

Roll Number

SET B



INDIAN SCHOOL MUSCAT
FINAL EXAMINATION
COMPUTER SCIENCE

CLASS: XII

Sub. Code: 083

Time Allotted: 3 Hrs.

01.02.2021

Max. Marks: 70

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
 - a. Section – I is short answer questions, to be answered in one word or one line.
 - b. Section – II has two case studies questions. Each case study has 4 case-based sub-parts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
 - a. Section-I is short answer questions of 2 marks each in which two question have internal options.
 - b. Section-II is long answer questions of 3 marks each in which two questions have internal options.
 - c. Section-III is very long answer questions of 5 marks each in which one question has internal option.
6. All programming questions are to be answered using Python Language only

PART - A

Section-I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no 1 to 21.

1. Which of the following is valid logical operator in Python: 1
(a) not in (b) = (c) << (d) //
2. What will be the value of the expression? (12%10%3)**3 1
(a) 0 (b) 1 (c) 8 (d) 12
3. Following set of commands is executed in shell, what will be the output? 1
print("Exam XII 2020-21" [3: 18:4])
(a) aI02 (b) error (c) mI21 (d) E 2-

4. What is the use of cursor() function? 1
5. A list is given as Num=[10, 20,30,40,50,60] , What will be displayed as Num[1:4] + Num[::-1] 1
6. Consider the following and fill in the blanks in Line 1 1


```
import mysql.connector as msq
Con=msq.connect(#connectionstring) # Assume all parameters are passed
if _____: #Line1
    print("Connected")
else:
    print("Error, Not connected")
    a. Con.connected()
    b. Con.isconnected()
    c. Con.is_connected()
    d. Con.connect()
```
7. Identify the valid identifier from the following : x+y , xy2xy, x2y2x, _x_y 1
8. A tuple is declared as T1 = (5,15,20,35) What will be the output of print(sum(T1)+min(T1)) ? 1
9. Name the protocol which is helpful in Video conference. 1
10. Expand the term URL. 1
11. What will be the value of the expression? 37 // 5**2: 1

(a) 4 (b) 14 (c) 12 (d) 1
12. What do you mean by an alternate key? 1
13. Identify the valid declaration of test: test={'Python':10, 'Good': 25.45} : 1

(a) Tuple (b) Dictionary (c) List (d) String
14. In SQL, Which command is used to see the list of tables in database 1
15. Name the attribute of cursor is used to get the number of records stored in the cursor returned by the query. 1
16. Anita wants to connect her office with the office of the other building in other city. Suggest her a suitable way to connect (in terms of transmission media) 1
17. Rearrange the following terms in increasing order of length. [1,2,3,5], [[1,2],[3,4],[5,7]],11,15, [11,23]], [[1,2,3,4],[1,3]], [1,2,3,[1,2,2,4],[4,3,9]] 1
18. Name the function used in unpickling. 1
19. SQL uses the following for pattern matching 1

a. Order by b. Group by c. Having d. Like

20. What is Recordset?

21. Write short note with example on Twisted pair cable.

Section-II

Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark

22. Given a table Order1, write the following queries using SQL.

Table: Order1

Orderno	Orderdate	CName	Cloc	Orders	Payments
1	12/02/2008	Avlon	Delhi	100000	90000
2	21/11/2008	Parason	Jaipur	230000	230000
3	15/10/2008	Trident	Raipur	120000	100000
4	13/1/2008	Avlon	Jaipur	240000	240000
5	17/7/2008	Trident	Delhi	340000	310000
7	16/6/2008	Nalco	Chennai	140000	140000

- Show the Companynames listed in the table sorted in in descending order of payments.
- Insert a column Discount_percent type int (4)
- Add values under Discount_percent column such that 10% discount is given to those companies who have made full payments (Orders=Payments)
- Find number of companies and average orders given to them city wise.
- List all orders given between 1/1/2008 to 12/10/2008.

23. Rima Khan of class 12 is writing a user defined function in Python to search for an employee number (passed as parameter to the function) from a table emp of database CMP. She has written the following code. As a programmer, help her to successfully complete the given task.

def Search(en):

import _____ as mycon # Line 1

con = mycon.connect(____='127.1.0.0', ____='root',password="admin",database="CMP") #Line2

x = con._____ # Line 3

x.execute("select * from emp where empno=_____".format(en)) #Line 4

results=x._____ #Line 5

print(results)

- Name the module he should import in Line 1.
- Fill in the blanks in Line 2 to connect to server
- Fill in the blank in Line 3 to create the cursor.
- Fill in the blank in Line 4 to fill the blank
- Fill in the blank in Line 5 to get the record from cursor.

Part – B

Section-I

24. Evaluate the following expressions:

- $47 \% 5 - 10 * 2 - 24 // 12$
- $3 > 6$ or $9 < 60$ and not $1 > 10$

25. Differentiate between 3G and 4G Mobile Telecommunication Technologies.

OR

Write two advantages and two disadvantages for STAR topology.

26. Expand the following terms: a) HTTP b) ISP c) ARPANET d) WLL 2

27. Differentiate between mutable and immutable data types with suitable example. 2

OR

Differentiate between pop() and peek() functions.

28. Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. 2

```
def chksum():
x=INT(input("Enter a number"))
    if (f%2 == 0):
        FOR i in range(2*X):
            printf(i)
        else:
            printf( '#' )
chkSUM()
```

29. Observe the following program and answer the questions that follow: 2

```
Area=["NORTH","SOUTH","EAST","WEST"]
```

```
for I in range(3):
```

```
ToGo=random.randrange(0,2) + 1
```

```
print(Area[ToGo],end=":")
```

(a) What is the minimum and maximum number of times the loop will execute?

(b) Find out, which line of output(s) out of (i) to (iv) will not be expected from the program?

#Output Options:

i. NORTH : SOUTH : EAST :

ii. SOUTH : EAST : SOUTH

iii. SOUTH : EAST : WEST :

iv. NORTH: EAST : NORTH :

30. Differentiate between Drop and Delete with suitable example. 2

31. What is the use of write () and writelines() functions with suitable example? 2

32. What is use of between keyword in SQL? Explain with suitable example. 2

33. Find and write the output of the following Python code: 2

```
poet= "SakESpHerE" ;
```

```
l=len(poet)
```

```
r=""
```

```
print("Original : ",poet)
```

```
for i in range(l):
```

```
    if poet[i].islower():
```

```
        r+=poet[i-1]
```

```
    elif poet[i].isupper():
```

```
        if poet[i]=='S':
```

```
            r+='X';
```

```
        elif(poet[i]=='E'):
```

```
            r+=poet[i-1].upper()
```

```
    else:
```

```

r+=chr(ord(poet[i])-1)
print(" Final : ",r)

```

Section- II

34. WAP to replace all perfect numbers by -1 in a list. 3

E.g

If the list num contain: [1,2,4,7,6,9,10,14,28]

Output: [1,2,4,7,-1,9,10,14,-1]

35. Write a function word3() in Python that prints words with the letters 'u' or 'o' present in a text file 'myfile.txt'. 3

If the 'myfile.txt' contents are as:

We are here to learn python. Python has so many features which make it more comfortable interface.

Output:

to

Python

features

more

comfortable

OR

Write a function count() in Python, which should count number of lines not starting with the letter S from a text file 'Sample.txt'.

36. Consider the following tables FACULTY and COURSES. Write SQL commands for the statements (1) to (4) and give outputs for SQL queries (5) to (8). 3

Table: FACULTY

F_ID	FNAME	LNAME	HIRE_DATE	SALARY
102	Amit	Mishra	12-10-1998	12000
103	Nitin	Vyas	24-12-1994	8000
104	Rakshit	Sony	18-5-2001	14000
102	Rashmi	Malhotra	11-9-2004	11000

Table: COURSES

C_ID	F_ID	CNAME	FEES
C21	102	Grid Computing	40000
C22	106	System Design	16000
C23	104	Computer Security	8000
C24	106	Computer Networks	15000

- a) **SELECT COUNT(DISTINCT F_ID) FROM COURSES;**
- b) **SELECT MIN(SALARY) FROM FACULTY,COURSES WHERE COURSES.F_ID = FACULTY.F_ID;**
- c) **SELECT FNAME, LNAME FROM FACULTY WHERE LNAME LIKE "M%";**

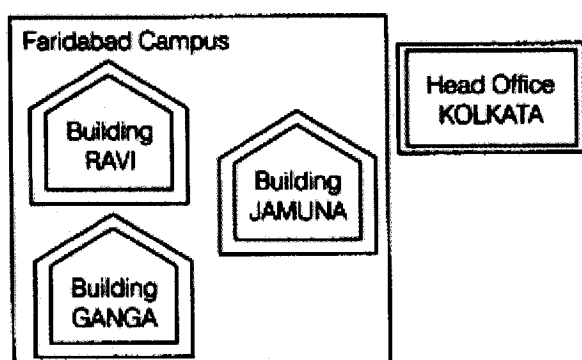
37. Write a function in Python PUSH() to insert an element of type int in the stack. After inserting the element display the stack. 3

OR

Write a function in Python POP() to remove the element from the stack and also display the deleted value.

Section-III

38. Granuda consultants are setting up a secured network for their office campus at Faridabad for their day-to-day office and Web based activities. They are planning to have connectivity between 3 buildings and the head office situated in Kolkata. Answer the questions (i) to (v) after going through the building positions in the campus and other details, which are given below: 5



Distance between various buildings

Building RAVI to Building JAMUNA	120 m
Building RAVI to Building GANGA	50 m
Building GANGA to Building JAMUNA	65 m
Faridabad Campus to Head Office	1460 km

Number of computers

Building RAVI	25
Building JAMUNA	150
Building GANGA	51
Head Office	10

- a) Suggest the most suitable place (i.e. block) to house the server of this organisation. Also, give a reason to justify your suggested location.
- b) Suggest a cable layout of connections between the building inside the campus.
- c) Suggest the placement of the following devices with justification : , (a) Switch (b) Repeater
- d) Use of Gateway in network.
- e) The organization is planning to provide a high speed link with its head office situated in the Kolkata using a wired connection. Which of the following cable will be most suitable for this job?
 - (i) Optical fiber (ii) Coaxial cable (iii) Ethernet

Table : SCHOOL

CODE	TEACHER NAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	Ravi Shankar	English	12/3/2000	24	10
1009	Priya Rai	Physics	03/09/1998	26	12
1203	Lisa Anand	English	09/04/2000	27	5
1045	Yashraj	Maths	24/08/2000	24	15
1123	Ganan	Physics	16/07/1999	28	3
1167	Harish B	Chemistry	19/10/1999	27	5
1215	Umesh	Physics	11/05/1998	22	16

Table: Admin

Code	Gender	Designation
1001	Male	Vice Principla
1009	Female	Co-ordinator
1203	Female	Co-ordinator
1045	Male	HOD
1123	Male	Senior Teacher
1167	Male	Senior Teacher
1215	Male	HOD

Write SQL statements for the following:

- To display TEACHERNAME, PERIODS of all teachers whose periods are more than 25.
- To display all the information from the table SCHOOL in descending order of experience.
- To display DESIGNATION without duplicate entries from the table ADMIN.
- To display TEACHERNAME, CODE and corresponding DESIGNATION from tables SCHOOL and ADMIN of Male teachers.
- To display all the information from the table SCHOOL and ADMIN have same CODE.

40. a) Write a function in Python to create the following csv file (emp.csv):

```
1,Peter,3500
2,Scott,4000
3,Harry,5000
4,Michael,2500
```

- b) Write Python function DISPEMP() to read the content of file emp.csv and display only those records where salary is 3000 or above.

OR

Consider a binary file emp.dat. Write

- A function to display the records of all those employees who are getting salaries between 30000 and 50000.
- A function to search for an employee whose name is given.

End of the Question Paper