



INDIAN SCHOOL MUSCAT
THIRD PRELIMINARY EXAMINATION
INFORMATICS PRACTICES

CLASS: XII

Sub. Code: 065

01.02.2018

Max. Marks: 70

- 1(a)** Identify odd one out of the following: 2
Optical Fiber/Coaxial Cable/ Bluetooth/Twisted Pair Cable.
Give reason for your answer.

Ans Odd one : Bluetooth

Reason : Bluetooth is a wireless/unguided communication media while others are wired/guided communication media.

(1 mark for each part)

- (b)** How is it easier to diagnose fault in Star topology than in Bus topology? 2

Ans In Star topology each node is directly connected to a central hub / switch, hence fault diagnosis becomes easy.

In bus topology all the nodes are connected to the backbone cable. The signal travels through the entire length of the backbone and is received by the node for which it is intended. Hence, fault diagnosis is difficult.

(2 marks for correct answer)

NOTE : $\frac{1}{2}$ mark each for both topologies if are explained using either diagrams / text.

- (c)** What is the purpose of logical address of computer? 2

NOTE : Full 2 marks to be given if any part of question no. 1 is attempted correctly.

- (d)** Does Open source software only mean that the software is free of cost? Give reason for your answer. 2

Ans No , it does not only mean that the software is free of cost.

Reason: It also means that the source code is available to user with freedom to use , modify and distribute.

(1 mark for each part)

- (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

Ans Valid IP addresses: (i) , (ii)

Invalid IP address: (iv) 198.-1.1.1 because an IP address is a group of four bytes; each of which can be a number from 0 to 255. (iii) no alphabets

(1 mark for stating all the three valid IP addresses)

OR

$\frac{1}{2}$ mark for stating any two valid IP addresses)

($\frac{1}{2}$ mark for mentioning invalid address , $\frac{1}{2}$ mark for the reason)

- 2 (a) Write the value that will be assigned to variable x after executing the following statement: 1

Ans 59

(1 Mark for correct answer)

- (b) Consider the statement: 1
What is the datatype of variable choice? Write Java statement to declare the variable 'choice'.

Ans The data type of the variable choice is Float

Declaration : float choice=20.25;

($\frac{1}{2}$ mark for stating datatype as char)

($\frac{1}{2}$ mark for declaration)

- (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 do that? 1

Ans wrapStyleWord property, lineWrap property

(1 mark for correct answer)

NOTE: *Full 1 mark to be allotted if any one of the above properties is mentioned*

- (d) Write Java statement to: 1
Append a string "ABC" to the text that is already in the text area named jTextArea1.

```
jTextArea1.append("INFO"+" ");
```

(1 mark for correct answer)

NOTE : ($\frac{1}{2}$ mark to be allotted if `setText` is mentioned instead of `append`)

(e) Write the output of the following HTML code.

2

```
<ol start="7" type="A">
```

```
<li>Bake the mixture in oven for an hour</li>
```

```
<li>Remove from oven</li>
```

```
<li>Allow the mixture to stand for ten minutes</li>
```

```
<li>Serve</li>
```

```
</ol></code>
```

Ans G Bake the mixture in the oven for an hour
 H Remove from oven
 I Allow the mixture to stand for ten minutes
 J Serve

($\frac{1}{2}$ mark for each line of output)

NOTE: Full 2 marks to be allotted if :

`</code>` mentioned as an error

OR

'Error' as `` is an empty tag is mentioned

OR

'No output' / 'Error' is mentioned

(f) Ans: Any Two differences - 1 mark

2

XML Tags - 1 Mark

(1 mark for each part)

(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;
}
```

Ans if (success == -1)
 x1= "No result";
 else if (success == 0)
 x1= "Final result -Not successful";
 else
 x1= "result NOT known";

(2 marks for correct if-else-if construct and conditions)

(1 mark for correct use of if-else-if construct)
(1 mark for correct conditions)

3 (a)

1

Ans Database contains related tables.
 OR
 Database contains tables.
(1 mark for any correct answer)

(b)

1

Ans ALTER TABLE CUSTOMERS
 ADD GENDER CHAR(1);
 OR
 ALTER TABLE CUSTOMERS
 ADD GENDER CHAR;
 OR
 ALTER TABLE CUSTOMERS
 ADD COLUMN GENDER CHAR;
 OR
 ALTER TABLE CUSTOMERS
 ADD COLUMN GENDER CHAR(1);
(1/2 mark for ALTER TABLE)
(1/2 mark for ADD clause)
NOTE: VARCHAR(1) in place of CHAR should be accepted

(c)

Explanation of ACID property

2

(d)

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.

Ans Example:
 Table - Patient
 Columns - PatientId, PatientName, WardId
 Patient Id - Primary Key
 WardId - Foreign Key

*(1 mark for writing any three suitable column names
OR ¹/₂ mark for writing any two suitable column names)*

e) Correct out put 2 Marks

(¹/₂ mark for each line of output)

(f)

2

Ans **Similarity : Both the clauses are used for checking condition(s)**
 Difference : where clause is used for simple condition(s).
 Having clause is used for conditions with group of values.

e.g.

WHERE clause:

SELECT * FROM EMP WHERE DEPT = "PHYSICS " ;

HAVING clause :

SELECT SUM(SALARY), DEPT FROM EMP

GROUP BY DEPT HAVING COUNT(*) > 3;

OR

Any other valid example

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

Answer - Key

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

Ans r = 12 in the memory 13
s = 21

(1/2 mark for each correct answer)

(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);
```

Ans jTextField1 will display 3
jTextField2 will display 5

(1 mark for each correct answer)

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

2

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

Ans 2

(2 marks for correct value of C)

- (d) Write the value that will be stored in 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;
```

Ans Value of t will be 3.0

Loop executes 4 times

NOTE: 3 and 3.3 for value of t should also be accepted

(1 mark for correct value of 't')

(1 mark for correct number of iterations)

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

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

Ans Corrected code :

```
int j;
```

```
inti = 15;
int flag = 1;
for (j = 2 ; j < i; j++){

    If(i % j == 0)
    {

        flag = 0 ;

        break ;

    }

}
```

```
OR      inti=15;
int j;      j= 1;
while( j<i)
{
    if(      i % j == 0)
    {

        }j++; flag = 0 ;
        break ;

    }

}
```

(1/2 mark each for correcting any four errors)

OR

(1 mark for only identifying any four errors - without making any corrections)

f)

Answer -Key

Each Call is charged at Rs.1.00 .

Each SMS is charged at Rs. 0.50.

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

Ans `int Calls, Sms;
double Total,dataAmt = 0, grandTot, callsChg ,smsChg;
Calls = Integer.parseInt(jTextField3.getText());
Sms = Integer.parseInt(jTextField4.getText());
callsChg = Calls * 1.00 ;
smsChg = Sms * 0.5 ;
Total = callsChg + smsChg;//Total=(Calls*1.00)+(Sms*0.5);
if (jCheckBox1.isSelected())
dataAmt = 50.00;
grandTot = Total + dataAmt;
jTextField5.setText(""+ Total);
jTextField6.setText(""+dataAmt);
jTextField7.setText(""+grandTot);`

(1 mark for calculating 'Amount to Pay')

(1 mark for correct use of if statement)

(1 mark for calculating and displaying 'Grand Total')

(1/2 mark for displaying 'Calls and SMS Charges')

(1/2 mark for displaying 'Mobile Plan charges')

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

```
jTextField1.setText("");  
jTextField2.setText("");  
jTextField3.setText("");  
jTextField4.setText("");  
jTextField5.setText("");  
jTextField6.setText("");  
jTextField7.setText("");  
jCheckBox1.setSelected(false);
```

(1/2 mark for clearing any TextField and 1/2 mark for clearing the CheckBox)

NOTE : NULL in place of "" to be accepted for clearing text field.

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

System.exit(0);

(1 mark for correct answer)

5

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

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

1

Ans SELECT * FROM Inform WHERE Item='Cot';
OR
SELECT * FROM Inform WHERE Item IN('Cot');
(1/2 mark for SELECT)
(1/2 mark for WHERE)

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

Ans SELECT Item,UnitPrice FROM Inform
WHERE UnitPrice<800 AND Discount>5;

NOTE: && should be accepted in place of 'AND'

(1/2 mark for SELECT)
(1/2 mark for WHERE)

- (iii) To list the names of items and their date of purchase that were purchased after 31stDecember , 2015.

Ans SELECT Item, DatePurchaseFROM Inform
WHERE DatePurchase>'2015-12-31';
OR
SELECT Item, DatePurchaseFROM Inform
WHERE DatePurchase> 20151231;
(1/2 mark for SELECT)
(1/2 mark for WHERE)

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

1

Ans SELECT COUNT(Item) FROM Inform
WHERE Discount > 10;
(1/2 mark for SELECT)

($\frac{1}{2}$ mark for WHERE)

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

Ans **SELECT ItemCODE, UnitPrice**FROM Inform
ORDER BY UnitPrice DESC;

($\frac{1}{2}$ mark for SELECT)

($\frac{1}{2}$ mark for ORDER BY)

- (vi) To increase the Unit price of each item by 10% of their unit price. 1

Ans **UPDATE** Inform
SET UnitPrice= 1.10 * UnitPrice;
OR
UPDATE Inform
SET UnitPrice= UnitPrice+ .10 * UnitPrice;
OR
UPDATE Inform
SET UnitPrice= UnitPrice+ 10/100 * UnitPrice;

($\frac{1}{2}$ mark for UPDATE)

($\frac{1}{2}$ mark for SET)

- (vii) To display the highest unit price of items. 1

Ans **SELECT MAX(UnitPrice)**
FROM Inform;

($\frac{1}{2}$ mark for SELECT)

($\frac{1}{2}$ mark for MAX())

- (viii) To display the names of items that have 'Baby' anywhere in their item names) 1

Ans **SELECT Item** FROM Inform
WHERE Item LIKE '%Baby%';

($\frac{1}{2}$ mark for SELECT)

($\frac{1}{2}$ mark for LIKE Clause)

- (ix) **SELECT MID(Item,1,2)** FROM Inform; 1

Ans **MID(Item,1,2)**

Fr

Co

So

Ba

Ba

(1 mark for correct output)

- (x) **SELECT AVG(UnitPrice)**FROM Inform 1
WHERE DATEPURCHASE >'2015-01-01';

Ans **AVG(UnitPrice)**
1750.0

OR

AVG(UnitPrice)
1925.0

**NOTE : Option 2 to be accepted if updation is taken into consideration.
(1 mark for correct output)**

- 6 (a) “A & A” Company conducts workshops for employees of organizations. The 2 company requires data of workshops that are organized. Write SQL query to create a table ‘Workshop’ with the following structure:

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

Ans CREATE TABLE WORKSHOP
(
WorkshopId INTEGER PRIMARY KEY,
Title VARCHAR(50),
DateWorkshop DATE,
Numspeakers INTEGER
);

($\frac{1}{2}$ mark for CREATE TABLE)

(1 mark for Column Names with Data Types)

($\frac{1}{2}$ mark for PRIMARY KEY Constraint)

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

2

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.

Ans Table: Event

PRIMARY KEY - EventId

Table: Celebrity

PRIMARY KEY - CelebrityID

Table : Event

FOREIGN KEY - CelebrityID

Answer -Key

No, NumPerformers cannot be set as Primary key because

It may not be unique in every row (when more rows are added to the table later)

NOTE: Yes, should also be considered as in the given table NumPerformers contains UNIQUE and NOT NULL values.

($\frac{1}{2}$ mark for PRIMARY KEY of both tables and FOREIGN KEY of Event table)

($\frac{1}{2}$ mark for stating Yes / No and/or with correct reason)

- (ii) How many rows will be present in the Cartesian join of the above mentioned 2 tables?

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

Ans Number of rows in the Cartesian join = 16

No discrepancy. Because the same Celebrity may perform in more than one events.

NOTE:

"It is a foreign key column, hence it can store duplicate values" may also be accepted.

($\frac{1}{2}$ mark for stating the numbers of rows)

($\frac{1}{2}$ mark for stating no discrepancy without stating reason)

- (c) With reference to the above given tables (in Q6 b), Write commands in SQL for (i) to (iii)
- (i) To display EventId, Event name, Celebrity Id and Names of celebrities for 2 only those events that have more than 10 performers.

Ans SELECT EventId, Event, Event.CelebrityId, NAME

(i) FROM Event, Celebrity

WHERE Event.CelebrityId = Celebrity.CelebrityId AND NumPerformers>10;

OR

SELECT EventId, Event, E.CelebrityId, Name

FROM Event E, Celebrity C

WHERE E.CelebrityId = C.CelebrityId AND NumPerformers>10;

($\frac{1}{2}$ mark for SELECT)

($\frac{1}{2}$ mark for FROM)

($\frac{1}{2}$ mark for correct use of Join)

(¹/₂ mark for NumPerformers>10 condition)

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

Ans SELECT Event, Event.CelebrityId, Name

(ii) FROM Event, Celebrity
WHERE Event.CelebrityId = Celebrity.CelebrityId AND Name
LIKE ‘%Khan%’;

OR

SELECT Event, E.CelebrityId, Name

FROM Event E, Celebrity C

WHERE E.CelebrityId = C.CelebrityId AND Name LIKE
‘%Khan%’;

OR

SELECT E.Event, E.CelebrityId, C.Name

FROM Event E, Celebrity C

WHERE E.CelebrityId = C.CelebrityId AND C.Name LIKE
‘%Khan%’;

(¹/₂ mark for SELECT)

(¹/₂ mark for FROM)

(¹/₂ mark for correct use of Join)

(¹/₂ mark for Name LIKE ‘%Khan%’ condition)

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

Ans SELECT Event, Name, FeeCharged

(iii) FROM Event, Celebrity
WHERE Event.CelebrityId = Celebrity.CelebrityId AND
FeeCharged> 200000;

OR

SELECT Event, Name, FeeCharged

FROM Event E, Celebrity C

WHERE E.CelebrityId = C.CelebrityId AND FeeCharged>
200000;

OR

SELECT E.Event, C.Name, C.FeeCharged

FROM Event E, Celebrity C

WHERE E.CelebrityId = C.CelebrityId AND C.FeeCharged>
200000;

(¹/₂ mark for SELECT)

(¹/₂ mark for FROM)

(¹/₂ mark for correct use of Join)

(¹/₂ mark for FeeCharged> 200000 condition)

7

2

- (a) 1 Text Field 2. Text Field 3. Radio Button/ ComboBox 4. CheckBox/ListBox

Ans 1. There is usually a lack of internet/computer literacy among the disabled.
 2. Personal interaction is limited in e-governance, so the human element bond is missing which disabled people need.

(1 mark each for any two disadvantages)

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

Ans Online retailers usually offer customers a wider range of products at prices that are lesser than those of traditional stores because they have fewer infrastructural and operational costs.

(1 mark for stating any valid reason)

- (c) There is usually a lack of internet/computer literacy among the disabled.
 Personal interaction is limited in e-governance, so the human element bond is missing which disabled people need.