

INTERNATIONAL INDIAN SCHOOL, DAMMAM

Model Examination – January 2018

Informatics Practices – Class XII

Time: 3 Hrs

Marks: 70

1. (a) Identify the odd one out of the following : (1)
IP address/ URL /MAC Address/Domain Name
Give reason for your answer.
- (b) Ms Nila, Technical Support Head stationed at Bangalore, needs to speak face to face (1)
with a staff member in Hyderabad office to provide him technical support. Suggest
a technology she can use for this.
- (c) What is Denial of Service attack? Explain any two types of DoS attacks. (2)
- (d) How are transmission media classified? Arrange the following media in the order of (2)
efficiency:
Coaxial cable, Ethernet cable, Optical Fibre, Twisted Pair
- (e) How is open source software different from proprietary software? (1)
- (f) What is Ogg Vorbis? (1)
- (g) Compare Keymap based and Phonetic based text entry. (2)
2. (a) What is the property used to enter the Items in a list in NetBeans. (1)
- (b) While designing a GUI application, Celine has kept a text field totalTF. Write the (1)
java code to prevent users from entering/changing values in this text field.
- (c) Help Karthik in identifying the incorrect variable name with justification from the (2)
following:
i. 2ndchoice ii. fee_paid iii. Customer# iv. NoOfItems
- (d) Rewrite the following code using if else: (2)

```
int points; char grade;
switch(points)
{
    case 4:
    case 5: grade='A';break;
    case 2:
    case 3: grade='B';break;
    case 1: grade='C';break;
    default: grade='X';
}
```

- (e) Write the HTML code to create the following table: (2)

EmpCode	Name	Salary
1001	Aman	20000
1005	Danish	15000

- (f) Explain any two features of XML. (2)

3. (a) Shaan wants to delete the column 'Grade' in the already existing table 'RESULTS'. He has written the following statement. However, it has errors. Rewrite the correct statement. (1)

```
UPDATE TABLE Results DELETE Grade;
```

- (b) While creating the table **Staff**, Ms. Singh set the column **Comm** in such a way that null values cannot be entered. Now she wants to allow null values in the column. Write a command to make this possible. (1)

- (c) Write suitable commands for the following purpose: (4)
- To open the database named 'Library'.
 - To display the list of the tables already existing in the database.
 - To view the data types and constraints of attributes in the table 'Books'.
 - To remove the pre-existing table named 'Issued'.

- (d) Observe the table named "Club" and predict the output of the following queries: (4)

Club

Member_id	Member_name	Address	Age	Dateofjoin	Fees
M001	Sumit	New Delhi	20	1997/01/10	1000
M002	Nisha	Gurgaon	19	1998/03/24	1500
M003	Niharika	New Delhi	21	1996/12/12	2100
M004	Sachin	Faridabad	18	1999/07/01	1000

- ```
SELECT COUNT(Fees) - COUNT(DISTINCT Fees) FROM Club;
```
- ```
SELECT Member_id, MONTH(Dateofjoin) FROM Club WHERE Fee>1000;
```
- ```
SELECT CONCAT(LEFT(Member_name,2),RIGHT(Member_id,2)) AS 'MemCode' FROM Club WHERE Dateofjoin<'1998/01/01';
```
- ```
SELECT ROUND(Fees*1.15,-2) FROM Club WHERE Age>=20;
```

4. (a) Define the term Inheritance with respect to Object Oriented Programming. (1)

- (b) While designing a GUI application, Usha included a few radio buttons. Now she wants to prevent users from choosing more than one of them at a time. How can she do it? (1)

- (c) What will be the value of y after the following code is executed? (1)

```
int x=6;
while(x>0)
{
    y>--x;
    System.out.println(x--);
    System.out.println(y);
}
```

- (d) Find the contents of the text fields jTF1, jTF2, jTF3 and jTF4 after the following java code is executed. (2)

```
String txt1="New Year",txt2="2018";
jTF1.setText(txt1.substring(2,6).trim());
int L=txt1.length();
jTF2.setText(txt2+L);
jTF3.setText(txt1.toUpperCase());
jTF4.setText(txt2.concat(txt1));
```

- (e) How many times will the loop execute? Also find the values of p and q after the loop is executed. (2)

```
int p=45,q=9;
do
{
    JOptionPane.showMessageDialog(null,""+p+q);
    p++;
    q--;
}while(p%q!=0);
```

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

```
int n=5; i=1, f=1;
do;
{
    f=f*i;
    i++;
    while(i<=n)
jTextField1.setText(""+f);
```

- (g) Ms. Shireen works in an International Bank as an IT Head. She designed a simple interest calculator program as shown below: (6)

International Bank

CUSTOMER NAME: Ms. Jenifer

DEPOSIT AMOUNT: 10000

ACCOUNT TYPE: SAVING RECURRING DEPOSIT FIXED DEPOSIT

INTEREST RATE: INTEREST RATE

DEPOSIT DURATION (IN YEARS): 2

SIMPLE INTEREST AMOUNT: 800.0

SI

CLEAR ALL

- (i) Write code for 'Interest Rate' button to calculate and display interest rate based on the account type as shown below:

Account Type	Interest Rate
Saving	5%
Recurring Deposit	7%
Fixed Deposit	10%

- (ii) Write code for 'SI' button to calculate and display simple interest
 $[SI = (amount * interest_rate * duration) / 100]$
- (iii) Write the code required for 'Clear All' button to clear all the text fields and set default account type as 'Saving'.

5. (a) What do you mean by Union operation in SQL? Give an example. (2)
- (b) What is Referential Integrity? Explain with example. (2)
- (c) Consider the following table: (4)

Table: PharmaDB

RxID	DrugID	DrugName	Price	PharmacyName	PharmacyLocation
R1000	5476	Amlodipine	100.00	Rx Pharmacy	Pitampura, Delhi
R1001	2345	Paracetamol	15.00	Raj Medicos	Bahadurgarh, Haryana
R1002	1236	Nebistar	60.00	My Chemist	Rajouri Garden, Delhi
R1003	6512	VitaPlus	150.00	My Chemist	Gurgaon, Haryana
R1004	5631	Levocitrezine	110.00	Rx Pharmacy	SouthExtension, Delhi

Write commands in SQL for the following:

- i. To display the details of drugs whose price is more than 100.
- ii. To display the DrugIds and pharmacy names of drugs whose pharmacy locations have the word 'Delhi' in it.
- iii. To decrease the price of all drugs by 10%.
- iv. To delete the row of Paracetamol.

(d) On the basis of the above table 'PharmaDB' write outputs for the following queries: (2)

- i. `SELECT SUM(Price), AVG(Price) FROM PharmaDB;`
- ii. `SELECT MAX(DrugId) FROM PharmaDB WHERE Price<100;`

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

Column Name	Datatype(Size)	Constraint
BookId	Int(10)	Primary Key
BookName	Varchar(40)	Not Null
Type	Char(4)	
Author	Varchar(40)	
No_Copies	Int(6)	
Price	Decimal(8,2)	

(b) Consider the tables given below which are linked with each other and maintains referential integrity. With reference to the given tables, write commands in SQL for (i) and (ii) [2 marks each] and output for (iii) and (iv) [One mark each] (6)

Table : Faculty

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

Table : Course

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

- i. To display the Subject, name of Faculty and Phone numbers for each course.
- ii. To display CourseIds, TeacherIds and Addresses of all the courses where the faculty is from Mumbai
- iii. `SELECT CourseId, Subject, Name FROM Course C, Faculty F WHERE C.TeacherId = F.TeacherId && Fee > 4500;`
- iv. `SELECT Name, Subject FROM Course C, Faculty F WHERE C.TeacherId = F.TeacherId && Subject NOT LIKE"% %";`

- (c) Answer the following questions with reference to the above tables SAP and Store: (2)
- i. Identify the Primary keys and Foreign key from these tables.
 - ii. What would be the degree and cardinality of the Cartesian product of these tables?
7. (a) Mention any two features of a good Back-end. (1)
- (b) Mention one advantage and one disadvantage of e-Learning. (2)
- (c) Bharat is designing a form for online enrollments to a summer camp. Suggest the appropriate control (out of Text Field, Text Area, Check Boxes, Label, Combo Box, Button) he can use for each of the following inputs: (2)

Sl. No	Input	Control
i	Name	
ii	Brief Description of oneself	
iii	Hobbies	
iv	Submit the form	

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Model Examination – January 2018

Informatics Practices – Class XII

(Humanities Stream)

Time: 3 Hrs

Marks: 70

1. (a) Identify the odd one out of the following : (1)
Optical Fiber/Coaxial Cable/Bluetooth/Twisted Pair Cable
Give reason for your answer.
- (b) Ms Nirmala, IT Help Desk executive needs to remotely login to a customer's PC to provide him technical support. Suggest remote access software she can use. (1)
- (c) What is Eavesdropping? Which of the following activity can be termed as Eavesdropping: (2)
 - i. Madhu sets up an unauthorized parallel telephone line to capture the data.
 - ii. Manju staeals her friend's keyboard.
 - iii. Martina installs some receiver hardware to capture the data while on its way.
 - iv. Mumtaz gets someone's login information by casually watching what he/she is typing.
- (d) Which of the following are valid IP addresses? Give reason(s) if invalid. (2)
(i) 121.23.1.256 (ii) 192.168.0.254 (iii) 192.168.0.1 (iv) 198.-154.1.1
- (e) How is open source software different from proprietary software? (1)
- (f) What is ODF? (1)
- (g) Compare True Type font and Open type font. (2)
2. (a) Write a Java statement to append a string "ABC" to the text that is already in the text area named jTextArea1. (1)
- (b) While designing a GUI application, Celine has kept the button nextBtn inactive by default. She wants it to be active at runtime only if the user has checked the checkbox acceptCB. Write the java statement to do this? (1)
- (c) Help Karthik in identifying the incorrect variable name with justification from the following: (2)
 - i. unit@price
 - ii. fee
 - iii. userid
 - iv. avg marks
- (d) Rewrite the following code using switch case: (2)

```
int day=Integer.parseInt(jTextField1.getText());
if(day>=1 && day<=5)
    JOptionPane.showMessageDialog(this, "Working Day");
else if(day>=6 && day<=7)
    JOptionPane.showMessageDialog(this, "Off Day");
```

```
else
    JOptionPane.showMessageDialog(this, "Invalid Entry");
```

- (e) Joshua has to design a web pages with the following specifications: (2)
- i. Hyperlinks should appear in green colour and once you visit a link they should be in red colour.
 - ii. Font used should be "Arial New" with size 3
- Write the HTML code to do this.

- (f) How HTML is different from XML? Mention any two points of difference. (2)

3. (a) Tanvi wants to add another column 'Grade' in the already existing table 'RESULTS'. She has written the following statement. However, it has errors. Rewrite the correct statement. (1)

```
UPDATE TABLE Results INSERT Gender CHAR(1);
```

- (b) While creating the table **Student**, Ms. Sharma set the column **Game_Played** in such a way that null values cannot be entered. Now she wants to allow null values in the column. Write a command to make this possible. (1)

- (c) Write suitable commands for the following purpose: (4)
- i. To display the list of databases already existing in MySQL.
 - ii. To open the database named 'Clusters'.
 - iii. To remove the pre-existing table named 'Athletics'.
 - iv. To remove all the records of the table named 'Games'.

- (d) Observe the table named "Staff" and predict the output of the following queries: (4)

Staff

No	Name	Age	Department	Dateofjoin	Salary	Sex
1	Jugal	34	Computer	1997/01/10	12000	M
2	Sharmila	31	History	1998/03/24	20000	F
3	Sandeep	32	Maths	1996/12/12	30000	M
4	Sangeeta	35	History	1999/07/01	40000	F
5	Rakesh	42	Maths	1997/09/05	25000	M
6	Shyam	50	History	1998/06/07	30000	M
7	Shivam	44	Computer	1997/02/25	26000	M
8	Shalakha	33	Maths	1997/07/31	20000	F

- i.

```
SELECT COUNT(Department) - COUNT(DISTINCT department)
FROM Staff;
```
- ii.

```
SELECT Name, YEAR(Dateofjoin) FROM Staff WHERE
Age>40;
```
- iii.

```
SELECT CONCAT(LEFT(Name,2),RIGHT(Name,1)) AS 'Id'
FROM Staff WHERE Dateofjoin>'1997/12/31';
```
- iv.

```
SELECT ROUND(Salary*1.1,-3) FROM Staff WHERE
Department='Computer';
```


4. (a) Define the term polymorphism with respect to Object Oriented Programming. (1)
- (b) While designing a GUI application, Sandhya included a list in her frame. Now she wants to make it single selection. Which property of JList should she use and how? (1)
- (c) What will be the value of y after the following code is executed? (1)

```
int x=4;
while(x>0)
{
    y=x--;
    System.out.println(--x);
    System.out.println(y);
}
```

- (d) Find the contents of the text fields jTF1, jTF2, jTF3 and jTF4 after the following java code is executed. (2)

```
String str1="COMPUTER",str2="1000";
jTF1.setText(str1.substring(3,6));
int L=str1.length();
jTF2.setText(str2+L);
jTF3.setText(str1.toLowerCase());
jTF4.setText(str2.concat(str1));
```

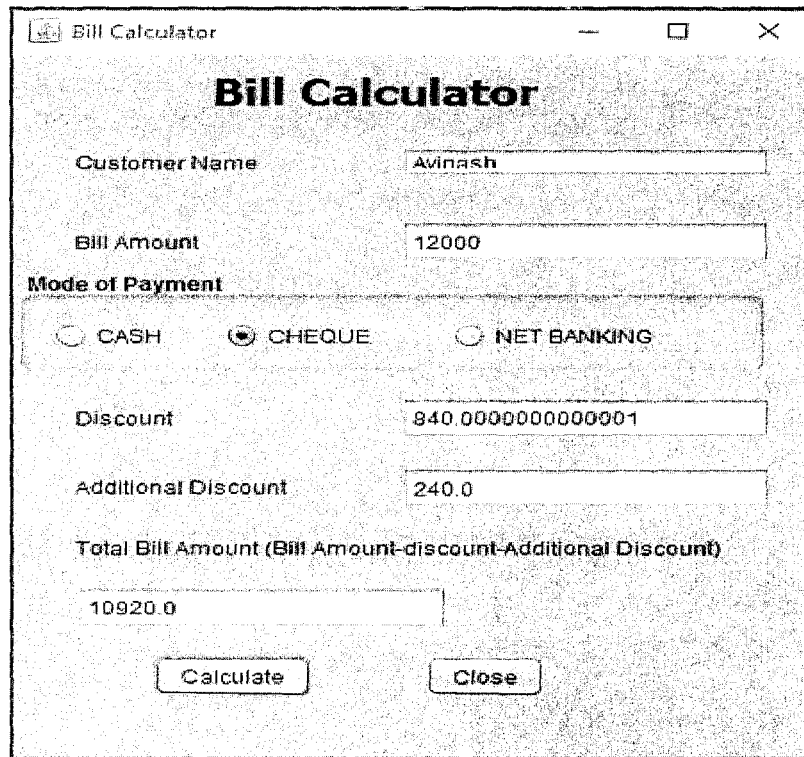
- (e) Rewrite the following code using while loop : (2)

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

- (f) Rewrite the following code after correcting the errors(if any): (2)

```
int p=2; q=6;
if (p>q);
    p-=q;
Else
    p+=q;
resTF.setText(p);
```

- (g) Ms Anandi, the owner of FoodPoint has asked her programmer Sameer to develop the following GUI in Netbeans. (6)



- (i) Write the code to disable the Discount and Additional Discount text fields.
- (ii) Write code for calculate button to calculate and display various discounts and final bill amount as per specification given in the table.

Mode of payment	Discount percent
Cash	5%
Cheque	7%
NetBanking	10%

Also give additional discount of 2% if BillAmt is greater than 10000.

- (iii) Write the code for close button to close the application after displaying a pop up message "Thank you".

- 5. (a) What are the various categories of SQL commands? Give examples of each. (2)
- (b) What is Referential Integrity? Explain with example. (2)
- (c) Consider the Table 'Infant' shown below : (4)

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	
105	Baby Suit	2015-09-20	500	5

Write commands in SQL for the following:

- i. To display the details of Items whose unit price is more than 1000.
- ii. To display the Item codes and Item names of Items whose names consist of two or more words (Hint: These names contain a space in it).
- iii. To increase the unit price of all items by 15%.
- iv. To delete the row of Baby Socks.

(d) On the basis of the above table 'Infant' write outputs for the following queries: (2)

- i. `SELECT MAX(DatePurchase), MIN(DatePurchase) FROM Infant;`
- ii. `SELECT AVG(Unitprice) FROM Infant WHERE Discount<10;`

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

Attribute	Data Type	Constraint
TokenNo	Integer (5 digits)	Together forms Primary Key
TokenDate	Date	
Service	String (Variable length. Maximum 100 letters)	
Amount	Decimal number	No Null values

(b) Consider the tables given below which are linked with each other and maintains referential integrity. With reference to the given tables, write commands in SQL for (i) and (ii) [2 marks each] and output for (iii) and (iv) [One mark each] (6)

Table: SAP

SapId	ItemCode	ItemName	ItemLocation
S1001	1001	Receiver	W12-B3-R24
S1002	1002	Transponder	W13-B7-R87
S1003	1003	Battery Bank	W21-B1-R87
S1004	1004	Inverter	W21-B11-R2
S1005	1005	Genset	W22-B15-R16

Table : Store

StoreID	ItemCode	StoreLocation	ReceivedDate
1201	1001	HauzKhas	2016/05/20
1202	1002	Rajouri Garden	2016/06/14
1203	1003	Rohini	2016/05/06
1204	1004	Hauz Khaas	2016/07/15
1205	1005	Rajendra Place	2016/05/27

- i. To display the ItemCode,ItemName and StoreLocation of all the items .
- ii. To display SapIds, ItemLocations and RecievedDates of all the items whose Store Location is Hauz Khaz.
- iii. `SELECT SapId, ItemName, StoreId FROM SAP S1,Store S2 WHERE S2.ItemCode=S1.ItemCode && ReceivedDate > '2016/05/30' ;`

iv. `SELECT ItemName, StoreLocation FROM SAP S1,Store S2
WHERE S2.ItemCode=S1.ItemCode && ItemName NOT LIKE"%er";`

- (c) Answer the following questions with reference to the above tables SAP and Store: (2)
- i. Identify the candidate keys from the table SAP.
 - ii. What would be the degree and cardinality of the Cartesian product of these tables?
7. (a) Mention any two features of a good Front-end. (1)
- (b) What is e- Governance? Give any two examples of e-Governance websites/portals. (2)
- (c) Mukund is designing a form for online admissions. Suggest the appropriate control (out of Text Field, Text Area, Check Boxes, Label, Radio Buttons, Button) he can use for each of the following inputs: (2)

Sl. No	Input	Control
i	Name	
ii	Choice of stream	
iii	Choice of Subjects	
iv	Clear the form	