

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 **9** 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 :

- (i) **All questions are compulsory.**
- (ii) **Answer the questions after carefully reading the text.**

1. (a) Identify the odd one out of the following : 2
 Optical Fiber/Coaxial Cable/Bluetooth/Twisted Pair Cable
 Give reason for your answer.
- (b) How is it easier to diagnose fault in Star topology than in Bus topology ? 2

- (c) What is the purpose of logical address of computer ? 2
- (d) Does open source software only mean that the software is free of cost ? Give reason for your answer. 2
- (e) Which of the following are valid IP addresses ? Give reason(s) if invalid. 2
- (i) 121.23.1.45
- (ii) 192.168.0.254
- (iii) 192.168.0.1
- (iv) 198.-1.1.1
2. (a) Write the value that will be assigned to variable x after executing the following statement : 1
- $$x = 20 - 5 + 3 * 20/5;$$
- (b) Consider the statement :
`choice = 'Y' ;`
 What is the datatype of variable choice ? Write a Java statement to declare the variable 'choice'. 1
- (c) While working in Netbeans IDE, Amit wants that the text in a Text area should move to the next line without breaking the word. Which properties would help him to do that ? 1
- (d) Write a Java statement to : 1
 Append a string "ABC" to the text that is already in the text area named jTextArea1.
- (e) Write the output of the following HTML code : 2
- ```
<ol start="4">
 Bake the mixture in oven for an hour
 Remove from oven
 Allow the mixture to stand for ten minutes
 Serve
</code>
```

(f) Given below is a code.

```
<message>
 <text>Hello, world!</text>
</message>
```

Which language is used to write the above code ? 2

What are <message>, </message>, <text> and </text> ?

(g) Rewrite the following code using if else if statement instead of switch : 2

```
switch (success) {
case -1: x1 = "No result" ;
 break;
case 0 : x1 = "Final result- Not successful";
 break;
default : x1 = "result NOT known";
 break;
}
```

3. (a) How is a database related to a table ? 1

(b) Ariya wants to add another column 'Gender' in the already existing table 'CUSTOMERS'. She has written the following statement. However, it has errors. Rewrite the correct statement. 1

```
[MODIFY TABLE CUSTOMERS GENDER char(1);
```

(c) In a hospital, the 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 the 'Hospital' database, with 3 suitable columns identifying Primary key and Foreign key in the table that you expect. 2

(d) Explain the following statement with the help of example : 2

"In a transaction either all the SQL statements be committed or all rolled back."

(e) 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 ?

(f) How is HAVING clause similar to WHERE clause ? How is HAVING clause different from WHERE clause ? Explain with the help of examples of each.

2

4. (a) Write the values of r and s after the execution of the following code :

1

```
int p = 11;
int q = 21;
int r;
int s;
r = ++q;
s = p++;
r++;
```

- (b) What will be displayed in jTextField1 and jTextField2 after the following code is executed : 2

```
int ndigits = 0;
int N = 35;
while (N > 12) {
 ndigits = ndigits + 1;
 N = N-10;
}
jTextField1.setText(" "+ndigits);
jTextField2.setText(" "+N);
```

- (c) Write the value of C after executing the following code : 2

```
int P;
int R = 8;
int oddNum;
int C = 0;
for (P = 1; P < R; P=P+3)
{
 oddNum = P %2;
 if (oddNum == 1)
 {
 C= C+1;
 }
}
```

- (d) Write the value that will be stored in the variable t after the execution of the following code. How many times will the loop execute? 2

```
int sum = 0;
int score = 0;
double t;
do
{
 score = score +1;
 sum = sum + score;
}
while (score <=3);
t = sum / 3;
```

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

```
int j;
int i =15;
int flag = 1;
 while(j = 2 j < i; j++)
 {
 if(i % j = 0)
 {
 flag == 0;
 break;
 }
 }
}
```

(f) Ms. Fauzia works as a programmer in “TelTel Mobile Company” where she has designed a software to compute charges to be paid by the mobile phone user. A screenshot of the same is shown below :

**TelTel Mobile Company**

Name

Mobile Phone Number

Number of Calls Made

Number of SMSs Sent

Mobile Data Plan

Calls and SMS Charges:

Mobile Data Plan Charges:

Amount to Pay:

Each Call is charged at ₹ 1.00.

Each SMS is charged at ₹ 0.50.

Users can also opt for Mobile Data Plan. Charges for Mobile Data Plan are flat ₹ 50.00.

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

(i) When the 'Calculate Charges' button is clicked, 'Calls and SMS Charges', 'Mobile Data Plan Charges' and 'Amount to Pay' should be calculated and displayed in the respective text fields.

'Amount to Pay' is calculated as :

Calls and SMS Charges + Mobile Data Plan Charges (if any) 4

(ii) When the 'Clear' button is clicked, all the textfields and checkbox should be cleared. 1

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

5. Consider the Table "Infant" shown below :

**Table : Infant**

ItemCode	Item	DatePurchase	UnitPrice	Discount
101	Frock	2016-01-23	700	10
102	Cot	2015-09-23	5000	25
103	Soft Toy	2016-06-17	800	10
104	Baby Socks	2014-10-16	100	7
105	Baby Suit	2015-09-20	500	5

Note : Discount column stores discount %.

Write the commands in SQL for (i) to (viii) and output for (ix) and (x).

(i) To display the details about the Cot. 1

(ii) To list the names of items and their unit price that have unit price less than 800 and discount more than 5%. 1

(iii) To list the names of items and their date of purchase that were purchased after 31<sup>st</sup> December, 2015. 1

(iv) To display the number of items that have more than 10% as discount. 1

(v) To display item code and unit price in decreasing order of unit price. 1

- (vi) To increase the unit price of each item by 10% of their unit price. 1
- (vii) To display the highest unit price of items. 1
- (viii) To display the names of items that have 'Baby' anywhere in their item names. 1
- (ix) `SELECT MID (Item,1,2) FROM Infant;` 1
- (x) `SELECT AVG(UnitPrice) FROM Infant WHERE DATEPURCHASE >'2015-01-01';` 1

6. (a) "XYZ" Company conducts workshops for employees of organizations. The company requires data of workshops that are organized. Write SQL query to create a table 'Workshop' with the following structure : 2

Field	Type	Constraint
WorkshopId	Integer	Primary key
Title	Varchar(50)	
DateWorkshop	Date	
NumSpeakers	Integer	

- (b) Consider the tables given below and answer the questions that follow : 2

**Table : Event**

EventId	Event	NumPerformers	CelebrityID
101	Birthday	10	C102
102	Promotion Party	20	C103
103	Engagement	12	C102
104	Wedding	15	C104

**Table : Celebrity**

CelebrityID	Name	Phone	FeeCharged
C101	Faiz Khan	99101956	200000
C102	Sanjay Kumar	893466448	250000
C103	Neera Khan Kapoor	981166568	300000
C104	Reena Bhatia	65877756	100000

(i) Name the Primary keys in both the tables and Foreign key in 'Event' table.

Can NumPerformers (Number for performers) be set as the Primary key ? Give reason.

(ii) How many rows will be present in the Cartesian join of the above mentioned two tables ?

In the table 'Event', the CelebrityID 102 is present twice in the column "CelebrityId". Is there any discrepancy ? Give reason.

(c) With reference to the above given tables (in Q6 b), write the commands in SQL for (i) to (iii).

(i) To display EventId, Event name, Celebrity Id and Names of celebrities for only those events that have more than 10 performers. 2

(ii) To display Event name, Celebrity Id and Names of celebrities who have "Khan" anywhere in their names. 2

(iii) To display Event name, Names of celebrities and Fee charged for those celebrities who charge more than 200000. 2

7. (a) List two disadvantages of e-governance to a disabled person. 2

(b) How do online retailers usually offer customers a wider range of products at prices that are lesser than those of traditional stores ? 1

(c) Ms. Cathy is creating a form for Vidya University Sports Council application. Help her to choose the most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries : 2

S.No.	Function
1	To let the user enter NAME
2	To let the user enter MOBILE NUMBER
3	To let the user choose one PROFESSION out of the categories : Teaching/Non-Teaching/Research Scholar
4	To let the user select facilities out of Gym, Yoga, Table Tennis, Badminton and Aerobics. More than one facility may be chosen.