

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 **11** 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 minutes 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

General Instructions :

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

- How do Computer networks reduce hardware costs of an organization ? Explain with the help of example. 2
 - Compare BUS topology with STAR topology. Give example. 2
 - Why is a switch called an intelligent hub ? 2
 - When is a repeater used in a computer network ?
 - Expand following term : 2
 - OSS
 - HTTP
 - Explain the term Firewall and Cyber Law. 2

2. (a) Write the value that will be assigned to variable `C` after executing the following statement : 1

`C = 25-5*4/2-10+4;`

- (b) Consider the statement : 1

`first_name = "Ayana";`

- (i) What is the datatype of `first_name` ?
- (ii) Is 325 the same as "321" ? Give reason.
- (c) Radhika changed the "Text" property of a Checkbox named `jCheckBox1` to "Reading". What change (if any) will be reflected in its name property ? 1
- (d) Ariya has typed the following comments. Write the comments using another way. 1

`//This is a comment spreading`

`//over two lines`

- (e) Given below is HTML code. Rewrite the correct code underlining all the corrections done. 2

`<ol type = "A" start="D">`

`<li>Bake in oven for an hour`

`<li>Remove from oven`

`<li>Serve`

- (f) Explain the meaning of the following statement with the help of example. 2

"Tags are not predefined in XML"

- (g) Name two properties and two methods that are common in `(jTextField)` and `jLabel`. 2

3. (a) What is the relationship between SQL and MySQL ? 1

(b) Write SQL statement that gives the same output as the following SQL statement but uses 'IN' keyword. 1

```
SELECT NAME FROM STUDENT WHERE STATE = 'VA' ;
```

(c) Which one of the following SQL queries will display all Employee records containing the word "Amit", regardless of case (whether it was stored as AMIT, Amit, or amit etc.) ? 1

(i) `SELECT * from Employees WHERE EmpName like UPPER '%AMIT%';`

(ii) `SELECT *from Employees WHERE EmpName like '%AMIT%' or '%AMIT%' OR '%amit%';`

(iii) `SELECT * from Employees WHERE UPPER (EmpName) like '%AMIT%';`

(d) If there are 10 rows in 'Emp' table and 5 rows in 'Department' table, how many rows will be displayed by the following query ? 1

```
SELECT * FROM Emp, Department;
```

Write the term used for the join being used on the two tables mentioned above.

(e) Kunal has entered the following SQL command on Table 'STUDENT' that has TotalMarks as one of the columns. 2

```
SELECT COUNT (*) FROM STUDENT;
```

The output displayed is 20.

Then, Kunal enters the following command :

```
SELECT COUNT (*) FROM STUDENT WHERE TotalMarks <100;
```

The output displayed is 15.

Then, Kunal enters the following command :

```
SELECT COUNT (*) FROM STUDENT WHERE TotalMarks >= 100;
```

He predicts the output of the above query as 5. Do you agree with Kunal ? Give reason for your answer.

- (f) In a hospital, patients are allocated to wards. A database named 'Hospital' is created. One table in this database is : WARD with WardId, WardName, NumOfBeds as columns and WardId as the primary key. 2

Write another suitable table you could expect to see in 'Hospital' database, with 3 suitable columns identifying Primary key and Foreign key.

- (g) Given below is the 'Department' table : 2

DEPCODE	DEPNAME
101	ADMIN
102	RECEPTION
103	PERSONNEL

```
SET AUTOCOMMIT = 0;
```

```
UPDATE Department SET DEPNAME = 'OFFICE' WHERE DEPNAME =  
'ADMIN';
```

```
INSERT INTO Department VALUES (104, 'HRD');
```

```
UPDATE Department SET DEPNAME = 'FRONT OFFICE' WHERE  
DEPNAME = 'RECEPTION';
```

```
COMMIT;
```

```
DELETE FROM Department WHERE DEPNAME = 'FRONT OFFICE';  
ROLLBACK;
```

```
SELECT * FROM Department;
```

What will be the output of the above given SELECT statement ?

4. (a) Write the values of c and d after execution of following code : 1

```
int a = 1;

int b = 2 ;

int c;

int d;

c = ++b;

d = a++;

c++;
```

- (b) What is the difference between `getSelectedIndex( )` and `getSelectedItem( )` methods ? 1

- (c) What will be displayed in `textField1` after the following code is executed ?
Also write how many times will the loop execute. 1

```
a = 5;

b = 2;

While (b !=0)

{

    r = a%b;

    a = b;

    b = r;

}

textField1.setText(" "+a);
```

- (d) Write the values that will be assigned to x, y, z and t after executing the following Java code : 2

```
String s1, s2, s3, x, y, z;

int t;

S1 = "classxii";

S2 = "cbseboard";

S3 = "                aisse2016                ";

x = s1.substring(5, 8);

y = s2.concat(s1);

z = s3.trim();

t = z.length();
```

- (e) Write the value that will be stored in variable num and sum after execution of following code : 2

```
int sum=0, num = -2;

do

{

sum = sum + num;

num++;

}

while (num < 1);
```

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

```
integer counter=0;

    for(num =i; num>=1; num--);

        {

            If i%num = 0

                {

                    counter = counter + 1;

                }

        }
```

(g) Ms. Angela works as a programmer in a Bus Tour Company named “Heritage Experiences”. Groups of people come and reserve seats. There are 3 stopovers for the bus. First stop is at Alwar, second at Jaipur, third at Udaipur. A group may choose any one destination out of Alwar, Jaipur and Udaipur.

Ms. Angela has designed a software to compute charges to be paid by the entire group. A screenshot of the same is shown below :

The screenshot shows a software window titled "Heritage Experiences". It contains the following elements:

- Organization / Group Name:** A text box containing "ABC and Company".
- Number of People in Group:** A text box containing "5".
- This Group is travelling to :** Three radio buttons for "Alwar", "Jaipur", and "Udaipur". The "Jaipur" radio button is selected.
- Frequent Traveller Group:** A checkbox that is checked.
- Buttons:** Three buttons labeled "Calculate Charges", "Clear", and "Exit".
- Results:** Three text boxes showing calculated values:
 - Total Charges :** 2500
 - Discount Amount :** 250.0
 - Amount to Pay :** 2250.0

A group can opt for one destination out of Alwar / Jaipur / Udaipur. If the group is “Frequent Traveller Group”, the group gets a 10% discount on Total charges.

Help Ms. Angela in writing the code to do the following :

- (i) After selecting appropriate Radio Button and checkbox (if required), when 'Calculate Charges' button is clicked, 'Total Charges', 'Discount Amount', 'Amount to Pay' should be calculated and displayed in the respective text fields. The Charges per person for various destinations are as follows :

4

Destination	Amount(in ₹)
Alwar	200.00 per person
Jaipur	500.00 per person
Udaipur	900.00 per person

'Total Charges' is obtained by multiplying 'Number of People in Group' with Amount per person.

If 'Frequent Traveller Group' checkbox is selected. 'Discount Amount' is calculated as 10% of 'Total Charges'. Otherwise 'Discount Amount' is 0.

'Amount to Pay' is calculated as :

Amount to Pay = Total Charges – Discount Amount.

- (ii) When 'CLEAR' button is clicked, all the textfields, radio button and checkbox should be cleared. 1
- (iii) When 'EXIT' button is clicked, the application should close. 1

5. Consider the table given below :

Write Answer to (i). Write SQL queries for (ii) to (viii) and output for SQL queries (ix) and (x).

(Table : Salesperson)

SID	Name	Phone	DOB	Salary	Area
S101	Amit Kumar	98101789654	1967-01-23	67000.00	North
S102	Deepika Sharma	99104567834	1992-09-23	32000.00	South
S103	Vinay Srivastav	98101546789	1991-06-27	35000.00	North
S104	Kumar Mehta	88675345789	1967-10-16	40000.00	East
S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South

Note : Columns SID and DOB contain Sales Person Id and Data of Birth respectively.

- (i) Write the data types of SID and DOB columns. 1
- (ii) Display names of Salespersons and their Salaries who have salaries in the range 30000.00 to 40000.00 1
- (iii) To list Names, Phone numbers and DOB (Date of Birth) of Salespersons who were born before 1st November, 1992. 1
- (iv) To display Names and Salaries of Salespersons in descending order of salary. 1
- (v) To display areas in which Salespersons are working. Duplicate Areas should not be displayed. 1
- (vi) To display SID, Names along with Salaries increased by 500. (Increase of ₹ 500 is only to be displayed and not to be updated in the table) 1
- (vii) To display Area along with number of Salespersons working in that area. 1
- (viii) To display Names of Salespersons who have the word 'Kumar' anywhere in their names. 1
- (ix) SELECT Name, LENGTH (Name) FROM Salesperson; 1
- (x) SELECT Area, COUNT (*) 1
FROM Salesperson
GROUP BY Area
HAVING COUNT (*) > 1;

6. (a) “ABC” Event Management Company requires data of events that are to be organized. Write SQL query to create a table ‘Event’ with the following structure :

2

Field	Type	Constraint
EventId	Integer	Primary key
Event	Varchar(50)	
DateEvent	Date	
NumPerformers	Integer	

- (b) Consider the tables given below and answer the questions that follow

Table : Workshop

WorkshopId	Title	NumSpeakers	MeantFor	Fee
551	Time Management	3	Senior Manager	7000
553	App Development	1	Computer Programmer	9000
554	Planning	2	Senior Manager	8000
556	Marketing Strategies	2	Junior Manager	9000

Table : Participant

ParticipantId	Name	WorkshopId
100	Prabhu Shankar	551
101	Dev Sen	554
102	Fauzia Khan	551
103	Tom Winters	553

- (i) WorkshopId ‘552’ is missing in the table workshop. Is there any discrepancy (something not correct) ? Give reason for your answer.
- (ii) WorkshopId ‘551’ is present twice in the table Participant. Is there any discrepancy ? Give reason for your answer.

1

1

(c) With reference to the above tables (in Q.6-(b)), write commands in SQL for (i) to (iii) given below : 6

- (i) To display names of Participants along with workshop titles for only those workshops that have more than 2 speakers.
- (ii) To display ParticipantId, Participant's name, WorkshopId for workshops meant for Senior Managers and Junior Managers.
- (iii) To display WorkshopId, title, ParticipantId for only those workshops that have fees in the range of 5000.00 to 8000.00

7. (a) (i) Define e-governance. 2
- (ii) List two advantages of e-governance to a disabled person. 2
- (b) How does E-business help organizations to provide better customer services ? 1
- (c) Ms. Fauzia is creating a form for an application to be used in a Gym. Help her to choose most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries : 2

S. No.	Function
1	To enter NAME
2	To enter EMAIL ID
3	To allow user to choose any one MEMBERSHIP DURATION out of 1 Month, 3 Months, 6 Months, 1 year.
4	To choose PRE-EXISTING MEDICAL CONDITIONS out of Diabetes, Heart Disease, Chest Paie, Shortness of Breath, Epilepsy, Others.

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

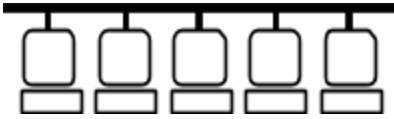
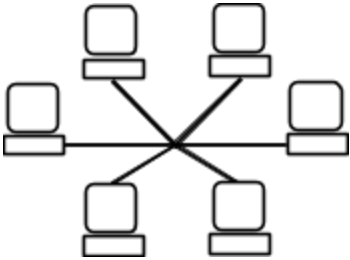
General Instructions:

- 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)
- 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)	How do Computer networks reduce hardware costs of an organization? Explain with the help of example.	2												
	Ans	Computer network allows sharing of hardware resources thereby reducing hardware costs of an organization. For example, a printer can be shared among the users in a network so that there's no need to have individual printers for each and every computer in the network.													
		<i>(1 mark for reason) (1 mark for example) NOTE : Full 2 marks to be allotted if reason explained with the help of any correct example.</i>													
	(b)	Compare BUS topology with STAR topology. Give example.	2												
	Ans	<table><tr><th>BUS topology</th><th>STAR topology</th></tr><tr><td>In Bus topology all the nodes are joined to one cable (the bus).</td><td>In Star topology each node has its own cable that connects to a switch or hub.</td></tr><tr><td>If the main cable (backbone) fails, the entire network is affected.</td><td>If the central hub/switch fails, the entire network fails.</td></tr><tr><td>Fault diagnosis is difficult.</td><td>Fault diagnosis is easy</td></tr><tr><td>Less cable length required.</td><td>More cable length is required</td></tr><tr><td>Performance is low as when more nodes are connected, data collisions can occur.</td><td>Performance is high as no data collisions can occur.</td></tr></table>	BUS topology	STAR topology	In Bus topology all the nodes are joined to one cable (the bus).	In Star topology each node has its own cable that connects to a switch or hub.	If the main cable (backbone) fails, the entire network is affected.	If the central hub/switch fails, the entire network fails.	Fault diagnosis is difficult.	Fault diagnosis is easy	Less cable length required.	More cable length is required	Performance is low as when more nodes are connected, data collisions can occur.	Performance is high as no data collisions can occur.	
BUS topology	STAR topology														
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		 Bus Topology of network  Star Topology of network	
		(1 mark each for ANY 2 correct points of comparison) NOTE : • Full 2 marks to be allotted even if example not given. • 1 ½ marks to be allotted if only diagrams of both topologies are drawn.	
	(c)	(i) Why is a switch called an intelligent hub? (ii) When is a repeater used in a computer network?	2
	Ans	(i) A switch is called an intelligent hub as it forwards the data packets only to the intended nodes. (ii) A repeater is used when the signals get weakened or distorted by transmission over long distances.	
		(1 mark each for each correct answer)	
	(d)	Expand following terms: (i) OSS (ii) HTTP	2
	Ans	(i) Open Source Software (ii) HyperText Transfer Protocol	
		(1 mark each for each expansion)	
	(e)	Explain the terms Firewall and Cyber Law.	2
	Ans	Firewall: A Firewall is a hardware/software that permits only authorised data to enter/leave the network. Cyber Law: Cyber Law is the law that deals with offences related to data /information stored on computers or networked devices/solutions.	
		(1 mark each for explanation of each term)	
2	(a)	Write the value that will be assigned to variable c after executing the following statement: $c = 25 - 5 * 4 / 2 - 10 + 4 ;$	1
	Ans	9	
		(1 mark for correct answer)	
	(b)	Consider the statement: <code>first_name = "Ayana";</code> (i) What is the datatype of first_name ? (ii) Is 325 the same as “321” ? Give reason.	1
	Ans	(i) String data type (ii) No, 325 is a Number/Integer while “321” is a String.	
		(½ mark for part (i)) (½ mark for stating ‘No’ OR correct reason OR Both)	

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	(c)	Radhika changed the “Text” property of a Checkbox named jCheckBox1 to “Reading”. What change (if any) will be reflected in its name property?	1
	Ans	No change will be reflected in its name property.	
		(1 mark for correct answer)	
	(d)	Ariya has typed the following comments. Write the comments using another way. //This is a comment spreading //over two lines	1
	Ans	/*This is a comment spreading over two lines or more */	
		(1 mark to be given if attempted correctly)	
	(e)	Given below is HTML code. Rewrite the correct code underlining all the corrections done. <code><ol type = "A" start="D"></code> <code>Bake in oven for an hour</code> <code>Remove from oven</code> <code>Serve</code>	2
	Ans	<code><ol type = "A" <u>start="4"</u>></code> <code>Bake in oven for an hour</code> <code>Remove from oven</code> <code>Serve</code> <code></code>	
		(1 Mark for each correction) OR (NOTE: 1 Mark for identifying the errors, without suggesting corrections)	
	(f)	Explain the meaning of the following statement with the help of example. “Tags are not predefined in XML”	2
	Ans	“Tags are not predefined in XML”. It means that there are no standard tags in XML and they are created by the user. Example : To store name , the tag <code><name></code> may be used as : <code><name> Amit </name></code> In the above example, <code><name></code> is not a standard tag. It has been created by the user.	
		(1 mark for correct explanation) (1 mark for example) NOTE: 1 mark to be allotted if only explanation is given without example.	
	(g)	Name two properties and two methods that are common in jTextField and JLabel.	2
	Ans	Properties: background, enabled, font, foreground, text Methods: <code>setBackground()</code> , <code>isEnabled()</code> , <code>setText()</code> , <code>getText()</code>	

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		<i>(½ mark each for mentioning any two correct properties and any two correct methods)</i>	
3	(a)	What is the relationship between SQL and MySQL?	1
	Ans	SQL stands for Structured Query Language. It's a standard language for accessing and manipulating databases. MySQL is a Relational Database Management System (RDBMS), like SQL Server, Oracle, Informix, Postgres, etc. MySQL is a RDBMS. OR Any other relevant difference.	
		<i>(1 mark for correct relationship)</i> NOTE: ½ mark each for correctly explaining SQL and MySQL	
	(b)	Write SQL statement that gives the same output as the following SQL statement but uses 'IN' keyword. <code>SELECT NAME FROM STUDENT WHERE STATE = 'VA';</code>	1
	Ans	<code>SELECT NAME FROM STUDENT WHERE STATE IN ('VA');</code>	
		<i>(1 mark for correct answer)</i>	
	(c)	Which one of the following SQL queries will display all Employee records containing the word "Amit", regardless of case (whether it was stored as AMIT, Amit, or amit etc.)? (i) <code>SELECT * from Employees WHERE EmpName like UPPER '%AMIT%';</code> (ii) <code>SELECT * from Employees WHERE EmpName like '%AMIT%' or '%AMIT%' OR '%amit%';</code> (iii) <code>SELECT * from Employees WHERE UPPER(EmpName) like '%AMIT%';</code>	1
	Ans	(iii) <code>SELECT * from Employees WHERE UPPER(EmpName) like '%AMIT%';</code>	
		<i>(1 mark for correct answer)</i>	
	(d)	If there are 10 rows in 'Emp' table and 5 rows in 'Department' table, How many rows will be displayed by the following query? <code>SELECT * FROM Emp, Department;</code> Write the term used for the Join being used on the two tables mentioned above.	1
	Ans	50 rows. Cartesian product or Cross join or Cartesian join	
		<i>(½ mark each for each part)</i>	
	(e)	Kunal has entered the following SQL command on Table 'STUDENT' that has TotalMarks as one of the columns. <code>SELECT COUNT(*) FROM STUDENT;</code> The output displayed is 20. Then, Kunal enters the following command: <code>SELECT COUNT(*) FROM STUDENT WHERE TotalMarks < 100;</code> The output displayed is 15.	2

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		Then, Kunal enters the following command: SELECT COUNT(*) FROM STUDENT WHERE TotalMarks >= 100; He predicts the output of the above query as 5. Do you agree with Kunal? Give reasons for your answer.									
	Ans	Yes, Total rows=20, rows with TotalMarks <100 is 15, so remaining rows left are 20-15=5 OR No, the output of the query may not always be 5 as there may be rows with TotalMarks as NULL which would have not been included in either of the two SELECT statements mentioned.									
		(2 marks for correct answer)									
	(f)	In a hospital, Patients are allocated to wards. A database named 'Hospital' is created. One table in this database is: WARD with WardId , WardName , NumOfBeds as columns and WardId as the primary key. Write another suitable table you could expect to see in 'Hospital' database, with 3 suitable columns identifying Primary key and Foreign key.	2								
	Ans	Example: Table - Patient Columns - PatientId, PatientName, WardId Patient Id - PRIMARY KEY WardId - FOREIGN KEY OR Any other suitable table mentioning its PRIMARY KEY and FOREIGN KEY .									
		(1 mark for writing any three suitable column names) OR (½ mark for writing any two suitable column names) (½ mark for mentioning the PRIMARY KEY) (½ mark for mentioning the FOREIGN KEY) NOTE : Tabular representation also to be accepted									
	(g)	Given below is the 'Department' table: <table><tr><th>DEPCODE</th><th>DEPNAME</th></tr><tr><td>101</td><td>ADMIN</td></tr><tr><td>102</td><td>RECEPTION</td></tr><tr><td>103</td><td>PERSONNEL</td></tr></table> SET AUTOCOMMIT = 0; UPDATE Department SET DEPNAME = 'OFFICE' WHERE DEPNAME = 'ADMIN' ; INSERT INTO Department VALUES (104, 'HRD') ; UPDATE Department SET DEPNAME = 'FRONT OFFICE' WHERE DEPNAME = 'RECEPTION' ; COMMIT; DELETE FROM Department WHERE DEPNAME = 'FRONT OFFICE' ; ROLLBACK; SELECT * FROM Department; What will be the output of the above given SELECT statement?	DEPCODE	DEPNAME	101	ADMIN	102	RECEPTION	103	PERSONNEL	2
DEPCODE	DEPNAME										
101	ADMIN										
102	RECEPTION										
103	PERSONNEL										

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	Ans	<table><tr><th>DEPCODE</th><th>DEPNAME</th></tr><tr><td>101</td><td>OFFICE</td></tr><tr><td>102</td><td>FRONT OFFICE</td></tr><tr><td>103</td><td>PERSONNEL</td></tr><tr><td>104</td><td>HRD</td></tr></table>	DEPCODE	DEPNAME	101	OFFICE	102	FRONT OFFICE	103	PERSONNEL	104	HRD	
DEPCODE	DEPNAME												
101	OFFICE												
102	FRONT OFFICE												
103	PERSONNEL												
104	HRD												
		(½ mark for each correct line of output)											
4	(a)	Write the values of c and d after execution of following code: <pre>int a = 1; int b = 2; int c; int d; c = ++b; d = a++; c++;</pre>	1										
	Ans	<pre>c = 4 d = 1</pre>											
		(½ mark for each correct part)											
	(b)	What is the difference between <code>getSelectedIndex()</code> and <code>getSelectedItem()</code> methods?	1										
	Ans	<code>getSelectedIndex()</code> retrieves index of selected item whereas <code>getSelectedItem()</code> retrieves selected item.											
		(1 mark for correct difference)											
	(c)	What will be displayed in <code>jTextField1</code> after the following code is executed ? Also write how many times will the loop execute. <pre>a = 5; b = 2; While (b != 0) { r = a%b; a = b; b = r; } jTextField1.setText(""+a);</pre>	1										
	Ans	<code>jTextField1</code> will display 1											
		(1 mark for correct answer) NOTE: 1 mark to be allotted if : ‘while’ mentioned as error OR ‘No output’ / ‘Error’ is mentioned											
	(d)	Write the values that will be assigned to x, y, z and t after executing the following Java code:	2										

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		<pre>String s1, s2, s3, x, y, z; int t; S1 = "classxii"; S2 = "cbseboard"; S3 = " aisse2016 "; x = s1.substring(5, 8); y = s2.concat(s1); z = s3.trim(); t = z.length();</pre>	
	Ans	<pre>x = xii y = cbseboardclassxii z = aisse2016 t=9</pre> NOTE: Full 2 marks to be allotted if : 'S1,S2,S3' or 's1,s2,s3' mentioned as error OR 'No output' / 'Error' is mentioned	
		<i>(½ mark for each correct value of variables)</i>	
	(e)	Write the value that will be stored in variable num and sum after execution of following code: <pre>int sum=0, num = -2; do { sum = sum + num; num++; } while (num < 1);</pre>	2
	Ans	<pre>num = 0 sum = -3</pre>	
		<i>(1 mark for each correct part)</i>	
	(f)	The following code has error(s). Rewrite the correct code underlining all the corrections made : <pre>integer counter=0; for(num =i; num>=1; num--); { If i%num = 0 { counter = counter + 1; } }</pre>	2
	Ans	<pre><u>int num;</u> <u>int i;</u> <u>int</u> counter=0; for(num =i; num>=1; num--)<u>semicolon deleted</u></pre>	

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		<pre> { if (i%num ==0) { counter = counter + 1; } } </pre>	
		<i>(½ mark each for correcting any 4 errors)</i> OR <i>(1 mark for only identifying any 4 errors - without making any corrections)</i>	
	(g)	Ms. Angela works as a programmer in a Bus Tour Company named “Heritage Experiences”. Groups of people come and reserve seats. There are 3 stopovers for the bus. First stop is at Alwar, second at Jaipur, third at Udaipur. A group may choose any one destination out of Alwar, Jaipur and Udaipur. Angela has designed a software to compute charges to be paid by the entire group. A screenshot of the same is shown below: A group can opt for one destination out of Alwar/ Jaipur/ Udaipur. If the group is “Frequent Traveller Group”, the group gets a 10% discount on Total charges. (i) Help Ms. Angela in writing the code to do the following: After selecting appropriate Radio Button and checkbox (if required), when ‘Calculate Charges’ button is clicked, ‘Total Charges’, ‘Discount Amount’, ‘Amount to Pay’ should be calculated and displayed in the respective text fields. The Charges per person for various destinations are as follows:	

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		<table><tr><th>Destination</th><th>Amount(in Rs.)</th></tr><tr><td>Alwar</td><td>200.00 per person</td></tr><tr><td>Jaipur</td><td>500.00 per person</td></tr><tr><td>Udaipur</td><td>900.00 per person</td></tr></table> ‘Total Charges’ is obtained by multiplying ‘Number of People in Group’ with Amount per person. If ‘Frequent Traveller Group’ checkbox is selected, ‘Discount Amount’ is calculated as 10% of ‘Total Charges’. Otherwise ‘Discount Amount’ is 0. ‘Amount to Pay’ is calculated as : Amount to Pay = Total Charges - Discount Amount.	Destination	Amount(in Rs.)	Alwar	200.00 per person	Jaipur	500.00 per person	Udaipur	900.00 per person	
Destination	Amount(in Rs.)										
Alwar	200.00 per person										
Jaipur	500.00 per person										
Udaipur	900.00 per person										
Ans	<pre>Double Total = 0; if (jRadioButton1.isSelected()) Total= 200* Integer.parseInt(jTextField2.getText()); else if (jRadioButton2.isSelected()) Total= 500* Integer.parseInt(jTextField2.getText()); else if (jRadioButton3.isSelected()) Total= 900* Integer.parseInt(jTextField2.getText()); jTextField3.setText("" + Total); double Disc, Net; if(jCheckBox1.isSelected()) Disc = 0.10* Integer.parseInt(jTextField3.getText()); else Disc = 0.0; jTextField4.setText(" "+Disc); Net = Total-Disc; jTextField5.setText(" "+net);</pre>										
	<i>(½ mark for use of getText())</i> <i>(½ mark each for checking conditions based on any 2 Radiobuttons and 1 Checkbox)</i> <i>(½ mark each for Calculation of Total, Disc and Net)</i> <i>(½ mark for displaying correct values in the text fields)</i>										
(ii)	When ‘CLEAR’ button is clicked, all the textfields, radio button and checkbox should be cleared.	1									
Ans	<pre>jTextField1.setText(""); jTextField2.setText(""); jTextField3.setText(""); jTextField4.setText(""); jTextField5.setText(""); jCheckBox1.setSelected(false); jRadioButton1.setSelected(false); jRadioButton2.setSelected(false); jRadioButton3.setSelected(false);</pre>										

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		(½ mark for clearing any TextField and ½ mark for clearing the Checkbox/Radiobutton) NOTE : NULL in place of “” to be accepted for clearing text field.																																					
	(iii)	When ‘EXIT’ button is clicked, the application should close.	1																																				
		System.exit(0) ;																																					
		(1 mark for correct answer)																																					
5	(a)	Consider the table given below. Write Answer to (i). Write SQL queries for (ii) to (viii) and output for SQL queries (ix) and (x). (Table: Salesperson) <table><tr><th>SID</th><th>Name</th><th>Phone</th><th>DOB</th><th>Salary</th><th>Area</th></tr><tr><td>S101</td><td>Amit Kumar</td><td>98101789654</td><td>1967-01-23</td><td>67000.00</td><td>North</td></tr><tr><td>S102</td><td>Deepika Sharma</td><td>99104567834</td><td>1992-09-23</td><td>32000.00</td><td>South</td></tr><tr><td>S103</td><td>Vinay Srivastav</td><td>98101546789</td><td>1991-06-27</td><td>35000.00</td><td>North</td></tr><tr><td>S104</td><td>Kumar Mehta</td><td>88675345789</td><td>1967-10-16</td><td>40000.00</td><td>East</td></tr><tr><td>S105</td><td>Rashmi Kumar</td><td>98101567434</td><td>1972-09-20</td><td>50000.00</td><td>South</td></tr></table> NOTE : Columns SID and DOB contain Sales Person Id and Data of Birth respectively.	SID	Name	Phone	DOB	Salary	Area	S101	Amit Kumar	98101789654	1967-01-23	67000.00	North	S102	Deepika Sharma	99104567834	1992-09-23	32000.00	South	S103	Vinay Srivastav	98101546789	1991-06-27	35000.00	North	S104	Kumar Mehta	88675345789	1967-10-16	40000.00	East	S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South	
SID	Name	Phone	DOB	Salary	Area																																		
S101	Amit Kumar	98101789654	1967-01-23	67000.00	North																																		
S102	Deepika Sharma	99104567834	1992-09-23	32000.00	South																																		
S103	Vinay Srivastav	98101546789	1991-06-27	35000.00	North																																		
S104	Kumar Mehta	88675345789	1967-10-16	40000.00	East																																		
S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South																																		
	(i)	Write the data types of SID and DOB columns.	1																																				
	Ans	Data type of SID : varchar/char Data type of DOB : Date																																					
		(½ mark each for mentioning correct data type)																																					
	(ii)	Display names of Salespersons and their Salaries who have salaries in the range 30000.00 to 40000.00	1																																				
	Ans	SELECT Name,Salary FROM Salesperson WHERE Salary BETWEEN 30000 AND 40000; OR SELECT Name,Salary FROM SalesPerson WHERE Salary>=30000 AND Salary<=40000;																																					
		(½ mark for SELECT) (½ mark for WHERE)																																					
	(iii)	To list names, phone numbers and DOB (Date of Birth) of Salespersons who were born before 1 st November, 1992.	1																																				
	Ans	SELECT Name,Phone,DOB FROM Salesperson WHERE DOB <‘1992-11-01’ ; OR SELECT Name,Phone,DOB FROM Salesperson WHERE DOB < 19921101;																																					

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		(½ mark for SELECT) (½ mark for condition using WHERE)													
	(iv)	To display names and salaries of salespersons in descending order of salary.	1												
	Ans	SELECT Name,Salary FROM Salesperson ORDER BY Salary DESC;													
		(½ mark for SELECT) (½ mark for ORDER BY)													
	(v)	To display areas in which Salespersons are working. Duplicate areas should not be displayed.	1												
		SELECT DISTINCT Area FROM Salesperson;													
		(½ mark for SELECT) (½ mark for keyword DISTINCT)													
	(vi)	To display SID, Names along with Salaries increased by 500. (Increase of Rs.500 is only to be displayed and not to be updated in the table)	1												
		SELECT SID, Name,Salary+500 FROM Salesperson;													
		(½ mark for SELECT) (½ mark for Salary+500)													
	(vii)	To display Area along with number of Salespersons working in that area.	1												
		SELECT Area, COUNT(*) OR COUNT(SID) FROM Salesperson GROUP BY Area;													
		(½ mark for SELECT) (½ mark for GROUP BY clause)													
	(viii)	To display Names of Salespersons who have the word ‘Kumar’ anywhere in their names.	1												
		SELECT Name FROM Salesperson WHERE Name LIKE '%Kumar%';													
		(½ mark for SELECT) (½ mark for LIKE Clause)													
	(ix)	SELECT Name, LENGTH(Name) FROM Salesperson;	1												
	Ans	<table><tr><td>Name</td><td>LENGTH (Name)</td></tr><tr><td>Amit Kumar</td><td>10</td></tr><tr><td>Deepika Sharma</td><td>14</td></tr><tr><td>Vinay Srivastav</td><td>15</td></tr><tr><td>Kumar Mehta</td><td>11</td></tr><tr><td>Rashmi Kumar</td><td>12</td></tr></table>	Name	LENGTH (Name)	Amit Kumar	10	Deepika Sharma	14	Vinay Srivastav	15	Kumar Mehta	11	Rashmi Kumar	12	
Name	LENGTH (Name)														
Amit Kumar	10														
Deepika Sharma	14														
Vinay Srivastav	15														
Kumar Mehta	11														
Rashmi Kumar	12														

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	(x)	SELECT Area, COUNT(*) FROM Salesperson GROUP BY Area HAVING COUNT(*) > 1;	1																									
	Ans	<table><tr><td>Area</td><td>COUNT (*)</td></tr><tr><td>North</td><td>2</td></tr><tr><td>South</td><td>2</td></tr></table>	Area	COUNT (*)	North	2	South	2																				
Area	COUNT (*)																											
North	2																											
South	2																											
		(½ mark each for each row)																										
6		“ABC” Event Management Company requires data of events that are to be organized. Write SQL query to create a table ‘Event’ with the following structure: <table><tr><td>Field</td><td>Type</td><td>Constraint</td></tr><tr><td>EventId</td><td>Integer</td><td>Primary key</td></tr><tr><td>Event</td><td>Varchar (50)</td><td></td></tr><tr><td>DateEvent</td><td>Date</td><td></td></tr><tr><td>NumPerformers</td><td>Integer</td><td></td></tr></table>	Field	Type	Constraint	EventId	Integer	Primary key	Event	Varchar (50)		DateEvent	Date		NumPerformers	Integer		2										
Field	Type	Constraint																										
EventId	Integer	Primary key																										
Event	Varchar (50)																											
DateEvent	Date																											
NumPerformers	Integer																											
	Ans	CREATE TABLE Event (EventId INTEGER PRIMARY KEY, Event VARCHAR(50) , DateEvent DATE, NumPerformers INTEGER) ;																										
		(½ mark for CREATE TABLE) (½ mark for PRIMARY KEY constraint) (1 mark for Column Names with Data Types)																										
	(b)	Consider the tables given below and answer the question that follows Table: Workshop <table><tr><td>WorkshopId</td><td>Title</td><td>NumSpeakers</td><td>MeantFor</td><td>Fee</td></tr><tr><td>551</td><td>Time Management</td><td>3</td><td>Senior Manager</td><td>7000</td></tr><tr><td>553</td><td>App Development</td><td>1</td><td>Computer Programmer</td><td>9000</td></tr><tr><td>554</td><td>Planning</td><td>2</td><td>Senior Manager</td><td>8000</td></tr><tr><td>556</td><td>Marketing Strategies</td><td>2</td><td>Junior Manager</td><td>9000</td></tr></table>	WorkshopId	Title	NumSpeakers	MeantFor	Fee	551	Time Management	3	Senior Manager	7000	553	App Development	1	Computer Programmer	9000	554	Planning	2	Senior Manager	8000	556	Marketing Strategies	2	Junior Manager	9000	
WorkshopId	Title	NumSpeakers	MeantFor	Fee																								
551	Time Management	3	Senior Manager	7000																								
553	App Development	1	Computer Programmer	9000																								
554	Planning	2	Senior Manager	8000																								
556	Marketing Strategies	2	Junior Manager	9000																								

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		<table><tr><th colspan="3">Table: Participant</th></tr><tr><th>ParticipantId</th><th>Name</th><th>WorkshopId</th></tr><tr><td>100</td><td>Prabhu Shankar</td><td>551</td></tr><tr><td>101</td><td>Dev Sen</td><td>554</td></tr><tr><td>102</td><td>Fauzia Khan</td><td>551</td></tr><tr><td>103</td><td>Tom Winters</td><td>553</td></tr></table>	Table: Participant			ParticipantId	Name	WorkshopId	100	Prabhu Shankar	551	101	Dev Sen	554	102	Fauzia Khan	551	103	Tom Winters	553	
Table: Participant																					
ParticipantId	Name	WorkshopId																			
100	Prabhu Shankar	551																			
101	Dev Sen	554																			
102	Fauzia Khan	551																			
103	Tom Winters	553																			
	(i)	WorkshopId '552' is missing in the table Workshop. Is there any discrepancy (something not correct) ? Give reason for your answer.	1																		
	(ii)	WorkshopId '551' is present twice in the table Participant. Is there any discrepancy ? Give reason for your answer	1																		
	Ans	There is no discrepancy if 552 is missing. It is not necessary that all workshop ids maintain a sequence. There is no discrepancy if 551 is present twice as more than one participant may attend the same workshop. NOTE: WorkshopId is a foreign key column in the Participant table, so it can store duplicate values, may also be accepted.																			
		(1 mark each for reasons) NOTE: (½ mark each for stating 'NO Discrepancy' without stating reason)																			
	(c)	With reference to the above given tables (in Q.6-(b), Write commands in SQL for (i) to (iii) given below :	6																		
	(i)	To display names of Participants along with workshop titles for only those workshops that have more than 2 speakers.																			
	Ans	<pre>SELECT Name, Title FROM Participant, Workshop WHERE Participant.Workshopid =Workshop.Workshopid AND Numspeakers > 2; OR SELECT Participant.Name, Workshop.Title FROM Participant, Workshop WHERE Participant.Workshopid =Workshop.Workshopid AND Workshop.Numspeakers > 2; OR SELECT P.Name, W.Title FROM Participant P, Workshop W WHERE P.Workshopid = W.Workshopid AND W.Numspeakers > 2;</pre> NOTE: && should be accepted in place of 'AND'																			
	Ans	(½ mark for SELECT) (½ mark for FROM)																			

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		<i>(½ mark for correct use of join)</i> <i>(½ mark for correct use of condition)</i>	
	(ii)	To display ParticipantId, Participant's name, WorkshopId for workshops meant for Senior Managers and Junior Managers.	
	Ans	<pre>SELECT ParticipantId, Name, WorkshopId FROM Participant, Workshop WHERE Participant.WorkshopId = Workshop.WorkshopId AND Meantfor = 'Senior Manager' OR Meantfor = 'Junior Manager' ; OR SELECT Participant.ParticipantId, Participant.Name, Participant.WorkshopId FROM Participant, Workshop WHERE Participant.WorkshopId = Workshop.WorkshopId AND Workshop.Meantfor = 'Senior Manager' OR Workshop.Meantfor = 'Junior Manager' ; OR SELECT P.ParticipantId, P.Name, P.WorkshopId FROM Participant P, Workshop W WHERE P.WorkshopId = W.WorkshopId AND W.Meantfor = 'Senior Manager' or W.Meantfor = 'Junior Manager' ; NOTE: should be accepted in place of 'OR'</pre>	
		<i>(1 mark for SELECT)</i> <i>(½ mark for FROM)</i> <i>(½ mark for condition using WHERE)</i>	
	(iii)	To display WorkshopId, title, ParticipantId for only those workshops that have fees in the range of 5000.00 to 8000.00	
	Ans	<pre>SELECT Workshop.WorkshopId, Title, ParticipantId FROM Participant, Workshop WHERE Participant.WorkshopId = Workshop.WorkshopId AND Workshop.Fee BETWEEN 5000 AND 8000; OR SELECT P.WorkshopId, W.Title, P.ParticipantId FROM Participant P, Workshop W WHERE P.WorkshopId = W.WorkshopId AND Fee BETWEEN 5000 AND 8000;</pre>	
		<i>(½ mark for SELECT)</i> <i>(½ mark for FROM)</i> <i>(½ mark for correct use of join)</i> <i>(½ mark for correct use of condition)</i> NOTE: "Fee >= 5000 AND FEE <=8000" should be accepted in place of BETWEEN 5000 AND 8000	

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7	(a)																	
	(i)	Define e-governance.	2															
	Ans	Using technology to deliver Government services.																
		(2 mark for correct answer)																
	(ii)	List two advantages of e-governance to a disabled person.	1															
	Ans	Advantages of e-governance 1. They get access to Government related information online without having to travel long distances. 2. They become aware of the opportunities/schemes especially meant for them.																
		(1 mark each for any two valid points)																
	(b)	How does E-business help organizations to provide better customer services?	1															
	Ans	1. Organisations are able to offer services and support to customers 24x7. 2. Organizations analyze customers reviews about their products/services and keep improving them.																
		(1 mark for any one valid point)																
	(c)	Ms. Fauzia is creating a form for an application to be used in a Gym. Help her to choose most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries.	2															
		<table><tr><td>S.No.</td><td>Function</td></tr><tr><td>1</td><td>To enter NAME</td></tr><tr><td>2</td><td>To enter EMAIL ID</td></tr><tr><td>3</td><td>To allow user to choose any one MEMBERSHIP DURATION out of 1 Month, 3 Months, 6 Months, 1 year.</td></tr><tr><td>4</td><td>To choose PRE-EXISTING MEDICAL CONDITIONS out of Diabetes, Heart Disease, Chest Pain, Shortness of Breath, Epilepsy, Others.</td></tr></table>	S.No.	Function	1	To enter NAME	2	To enter EMAIL ID	3	To allow user to choose any one MEMBERSHIP DURATION out of 1 Month, 3 Months, 6 Months, 1 year.	4	To choose PRE-EXISTING MEDICAL CONDITIONS out of Diabetes, Heart Disease, Chest Pain, Shortness of Breath, Epilepsy, Others.						
S.No.	Function																	
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	(c)	<table><tr><td>S.No</td><td>Function</td><td>Control</td></tr><tr><td>1</td><td>To enter NAME</td><td>TextField</td></tr><tr><td>2</td><td>To enter EMAIL ID</td><td>TextField</td></tr><tr><td>3</td><td>To allow user to choose any one MEMBERSHIP DURATION out of 1 Month, 3 Months, 6 Months, 1 year.</td><td>RadioButton/ComboBox</td></tr><tr><td>4</td><td>To choose PRE-EXISTING MEDICAL CONDITIONS out of Diabetes, Heart Disease, Chest Pain, Shortness of Breath, Epilepsy, Others.</td><td>ListBox/CheckBox</td></tr></table>	S.No	Function	Control	1	To enter NAME	TextField	2	To enter EMAIL ID	TextField	3	To allow user to choose any one MEMBERSHIP DURATION out of 1 Month, 3 Months, 6 Months, 1 year.	RadioButton/ComboBox	4	To choose PRE-EXISTING MEDICAL CONDITIONS out of Diabetes, Heart Disease, Chest Pain, Shortness of Breath, Epilepsy, Others.	ListBox/CheckBox	
S.No	Function	Control																
1	To enter NAME	TextField																
2	To enter EMAIL ID	TextField																
3	To allow user to choose any one MEMBERSHIP DURATION out of 1 Month, 3 Months, 6 Months, 1 year.	RadioButton/ComboBox																
4	To choose PRE-EXISTING MEDICAL CONDITIONS out of Diabetes, Heart Disease, Chest Pain, Shortness of Breath, Epilepsy, Others.	ListBox/CheckBox																
	Ans	(½ mark for each correct answer)																