td style="text-align: center;">65000</td> </tr> <tr> <td style="text-align: center;">E103</td> <td style="text-align: center;">CLERK</td> <td style="text-align: center;">40000</td> </tr> <tr> <td style="text-align: center;">E104</td> <td style="text-align: center;">MANAGER</td> <td style="text-align: center;">62000</td> </tr> <tr> <td style="text-align: center;">E105</td> <td style="text-align: center;">EXECUTIVE</td> <td style="text-align: center;">50000</td> </tr> <tr> <td style="text-align: center;">E106</td> <td style="text-align: center;">CLERK</td> <td style="text-align: center;">35000</td> </tr> </tbody> </table> <p>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.</p> <pre>SELECT Category, Salary FROM Hotel GROUP BY Category;</pre>	EMPID	Category	Salary	E101	MANAGER	60000	E102	EXECUTIVE	65000	E103	CLERK	40000	E104	MANAGER	62000	E105	EXECUTIVE	50000	E106	CLERK	35000	
EMPID	Category	Salary																						
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E105	EXECUTIVE	50000																						
E106	CLERK	35000																						
	Ans	<pre>SELECT Category, AVG(Salary) FROM Hotel GROUP BY Category;</pre>																						
		<i>(2 marks for correct answer)</i> OR <i>(1 mark for only identifying error)</i>																						
4	(a)	When is if-else if statement preferred over switch statement?	1																					
	Ans	<ul style="list-style-type: none"> ● 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 																						
		<i>(1 mark for any one correct point)</i>																						
	(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 .																						
		<i>(1 mark for correct answer)</i> 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																					
		<pre>int t; int s; s = 2; t = (4*s++) / 2; jTextField1.setText(" "+t); jTextField2.setText(" "+s);</pre>																						
	Ans	4 will be displayed in jTextField1 3 will be displayed in jTextField2																						
		<i>(½ mark for each correct answer)</i>																						

CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

(d)	<p>Write the contents of jTextField1, jTextField2, jTextField3 and jTextField4 when the following statements are executed :</p> <pre>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)+" ");</pre>	2
Ans	<pre>jTextField1: 9 jTextField2: JAVASTUDY jTextField3: vas jTextField4: 8 OR 9 JAVASTUDY vas 8</pre>	
	<i>(½ mark for each line of output)</i>	
(e)	<p>Rewrite the following code using WHILE loop:</p> <pre>int sum = 0; for(int i=9;i>=1;i--) { if(i%3==0) sum = sum + i; else sum = sum - i; }</pre>	2
Ans	<pre>int sum = 0, i= 9; while (i>=1) { if(i%3==0) sum = sum + i; else sum = sum - i; i--; }</pre>	
	<p><i>(½ mark for correct initialisation of i)</i> <i>(½ mark for correct condition)</i> <i>(½ mark for correct loop body)</i> <i>(½ mark for correct updation of i)</i></p>	
(f)	<p>The following code has error(s). Rewrite the correct code underlining all the corrections made :</p> <pre>int x = 10; int y = 50;</pre>	2

CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

		<pre>do; { x+5 = x; y-5 = y; while (x <= y);</pre>	
Ans		<pre>int x = 10; int y = 50; do { x= x+5; y = y-5; } while (x <= y);</pre>	
		<p><i>(½ mark for correcting each error)</i> OR <i>(1 mark for only identifying any four errors)</i></p>	
(g)		<p>Vijay has developed a software for planning personal budget. A screenshot of the same is shown below:</p> <div style="border: 1px solid #ccc; padding: 10px; background-color: #f0f0f0; margin: 10px auto; width: 80%;"> <div style="text-align: center; border: 1px solid #ccc; padding: 2px; margin-bottom: 5px;">PERSONAL BUDGET PLAN</div> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Total Income <input style="width: 100%;" type="text"/></p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 5px; text-align: center;">EXPENSES</div> <p>Bills(Water/Electricity) <input style="width: 100%;" type="text"/></p> <p>Groceries <input style="width: 100%;" type="text"/></p> <p>Entertainment <input style="width: 100%;" type="text"/></p> <p>Other Expenses <input style="width: 100%;" type="text"/></p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> CALCULATE CLEAR CLOSE </div> <p>SUM OF EXPENSES <input style="width: 100%;" type="text"/></p> <p>GRAND TOTAL OF EXPENSES <input style="width: 100%;" type="text"/></p> <p>SAVINGS <input style="width: 100%;" type="text"/></p> </div> <div style="width: 50%; padding-left: 10px;"> <p><input type="checkbox"/> Money to be sent to Hostel</p> </div> </div> </div> <p>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 :</p> <p>i. When 'CALCULATE' button is clicked, Sum of Expenses, Total Expenses and Savings should be calculated and displayed in appropriate text fields.</p> <ul style="list-style-type: none"> • Sum of Expenses is calculated by adding expenses on Bills(Water/Electricity), Groceries, Entertainment and other expenses. 	3

CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

	<ul style="list-style-type: none"> • 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	<pre>//Calculation of Sum of Expenses jTextField6.setText("" + Integer.parseInt(jTextField2.getText()+ Integer.parseInt(jTextField3.getText()+ Integer.parseInt(jTextField4.getText()+ Integer.parseInt(jTextField5.getText())); //Calculation of Grand Total of Expenses if(jCheckBox1.isSelected()) jTextField7.setText("" + 3000 + Integer.parseInt(jTextField6.getText())); else jTextField7.setText("" + Integer.parseInt(jTextField6.getText())); // Calculation of Savings jTextField8.setText("" + Integer.parseInt(jTextField1.getText()) - Integer.parseInt(jTextField7.getText()));</pre>	
	<p><i>(1 mark for calculating and displaying 'Sum of Expenses')</i> <i>(1 mark for correct use of if ...else statement)</i> <i>(½ mark for calculating and displaying 'Grand Total of expenses')</i> <i>(½ mark for calculating and displaying 'Savings')</i></p>	
(ii)	When 'CLEAR' button is clicked, all text fields and checkbox should be cleared.	1
	<pre>jTextField1.setText(""); jTextField2.setText(""); jTextField3.setText(""); jTextField4.setText(""); jTextField5.setText(""); jTextField6.setText(""); jTextField7.setText(""); jTextField8.setText(""); jCheckBox1.setSelected(false);</pre>	
	<p><i>(½ mark for clearing any text field)</i> <i>(½ mark for clearing check box)</i> Note : NULL in place of "" to be accepted for clearing text field.</p>	
(iii)	When 'CLOSE' button is clicked, the application should close.	1
	<pre>System.exit(0);</pre>	

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(Sub Code: 065 Paper Code 90/1 Delhi)

		(1 mark for correct answer)																			
5	(a)	<p>Anita has created the following table with the name 'Order'. Table: Order</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Column Name</th> <th style="text-align: center;">Constraint</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">OrderId</td> <td style="text-align: center;">Primary Key</td> </tr> <tr> <td style="text-align: center;">OrderDate</td> <td style="text-align: center;">Not Null</td> </tr> <tr> <td style="text-align: center;">OrderAmount</td> <td></td> </tr> <tr> <td style="text-align: center;">StoreId</td> <td></td> </tr> </tbody> </table> <p>One of the rows inserted is as follows :</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">OrderId</th> <th style="text-align: center;">OrderDate</th> <th style="text-align: center;">OrderAmount</th> <th style="text-align: center;">StoreId</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">O101</td> <td style="text-align: center;">2015-02-12</td> <td style="text-align: center;">34000</td> <td style="text-align: center;">S104</td> </tr> </tbody> </table>	Column Name	Constraint	OrderId	Primary Key	OrderDate	Not Null	OrderAmount		StoreId		OrderId	OrderDate	OrderAmount	StoreId	O101	2015-02-12	34000	S104	2
Column Name	Constraint																				
OrderId	Primary Key																				
OrderDate	Not Null																				
OrderAmount																					
StoreId																					
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 : <code>varchar/char</code> Data type of OrderDate : <code>date</code>																			
		<i>(½ mark each for each correct output)</i>																			
	ii.	<p>Anita is now trying to insert the following row :</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">OrderId</th> <th style="text-align: center;">OrderDate</th> <th style="text-align: center;">OrderAmount</th> <th style="text-align: center;">StoreID</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">O102</td> <td style="text-align: center;">NULL</td> <td style="text-align: center;">59000</td> <td style="text-align: center;">S105</td> </tr> </tbody> </table> <p>Will she be able to successfully insert it? Give reason.</p>	OrderId	OrderDate	OrderAmount	StoreID	O102	NULL	59000	S105											
OrderId	OrderDate	OrderAmount	StoreID																		
O102	NULL	59000	S105																		
	Ans	(ii) No Reason - Not Null Constraint applied on attribute AnimalName																			
		<i>(½ mark for mentioning "NO")</i> <i>(½ mark for mentioning correct reason)</i>																			
	(b)	Write the output of the following SQL queries:	2																		
	(i)	SELECT MID('BoardExamination', 2, 4)																			
	Ans	oard																			
		<i>(½ mark for correct output)</i>																			
	(ii)	SELECT ROUND(67.246, 2)																			
	Ans	67.25																			
		<i>(½ mark for correct output)</i>																			
	(iii)	SELECT INSTR('INFORMATIONFORM', 'FOR')																			
	Ans	3																			
		<i>(½ mark for correct output)</i>																			
	(iv)	SELECT DAYOFYEAR('2015-01-10')																			
	Ans	10																			
		<i>(½ mark for correct output)</i>																			
	(c)	Write commands in SQL for (i) to (iv) and output for (v) and (vi).	6																		



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(Sub Code: 065 Paper Code 90/1 Delhi)

		Table: Store					
StoreId	Name	Location	City	NoOfEmplo yees	DateOpened	SalesAmc unt	
S101	Planetfash ion	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	Superfashi on	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;
	<i>(½ mark for SELECT) (½ mark for ORDER BY)</i>
(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%';
	<i>(½ mark for SELECT) (½ mark for condition)</i>
(iii)	To display Stores names, Location and Date Opened of stores that were opened before 1 st March 2015.
Ans	SELECT Name,Location,DateOpened FROM Store WHERE DateOpened <'03/01/2015' ; OR SELECT Name,Location,DateOpened FROM Store WHERE DateOpened <03012015;
	<i>(½ mark for SELECT) (½ mark for condition)</i>
(iv)	To display total SalesAmount of each city along with city name.
Ans	SELECT SUM(SalesAmount) ,City FROM Store GROUP BY City;
	<i>(½ mark for SELECT) (½ mark for GROUP BY clause)</i>



CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

	(v)	SELECT distinct city FROM store;																										
	Ans	<table border="1" style="margin-left: 20px;"> <tr><td>City</td></tr> <tr><td>Delhi</td></tr> <tr><td>Mumbai</td></tr> </table>	City	Delhi	Mumbai																							
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)	<p>Write SQL query to create a table 'Event' with the following structure:</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Field</th> <th>Type</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>EventId</td> <td>Varchar(5)</td> <td>PRIMARY KEY</td> </tr> <tr> <td>EventName</td> <td>Varchar(30)</td> <td>NOT NULL</td> </tr> <tr> <td>Location</td> <td>Varchar(50)</td> <td></td> </tr> <tr> <td>ClientID</td> <td>Integer</td> <td></td> </tr> <tr> <td>EventDate</td> <td>Date</td> <td></td> </tr> </tbody> </table>	Field	Type	Constraint	EventId	Varchar(5)	PRIMARY KEY	EventName	Varchar(30)	NOT NULL	Location	Varchar(50)		ClientID	Integer		EventDate	Date		2							
Field	Type	Constraint																										
EventId	Varchar(5)	PRIMARY KEY																										
EventName	Varchar(30)	NOT NULL																										
Location	Varchar(50)																											
ClientID	Integer																											
EventDate	Date																											
	Ans	<pre>CREATE TABLE Event (EventId VARCHAR(5) PRIMARY KEY, EventName VARCHAR(30) NOT NULL, Location VARCHAR(50) , ClientID INTEGER, EventDate DATE);</pre>																										
		<p style="text-align: center;">(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)</p>																										
	(b)	<p>Consider the tables given below.</p> <p style="text-align: center;">Table:Faculty</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>TeacherId</th> <th>Name</th> <th>Address</th> <th>State</th> <th>PhoneNumber</th> </tr> </thead> <tbody> <tr> <td>T101</td> <td>Savita Sharma</td> <td>A-151, Adarsh Nagar</td> <td>Delhi</td> <td>991019564</td> </tr> <tr> <td>T102</td> <td>Deepak Ghai</td> <td>K-5/52, Vikas Vihar</td> <td>Mumbai</td> <td>893466448</td> </tr> <tr> <td>T103</td> <td>MahaLakshmi</td> <td>D-6</td> <td>Delhi</td> <td>981166568</td> </tr> <tr> <td>T104</td> <td>Simi Arora</td> <td></td> <td>Mumbai</td> <td>658777564</td> </tr> </tbody> </table>	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	2
TeacherId	Name	Address	State	PhoneNumber																								
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CBSE AISSCE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

		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.															
		<i>(1 mark for correct column name)</i>														
(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.															
		<i>(½ Mark for correct answer)</i> <i>(½ Mark for correct justification)</i>														
(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	<pre>SELECT CourseId, TeacherId, Name, PhoneNumber FROM Course, Faculty WHERE Course.TeacherId = Faculty.TeacherId AND city = 'Delhi' ;</pre>															
		<i>(1 mark for correct use of SELECT and FROM)</i> <i>(½ mark for each condition using WHERE clause)</i>														
(ii)	To display TeacherID, Names of Teachers, Subjects of all teachers with names of Teachers starting with 'S'.															
Ans	<pre>SELECT TeacherId,Name,Subject FROM Faculty, Course WHERE Faculty.TeacherId = Course. TeacherId AND Name like 'S%';</pre>															
		<i>(1 mark for correct use of SELECT and FROM)</i> <i>(½ mark for each condition)</i>														
(iii)	<pre>SELECT CourseId, Subject, TeacherId, Name, PhoneNumber FROM Faculty, Course WHERE Faculty.TeacherId = Course.TeacherId AND Fee >= 5000;</pre>															
Ans	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CourseId</th> <th>Subject</th> <th>TeacherID</th> <th>Name</th> <th>PhoneNumber</th> </tr> </thead> <tbody> <tr> <td>C103</td> <td>Physics</td> <td>T101</td> <td>Savita Sharma</td> <td>991019564</td> </tr> </tbody> </table>					CourseId	Subject	TeacherID	Name	PhoneNumber	C103	Physics	T101	Savita Sharma	991019564	
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											
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S.No.</th> <th style="width: 80%;">Function</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>To enter EMAIL ID</td> </tr> <tr> <td style="text-align: center;">2</td> <td>To choose GENDER</td> </tr> <tr> <td style="text-align: center;">3</td> <td>To enter NATIONALITY from countries given as options.</td> </tr> <tr> <td style="text-align: center;">4</td> <td>To enter REMARKS in the form of a paragraph about the purpose of visit.</td> </tr> </tbody> </table>					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.	
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	Ans	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S.No.</th> <th style="width: 55%;">Function</th> <th style="width: 35%;">Control</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>To enter EMAIL ID</td> <td>Text field</td> </tr> <tr> <td style="text-align: center;">2</td> <td>To choose GENDER</td> <td>Radio Button</td> </tr> </tbody> </table>					S.No.	Function	Control	1	To enter EMAIL ID	Text field	2	To choose GENDER	Radio Button		
S.No.	Function	Control															
1	To enter EMAIL ID	Text field															
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CBSE AISSEE 2016 Marking Scheme for Informatics Practices

(Sub Code: 065 Paper Code 90/1 Delhi)

		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)					

