SET   A

INDIAN SCHOOL MUSCAT
ANNUAL EXAMINATION 2020
COMPUTER SCIENCE

CLASS: XI   **Sub. Code: 083**   Time Allotted: 3 Hrs.

20.02.2020   Max. Marks: 70

General Instructions:

- All questions are compulsory.
- Please check that this question paper contains 5 printed pages.
- Please check that this question paper contains 7 questions with subparts.
- All questions related to programming are based on PYTHON.

1 a	Define Application software.	1
b	Write the difference between compiler and interpreter.	1
c	What is public cloud computing?	1
d	Add the following binary number 10110111 and 1100101.	1
e	Name the law shown below and verify it using a truth table: A + B.C=(A+B).(A+C)	2
f	Draw the diagram of digital circuit for the function: **F = A' . B + (C+D')'**	2

g	Convert the following:
	   i. $(288)_{10}$ = (_____)$_{16}$
	   ii. (A2B)$_{16}$ to binary
		2

2 a	Which of the following are not valid identifier in Python : %per, two2, for, Print	1
b	What do you understand by errors? Write the difference between syntax error and run-time error.	2
c	What will be the output of the following code : print('ALL THE BEST\nAnnual Examination 2020') print("100+120") print(100%10) print(100//11)	2
d	What is the difference between '=' and '= = '. Explain with an example.	2
e	Will the following program execute successfully? If not correct it : s1=s2=0	2

```
for x in range(0,11):
    num=int(("Enter a Number"))
    (num>0)
    s1=s1+num
    else:
    s2=s2/num
print(S1 ,' and ', S2)
```

f   Write the equivalent Python statements for the following :   3

   i. $$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

   ii. Assign the value of variable N to variable N1.

   iii. To check whether 'S' exists in string 'Schedule' or not.

3 a   Write the output of the following program :   2

```
b=[4,6,7,4,5]
for i in range(1,3):
    for j in range (1,3):
        b[i]= 4* i + j
        print(b[i])
```

b   Write the output of the following program :   2

```
Str='HoMeLAnd'
nstr=' '
for i in range(len(Str)):
    if Str[i].isupper():
        nstr =nstr + Str[i].lower()
    else:
        nstr=nstr+'@'
print(nstr)
print(Str)
```

c   Evaluate and give the result: 2

   i.   not(False and True)

   ii. (25>10) or (8<5) or (True and not 0==0)

d   Consider the following Python program and convert it to for loop without changing the output   2
     values. Also give the output for the following code snippet:

```
N= 30
i=1
sum = 0
while i<N:
    if i%2!=0:
```

```
        sum = sum+i
    i= i+3
  print(sum)
```

e Write a program to check whether the given number is prime number or not.   3

f What is the difference between * and **. Also give the output for 2*3 and 2**3.   1

4 a Write the difference between mutable and immutable data types.   1

b Write the output for the following :   1

```
t=(((('a',1),'b','c'),'d',2),'e',3)
print(len(t))
```

c Identify and correct the error in the following :   1

My_Name= ' Grace'

Class = 11

print("My name and class is ", My_Name+Class)

d Write the output for the following :   2

import math

print (math.pow(2,4))

print(math.fabs(-4500.73))

print(math.ceil(60.789))

print(math.floor(74.79))

e The temperature of a week is given in WTEMP list in the form of day and its temperature   3
values.

WTEMP=['Mon',18, 'Tue',19, 'Wed',22, 'Thu',20, 'Fri',17, 'Sat',22, 'Sun',19]

Using the above list write a program to create and print two separate lists as given below :

Days =['Mon','Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']

Degrees =[18,19,22, 20, 17, 22, 19]

f Write a python code to sort a list of tuple elements in descending order of points using bubble   3 .
sort. The tuple-elements of the list contain the following information about different players:
(PlayerNo, Playername, Points)

5 a What do you understand by primary key? Give a suitable example of primary key from a   2
table containing some meaningful data.

b Observe the table 'Club' given below: 2

Member_id	Member_Name	Address	Age	Fee
M002	Nisha	Gurgaon	19	3500
M003	Niharika	New Delhi	21	2100
M004	Sachin	Faridabad	18	3500

i. Name the candidate key from the above table

ii. If a new column contact_no has been added and three more members have joined the club then how these changes will affect the degree and cardinality of the above given table.

c   Explain Alter table command with an example.   1

6 a   Write SQL commands for the queries (i) to (vi) and output for (vii) to (x) based on the tables   6+4
'SUITCASE' and 'SALE' given below.

SUITCASE

SID	SName	Price	SIZE	Qty_Store
S001	Samsonite	10000	LARGE	100
S002	Delsey	15000	MEDIUM	150
S003	VIP	20000	LARGE	200
S004	TRAVELPRO	7000	SMALL	250
S005	AMERICAN TOURISTER	25000	LARGE	100

SALE

SID	Qty_Sold	Quarter
S001	10	1
S003	5	1
S002	20	2
S003	10	2
S001	15	3
S002	20	3
S005	10	3
S003	15	4

i. To display all the details of those SUITCASE whose name ends with 'e'

ii. To display SName and Price of those SUITCASE which have price range in between 5000 and 9000.

iii. To display total quantity in store of LARGE type SUITCASE.

iv. To display SName and their quantity sold in first quarter from the table SUITCASE and SALE.

v. To increase the price of MEDIUM size SUITCASE by 1500.

vi. To display all the details of Suitcase in the descending order of their price.

vii. Select max(Price), min(qty_Store) from SUITCASE;

viii. Select COUNT(Distinct(Size)) from SUITCASE;

ix. Select W.Sname, Price From SUITCASE W, SALE S Where W.SID< > S.SID;

x. Select sum(Price) from SUITCASE where SIZE='LARGE';

7 a   What is cyber law.   2

b   What is identity theft.   2

c   What do you mean by a hacker and Trojan horse.   2

d   Write any 4 ways to tackle cyber abuse.   2

e   Which of the following crime(s) is/are covered under cyber-crime?   1

    i. Stealing brand new hard disk from a shop.

    ii. Getting into unknown person's social networking account and start messaging on his behalf.

    iii. Copying some important data from a computer without taking permission from the owner of the data.

    iv. Buying a second hand computer online.

f   Define the term Eavesdropping,   1

End of the Question Paper

Roll Number				SET B

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1 a	What is System Software?	1
b	Write the difference between RAM and ROM.	1
c	Write the full form of ASCII code.	1
d	Add the following binary number 110101 and 101111	1
e	State and verify Absorption law using truth table.	2
f	Draw the diagram of digital circuit for the function: $F = X' + Y \cdot (W.Y')'$	2
g	Convert the following: (i) $(440)_8 = (\underline{\hspace{3cm}})_{10}$ (ii) $(BAD)_{16}$ to binary.	2
2 a	Which of the following are valid identifier in Python : %per, two2, for, Print	1
b	Write the equivalent Python statements for the following : i. $Exp = 2(a^2 + b^2) / a - b$ ii. Assign the sum of two variables loop_count and petrol_cost to the variable sum. iii. To check whether 'T' does not exists in string 'Total Marks' or not.	3
c	What is a string and how is it created in python explain with an example.	2
d	What will be the output of the following code :	2

```
print('Graduation Ceremony \n Farewell 2020')
print("100+120")
print(75%4)
print(100//11)
```

e   Which abbreviated statements are used to replace if ..... else statements. Explain with an   2
example.

f   Will the following program execute successfully? If not correct it :   2

```
s1=s2=0
for x in range(0,11):
    num=int(("Enter a Number"))
    (num>0)
    s1=s1+num
    else:
    s2=s2/num
print(S1 ,' and ', S2)
```

3 a   Write the output of the following program :   2

```
List=[13,18,11,16,13,18,13]
print(List.index(18))
print(List.count(18))
List.append(List.count(13))
List.reverse()
print(List)
```

b   Write the output of the following program :   2

```
Str='SeLEcTiOn'
nstr=' '
for i in range(len(Str)):
    if Str[i].islower():
        nstr =nstr + Str[i].upper()
    else:
        nstr=nstr+'&'
print(nstr)
print(Str)
```

c   Which string method is used to implement the following :   2
    i.   To check whether given character is a letter or a number
    ii. To change the first character to upper case letter

d   Consider the following Python program and convert it to while loop without changing the   2
output values. Also give the output for the following code snippet:

```
sum=0
for a in range (2,20,4):
    if a%2==0:
        sum=sum+a
print ("Answer =",sum)
```

e   Write a program to check whether the given number is Perfect number or not.   3

f   How do you convert a string to number? Give an example.   1

4 a   Write the difference between tuple and dictionary data types.   1

b   Write the output for the following :   2
text="abbccbba"
counts={}
ct=0
lst=[]
for word in text:
    if word not in lst:
        lst.append(word)
        counts[word]=0
    ct=ct+1
    counts[word]=counts[word]+1
print(counts)
print(lst)

c   Write the output for the following :   2
import math
print(math.fabs(-500.73))
print(math.ceil(30.875))
print(math.floor(88.79))
print (math.pow(3,3))

d   Write a program to create a list Num with 10 different integer values and search for a   3
particular value. If the value is found display the message FOUND along with its position
otherwise display message NOT FOUND!!.

e   Write a program to print the following output using nested for loop :   3

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

5 a   Write any one difference between DDL and DML commands.   1
b   Observe the table 'Club' given below: 2

Member_id	Member_Name	Address	Age	Fee
M002	Nisha	Gurgaon	19	3500
M003	Niharika	New Delhi	21	2100
M004	Sachin	Faridabad	18	3500

    i.   Name the candidate key from the above table

    ii. If a new column contact_no has been added and three more members have joined the club then how these changes will affect the degree and cardinality of the above given table.

c   Distinguish between a Primary key and Candidate key with the help of suitable example of each.   2

6 a   Write SQL commands for the queries (i) to (vi) and output for (vii) to (x) based on the tables   6+4
'CONSIGNOR' and 'CONSIGNEE' given below.

CONSIGNOR

CnorID	CnorName	CnorAddress	City	Rent
NDO1	R Singhal	24, ABS Street	New Delhi	2000
NDO2	Amit Kumar	123, Palm Vihar	New Delhi	3000
MU15	R Kohli	5/A South Avenue	Mumbai	750
MU50	S Kaur	27 K Westend	Mumbai	4500
MU70	Kapil Dev	77 Nasir Pur	Mumbai	6300

CONSIGNEE

CneeID	CnorID	CneeName	CneeAddress	CneeCity
MU05	NDO1	Rahul Kishore	5 Park Avenue	Mumbai
ND08	NDO2	P Dhingra	16/J Moore Enclave	New Delhi
KO19	MU15	AP Roy	2 A Central Avenue	Kolkata
MU32	ND02	S Mittal	P 245 AB Colony	Mumbai
MU50	MU50	B P Jain	13 Block D A Vihar	Mumbai

    i.   To display the names of all Consignors from Mumbai

    ii. To display the CneeID, CnorName, CnorAddress,CneeName,CneeAddress for every Consignee

    iii. To display number of consignors in New Delhi

    iv. To display details of consignee Rahul Kishore

    v.   Add one column Remark of data type varchar and size 40 to the table CONSIGNOR

    vi. To delete the details of consignor Amit Kumar

    vii. Select Distinct City from CONSIGNOR;

viii. Select CneeName from CONSIGNEE wher CneeCity='Mumbai';

ix. Select CneeName, CneeAddress From CONSIGNEE where CneeCity not in ('Mumbai','Kolkatta');

x. Select Max(Rent), Min(Rent) from CONSIGNOR;

7 a	Define cyber law.	2
b	Write short note on identity theft.	2
c	Define the following terms :	2

    i. Cookies

    ii. Malware

d	Write any 4 ways to tackle cyber abuse.	2
e	Which of the following crime(s) is/are covered under cyber-crime?	1

    i) Stealing brand new hard disk from a shop.

    ii) Getting into unknown person's social networking account and start messaging on his behalf.

    iii) Copying some important data from a computer without taking permission from the owner of the data.

    iv) Buying a second hand computer online.
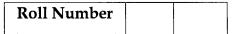
f	Define the term phishing.	1

End of the Question Paper

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General Instructions:

- All questions are compulsory.
- Please check that this question paper contains 5 printed pages.
- Please check that this question paper contains 7 questions with subparts.
- All questions related to programming are based on PYTHON.

1 a   What is Utility Software?   1

b   Write the difference between internal and external memory.   1

c   Expand the term ASCII and what is ASCII value for 'A'.   1

d   Add the following binary numbers   1
      i. 10110111 and 1100101

e   State and verify Distributive Law using truth table.   2

f   Draw the diagram of digital circuit for the function: 2
      F(X,Y,Z)=(X.Y).(Y'+Z')(X+Z)

g   Convert the following: 2
      i. $(426)_8 = ($_____$)_{10}$
      ii. $(AED)_{16}$ to binary

2 a   Which of the following is not valid identifier in Python :   1
      Price$, SNO2, if, Input

b   Write the equivalent Python statements for the following :   3
      i.   To check whether 'S' exists in string 'Schedule' or not.
      ii. Assign the result of dividing the integer variable sum by 3 into a variable costing.

iii. $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

c   What do you understand by errors? Write the difference between syntax error and logical   2
error.

d   What will be the output of the following code :   2

```
print(' Annual Examination 2020\n ALL THE BEST ')
print("100+120")
print(100%10)
print(100//11)
```

e   What is the difference between break and continue in python programming   2

f   Will the following program execute successfully? If not correct it :   2

```
X=input(' Enter a Number')
print("KLM"+890)
Sum= X+45
Print ['Answer  = ' ,Sum]
```

3 a   Write the output of the following program :   2

```
b=[4,6,7,4,5]
for i in range(1,3):
    for j in range (1,3):
        b[i]= 4* i + j
        print(b[i])
```

b   Write the output of the following program :   2

```
Str='CoNcAtenAtE'
nstr=' '
for i in range(len(Str)):
    if Str[i].isupper():
        nstr =nstr + Str[i].lower()
    else:
        nstr=nstr+'#'
print(Str)
print(nstr)
```

c   Which string method is used to implement the following :   2

     i.   To check whether given character is a letter or a number

    ii. To change the first character to upper case letter

d   Evaluate and give the result: 2

    i. not(False and True)

    ii. (25>10) and (8<5) and (True or not 0==0)

e   Write a program to check whether the given number is palindrome or not.   3

f   How do you convert a string to number? Give an example.   1

4 a   Write the name of list methods to Add an element in the end of the list.   1

b   Write the output for the following :   1

t=((('a',1),'b','c'),'d',2),'e',3)

print(len(t))

c   Identify and correct the error in the following :   1

My_Name= ' Grace'

Class = 11

print("My name and class is ", My_Name+Class)

d   Write the output for the following :   2

import math

print(math.fabs(-500.73))

print (math.pow(2,4))

print(math.ceil(16.875))

print(math.floor(74.79))

e   The Average marks for a class is stored in AVGMARK list of Subject and its average mark.   3

    AVGMARK=['MATHS',88, 'ENGLISH',94, 'SCIENCE',98, 'SOCIAL',96, 'HINDI',79]

    Using the above list write a program to create and print two separate lists as given below :

    SUBJECT =['MATHS','ENGLISH', 'SCIENCE', 'SOCIAL', 'HINDI']

    AVMARK =[88,94,98,96,79]

f   Write a program in Python to sort a list of integer elements using insertion sort.   3

5 a   Write two usage of DESC in SQL.   1

b   Observe the table 'Club' given below: 2

Member_id	Member_Name	Address	Age	Fee
M002	Nisha	Gurgaon	19	3500
M003	Niharika	New Delhi	21	2100
M004	Sachin	Faridabad	18	3500

i. Name the primary key from the above table

ii. If a new column contact_no has been added and three more members have joined the club then how these changes will affect the degree and cardinality of the above given table.

c   Write any two differences between Delete command and Drop command in SQL.   2

6 a   Write SQL commands for the queries (i) to (vi) and output for (vii) to (x) based on the tables   6+4
'SUITCASE' and 'SALE' given below.

SUITCASE

SID	SName	Price	SIZE	Qty_Store
S001	Samsonite	10000	LARGE	100
S002	Delsey	15000	MEDIUM	150
S003	VIP	20000	LARGE	200
S004	TRAVELPRO	7000	SMALL	250
S005	AMERICAN TOURISTER	25000	LARGE	100

SALE

SID	Qty_Sold	Quarter
S001	10	1
S003	5	1
S002	20	2
S003	10	2
S001	15	3
S002	20	3
S005	10	3
S003	15	4

i. To display all the details of those SUITCASE whose name ends with 'e'

ii. To display SName and Price of those SUITCASE which have price range in between 5000 and 9000.

iii. To display total quantity in store of LARGE type SUITCASE.

iv. To display SName and their quantity sold in first quarter from the table SUITCASE and SALE.

v. To increase the price of MEDIUM size SUITCASE by 1500.

vi. To display all the details of Suitcase in the descending order of their price.

vii. Select max(Price), min(qty_Store) from SUITCASE;

viii. Select COUNT(Distinct(Size)) from SUITCASE;

ix. Select W.Sname, Price From SUITCASE W, SALE S Where W.SID< > S.SID;

x. Select sum(Price) from SUITCASE where SIZE='LARGE';

7 a What is digital footprint? Why is it so important?   2

b What is social networking? Name any three of social networking sites.   2

c Define the following terms :   2
   i. Virus
   ii. Cookies

d Write four steps to combat cybercrime.   2

e Which of the following crime(s) is/are covered under cyber-crime?   1

   i) Stealing brand new hard disk from a shop.

   ii) Getting into unknown person's social networking account and start messaging on his behalf.

   iii) Copying some important data from a computer without taking permission from the owner of the data.

   iv) Buying a second hand computer online.

f Define the term Eavesdropping.   1

End of the Question Paper