# INDIAN SCHOOL MUSCAT FIRST PRELIMINARY EXAMINATION INFORMATICS PRACTICES 

CLASS: XII
10.01.2019

Sub. Code: 065
Time Allotted: 3 Hrs
Max. Marks: 70

## General Instructions:

1. All the Questions are Compulsory.
2. Read the Question carefully before writing the answer.

Q1.
a) Write two examples each of software in the following categories :

1. Open Source Operating System 2. Open Source Web Browser
b) ABC Company wants to link its computers in the Head office in New Delhi to its office in Sydney. Name the type of Network that will be formed. Which communication media should be used to form this Network?
Expand the following :
2. GSM 2. IP
d) Name the device
3. This device constantly looks at all the data entering and exiting your connection. It can block or reject data in response to an established rule
4. This device connects multiple nodes to form a network. It redirects the receivedinformation only to the intended node(s).
e) Which of the following is/are not communication media?

| (i) | Microwaves | 2 |
| :--- | :--- | :--- |
| (ii) | Optical Fiber cable |  |
| (iii) | Node |  |
| (iv) | Radio waves |  |

Identify which of the above-mentioned communication media are Wired media and which ones are Wireless media.
Q2.
a) Identify the invalid variable names. Sate the reason if invalid.

1. (i) Marks Unit (ii) Product_1 (iii) Sales123 (iv) 2Marks
b) Write the data type of variables that should be used to store :
2. Marks of students
3. Grades of students (Grade can be 'A' or ' B ' or ' C ')
c) Write examples of any two properties and any two methods of jButton component
d) Write the purpose of HTML. Distinguish between <P> tag and <BR> tag.
e) Rewrite the following code using switch statement:
if ( $\mathrm{ch}==$ ' $\mathrm{A}^{\prime}$ )
Allowance=7000;
else if ( $\mathrm{ch}==$ ' B ')
Allowance $=5000$;
else
Allowance $=3000$;
f) Distinguish between ComboBox and ListBox. When would you prefer using them over Radiobutton and Checkbox?
Q3.
a) What is MySQL used for ? Abhay wants to start learning MySQL. From where can he 1 obtain the MySQL software?
b) In the table "Student", Priya wanted to increase the Marks (Column Name:Marks) of those students by 5 who have got Marks below 33. She has entered the following statement :

## SELECT Marks+5 FROM Student WHERE Marks<33;

Identify errors (if any) in the above statement. Rewrite the correct SQL statement
c) Given the table 'Player' with the following columns :

| Table :Player |  |
| :--- | :--- |
| PCODE | POINTS |
| 1 | 50 |
| 2 | NULL |
| 3 | 40 |

Write the output of the following statements:

1. Select sum(points) from player;
2. Select count $(*)$ from player;
(OR)
3. Select avg(points) from Player;
4. Select count(points) from player;
d) (i) Name the Data type that should be used to store AccountCodes like "A1001" of Customers.
(ii) Name two Data types that require data to be enclosed in quotes.
(OR)
(i) How char data type is different from Varchar? Explain with an example.
e) 'Class' table has columns RNO and NAME. The following statements are executed:

SET AUTOCOMMIT $=0$;
INSERT INTO CLASS VALUES(5,'Rajiv');

## COMMIT;

UPDATE CLASS SET NAME='Rajeev' WHERE ID=5;
SAVEPOINT A;
INSERT INTO CLASS VALUES(6,'Chris');
SAVEPOINT B;
INSERT INTO CLASS VALUES(7,'Feroze');
Select * from Class;

## Rollback to B;

Select * from Class;
What will be the output of both the above given SELECT statement?
f) Name the Single Row functions (for each of the following) that

1. returns a number.
2. returns lowercase letters.
3. returns names of days. For example : "Monday", "Tuesday"
4. returns weekday number. For example : 1 for Sunday, 2 for Monday, 3 for Tuesday

Q4.
a) Write the value that will be stored in variable a after execution of the following code if :
(i) initial value of $\mathbf{a}$ is 8 .
(ii) initial value of $\mathbf{a}$ is 10 .

$$
\begin{aligned}
& \text { int } b=9 ; \\
& \text { if }(a>b) \\
& a=a+5 ; \\
& a=a+2 ;
\end{aligned}
$$

b) Identify the error in the following code:

```
switch(c)
{
case 9.0:
a=a+2;
break;
case 8.0:
a=a+3;
break;
```


## OR

What is the use of break and default statement in switch... case? Explain.
c) What values will be displayed in JOptionPane when the following code is executed? int $\mathrm{a}=5, \mathrm{~b}=2$;
while ( $\mathrm{a}<20$ )
\{ $\mathrm{a}=\mathrm{a}+\mathrm{b}$;
$\mathrm{b}=\mathrm{a}-\mathrm{b}$;
JOptionPane.showMessageDialog(null,a); \}
d) What will be the values of $\mathbf{i}$ and $\mathbf{z}$ after the following code is executed:
int $\mathrm{i}=0$;
int $\mathrm{z}=10$;
do
\{
$\mathrm{i}=\mathrm{i}+2$;
z--;
\}
while ( $\mathrm{i}<10$ );
e) Write the code given below using 'for' loop instead of 'while' loop : int $\mathrm{i}=1$;
while ( $\mathrm{i}<=5$ )
\{
$\operatorname{if}(\mathrm{i} * \mathrm{i}==4)$
jTextField1.setText(""+i);
$i=i+1$;
\}
(OR)
Find the out put of the above code.
f) Ms. Priya works as a programmer in "Avon Education" where she has designed a software to compute fee charges to be paid by the students. A screenshot of the same is shown below :


- Name of the student is entered by the user.
- Any one Course out of Pharmacy, Architecture and Arts \& Design is chosen by the user.
- If the student is eligible for Concession, the required checkbox is selected by the user.
- Based on the course selected, Fee Per Quarter is displayed in the appropriate textfield according to the following criterion :

| Course | Fee Per Quarter |
| :---: | :---: |
| Pharmacy | 2000.00 |
| Architecture | 2500.00 |
| Arts \& Design | 2300.00 |

- If the student is eligible for Concession, a concession of 7\% of Fee per quarter is calculated as the concession amount, otherwise concession amount is 0 .
- Fee to be paid is the Fee per quarter with the concession amount (if any) deducted from it.
Help Ms. Priya in writing the code to do the following :
(i) When 'Calculate Charges' button is clicked, 'Fee per quarter', 'Concession Amount', 'Fee to be Paid' should be calculated and displayed in the respective text fields.
(ii) When 'CLEAR' button is clicked, all the textfields, radiobuttons and checkbox should be cleared.
(iii) When 'Exit' button is clicked, the application should close.

Q5.
a) Consider the following table 'Furniture'. Write SQL commands for the statements (i) to (viii) and write output for SQL queries (ix) and (x).

Table : Furniture

| FCODE | NAME | PRICE | MANUFDATE | WCODE |
| :--- | :--- | ---: | ---: | :---: |
| 10001 | Dining | 20500 | 12-JAN-2017 | W01 |
| 10012 | Sofa | 35000 | $06-J U N-2016$ | W02 |
| 10023 | Coffee table | 4000 | 19-DEC-2016 | W03 |
| 10024 | Chair | 2500 | 07-APR-2017 | W03 |
| 10090 | Cabinet | 18000 | 31-MAR-2015 | W02 |

1) To display WCODE wise, WCODE and the highest price of Furniture Items
2) To display WCode of Furniture Items. There should be no duplicate values.
3) To display the average PRICE of all the Furniture Items, which are made of Wood with WCODE as W02.
4) To display NAMES and PRICE of those Furniture Items that have 'table' anywhere in their names.
5) To display FCODE, NAME and PRICE of items that have Price less than $<5,000$.
6) To display FCODE and NAME of each Furniture Item in descending order of FCODE.
7) To display the NAMES and PRICE increased by 500.00 of all the furniture items. (Price should only be displayed as increased; there should be no increase in the data in the table)
8) To display the details of all the Furniture Items which have Manufacturing 1 date (MANUFDATE) between 01-JAN-2016 and 15-JUN-2017 (inclusive of both the dates).
9) SELECT COUNT(DISTINCT PRICE) FROM Furniture;
10) SELECT SUM(PRICE) FROM Furniture WHERE WCODE='W03';

Q6.
a) Write SQLquery to create a table 'Inventory' with the following structure

| Field | Type | Constraint |
| :--- | :--- | :--- |
| MaterialId | Integer | Primary key |
| Material | Varchar (50) | NOT NULL |
| Category | Char |  |


| DatePurchase | Date |  |
| :--- | :--- | :--- |

b) Consider the following tables PATIENT and TEST and answer the questions that follow

Table : PATIENT

| PCODE | NAME | PHONE | DTADMIT | TESTID |
| :--- | :--- | :--- | :--- | :---: |
| 6473 | Amit Sharma | 912356899 | 19-JUN-2017 | T102 |
| 7134 | Rose Mathew | 886744536 | 12-NOV-2017 | T101 |
| 8786 | Tina Sharma | 889088765 | 06-DEC-2017 | T102 |
| 6477 | Vijay Shah | 714567445 | 07-DEC-2017 | T502 |
| 7658 | Venkat Fazal | 865545343 | 31-DEC-2017 | T101 |

Note : NAME holds the Names of patients.
DTADMIT holds Dates on which a patient was admitted to hospital.
TESTID holds Ids of Medical tests done on patients

Table : TEST

| TESTID | TESTNAME | COST |
| :--- | :--- | :--- |
| T101 | Platelet Count | 200.00 |
| T102 | Hemogram | 190.00 |
| T301 | Malaria Detection | 350.00 |
| T502 | Glucose Test | 150.00 |

Namethe Primary keys in both the tables and foreign key in 'PATIENT' table. State the reason for your choice.
c) With reference to the above given tables (in Q6 b), write commands in SQL for (i) to (iii).
i) To display Names of Patients, TESTID and Test names for those Patients who were admitted between '01-DEC-2017' and '15-DEC-2017' (both dates inclusive).
ii) To display Names of Patients, Test names and Cost of Test for those Patients who have "Sharma" in their names.
iii) To increase the cost of those tests in the table "TEST" by $<50.00$ that have cost below < 200.00

Q7.
a) How can e-learning help students learn at their own pace ?
b) 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 :

| 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 <br> categories : Teaching/Non-Teaching/Research Scholar |
| 4. | To let the user select facilities out of Gym, Yoga, Table <br> Tennis, Badminton and Aerobics. More than one facility may <br> be chosen. |

c) How does e-governance help in building trust between the Government and citizens?

## End of the Question Paper

