MADURAI SAHODAYA SCHOOLS COMPLEX
&
COIMBATORE SAHODAYA SCHOOLS COMPLEX
AISSE/AISSCE

COMMON MOCK EXAMINATION

ACADEMIC YEAR 2022-23

SET – A

ROLL NUMBER : | | | | | | |

SUBJECT CODE : 083

GRADE : _____

SUBJECT: _____

DATE :_____

DAY : _____

MAX MARKS:_____

TIME : _____

GENERAL INSTRUCTIONS

1. *This question paper contains five sections, Section A to E.*
2. *All questions are compulsory.*
3. *Section A have 18 questions carrying 01 mark each.*
4. *Section B has 07 Very Short Answer type questions carrying 02 marks each.*
5. *Section C has 05 Short Answer type questions carrying 03 marks each.*
6. *Section D has 03 Long Answer type questions carrying 05 marks each.*
7. *Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.*
8. *All programming questions are to be answered using Python Language only.*

SECTION A		
1.	Consider the given expression: 0 and 14 or not 12 or 0 Which of the following will be correct output if the given expression is evaluated? a) 0 b) False c) 1 d) True	1
2.	Identify the incorrect variable name: a) type b) local c) as d)eval	1
3.	What will be the data type of the expression: not 0 or 1? a) bool b) int c) float d) error	1
4.	What will be the output of the following code:	1

	a={'Sun':1,'Mon':2,'Tue':3,'Wed':4} a[a.popitem()]='What?' a) {'Sun': 1, 'Mon': 2, 'Tue': 3, 'Wed': 'What?'} b) {'Sun': 1, 'Mon': 2, 'Tue': 3, ('Wed', 4): 'What?'} c) {'Sun': 1, 'Mon': 2, 'Tue': 3, 4: 'What?'} d) {'Sun': 1, 'Mon': 2, 'Tue': 3}	
5.	Select the correct output of the code: a='welcome to all' a=a.partition('l') print(a[2][:]) a) me to all b) come to a c) come to all d) come to al	1
6.	Fill in the blank: f=open('hello.txt',_____) f.seek(5,1) f.close() a) r b)rb c)r+ d)w	1
7.	Fill in the blank: _____ command is used to remove unique key from the table in SQL. a) drop b) remove c) drop index d) alter	1
8.	Select the correct statement, with reference to RDBMS: a) NULL can be a value in a Primary Key column b) '' (Empty string) can be a value in a Primary Key column c) A table with a Primary Key column cannot have an alternate key. d) A table with a Primary Key column must have an alternate key.	1
9.	seek() is a method of: a) File object b) csv module c) pickle module d) math module	1
10.	What will the following expression be evaluated to in Python? print(1.0%6**3+2.0//7) a) 0 b) 0.0 c)1 d)1.0	1
11.	Which of the following network protocol used to transfer files from one host to another host over a TCP-based network? a) TCP/IP b)VoIP c) FTP d)POP	1

12.	Which of the following statement(s) given an error during execution:
	Suppose a contains 'welcome to all',.
	a='welcome to all', # statement 1
	a+=(110) # statement 2
	a*=2 # statement 3
	a=a[0][:7]+a[0][11:] # statement 4
	
	a) Statement 1
	b) statement 2
	c) statement 2 and 3
	d) statement 2 and 4
		1

13.	In context of Python - Database connectivity, the function rowcount() is a method of which object? a) connection b) database c) cursor d) query	1
14.	A text file "muthu.txt" is stored on a computer. Identify the correct option out of the following options to open the file for reading. i) f=open("muthu.txt") ii) f=open("muthu.txt",'r') iii) f=open("muthu.txt",'rb') iv) f=open("muthu.txt",'r+b') a) (i),(ii) and (iv) b) (ii) and (iv) c) (i) and (ii) d) (i),(ii) and (iii)	1
15.	Which of the following command is used to SELECT only one copy of each set of duplicate rows? a) DISTINCT b) UNIQUE c) PRIMARY d) COUNT	1
16.	A text file is opened using the statement f=open("muthu.txt"). The file has a total of 5 lines. Which of the following options will be true if statement 1 and 2 are executed in order? Statement 1: a1=f.readline(5) Statement 2: a2=f.readlines() a. a1 will be a string and a2 will be a list with 1 element.	1

	b. a1 will be a list and a2 will be a string. c. a1 will be a string and a2 will be a list with 5 element. d. a1 and a2 both are string.	
	Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as (a) Both A and R are true and R is the correct explanation for A (b) Both A and R are true and R is not the correct explanation for A (c) A is True but R is False (d) A is false but R is True	
17.	Assertion(A) : The seek() method is used to change the position of the file pointer. Reason(R) : Offset mode can have any of the two values 0 and 1.	1
18.	Assertion(A): Assertion (A): If L is a list, then L+=range(0,5,2) is an invalid statement. Reason (R): Only a list can be concatenated to a list.	1
	SECTION B	
19	Find the error(s) in the following code snippet and write the corrected code. *STRING="welcome to all"* *N=""* *for S in range(0:8)* *if STRING(S)='aeiou'* *print(S(STRING))* *else:* *printf("NO")*	2
20	a) Write two points of difference between HTTP and HTTPS. OR b) Write two points of difference between packet switching and circuit switching.	2
21	(a) Given is a Python string declaration: a='sadhana-mdu' Write the output of: print(a[0:15][0:len(a):2][::2]) OR (b) Write the output of the code given below: d1 = {"name": "karan T", 'age': 17}	1 1

	a=d1.setdefault('age',18) d1.update({"Age":18}) print(d1,a,sep='$')	
22	What do you understand by Candidate Keys in a table? Give a suitable example of Candidate Keys from a table containing some meaningful data.	2
23	(a) Write the full forms of the following : (i) ARPANET ii)VoIP (b) Which type of network (out of LAN, PAN and MAN) is formed, when you connect two mobiles using Bluetooth to transfer a video?	1 1

24	Predict the output of the Python code given below:
	def hello():
	a=['MDU','MS','CGL','TBM']
	k=-1
	for i in ['MDU','MS','CGL','TBM'][:-2]:
	if i in ['A','E','I','O','U']:
	a[k]=['MDU','MS','CGL','TBM'][k]
	k+=1
	else:
	a[k]=['MDU','MS','CGL','TBM'][k]
	k-=1
	print(a)
	hello()
	OR
	t1= ['CS','IP','IT']
	list1=t1
	new_list = []
	for i in list1:
	if t1.index(i) %2 !=0:
	new_list.append(t1.pop())
	elif t1.index(i) //2 ==0:
	new_list.append(t1.insert(len(t1)-1,t1.pop()))
	print(new_list,list1,t1,sep='#')
		2

25	If a column marks in a table student has 6 entries, viz. 90,89,NULL,98,98,NULL then what will be the output of the following	2

query?
SELECT COUNT(DISTINCT(MARKS)),COUNT(MARKS) FROM STUDENT;

SETCTION C

26 (a) Consider the following table structure: 1+2

Table :Student

FIELD	**TYPE**	**NULL**	**KEY**
ROLLNO	CHAR(5)	NO	PRIMARY
SNAME	VARCHAR(10)	NO	NOT NULL
AGE	INT(5)	YES	UNIQUE

(i) Write a SQL query to remove unique constraints from the table.

(b) Consider the following table:

Table : XII_A

Rollno	Sname	Age	Dob	Stream
A01	Karan	16	1/12/2007	PCMC
A02	Charudharsan	15	24/04/2006	BS
A03	Diwahar	16	20/03/2007	BS
A04	Jiffin	16	10/10/2006	PCMB
A05	Karthikeyan	15	1/2/2006	BS

(i) Select sname,stream from XII_A having stream like '%B%';

(ii) Select stream, count(*) from XII_A group by stream having count(Stream)<=1;

(iii) Select Age, Stream from XII_A where Age between 15 and 15 order by sname;

(iv) Select Rollno, Stream from XII_A where Stream like 'P%B' and stream <>'BS';

27 Write a method NO_VOWELS_WORDS() in Python to read the content of a text file and count how many words contains vowels characters in the file. 3

Example: If the file content is as follows:

My first book was

Me and My Family.

It gave me chance to be

Known to the world.

The NO_VOWELS_WORDS() function should display the output as: No. of such words: 2

OR

Write a function COUNTWORD( ) which counts all the words from the text file WELCOME.txt whose length is more than 7 or those which ends with 's' or 'S'.

For example, if the Book.txt file contains

India is my country

All Indians are my brothers and sister's

I respect all brothers and sisters

then the output should be: 3

28 (a) Write the outputs of the SQL queries (i) to (iv) based on the relations student and sports given below: 3

TABLE : STUDENT

ROLL_NO	SNAME	AGE	GENDER	DOB	TOTAL
A01	AKILAN S	16	M	2006-5-19	489
A02	YAZHINI	12	F	2011-1-28	456
A03	AVINESH	15	M	2007-6-20	345
A04	DEEPAK	20	M	NULL	456
A06	ANU	22	O	2000-5-21	452

TABLE: SPORTS

ROLL_NO	GNAME
A01	HOCKEY
A02	KABBADI
A03	HOCKEY
A06	CRICKET

(i) SELECT ROLL_NO,AGE,GNAME FROM STUDENT,SPORTS WHERE STUDENT.ROLL_NO=SPORTS.ROLL_NO AND GNAME LIKE '_R%';

(ii) SELECT AGE,GENDER FROM STUDENT WHERE DOB IS NOT NULL AND AGE>15;

(iii) SELECT SNAME,GENDER FROM STUDENT WHERE AGE NOT IN(12,22);

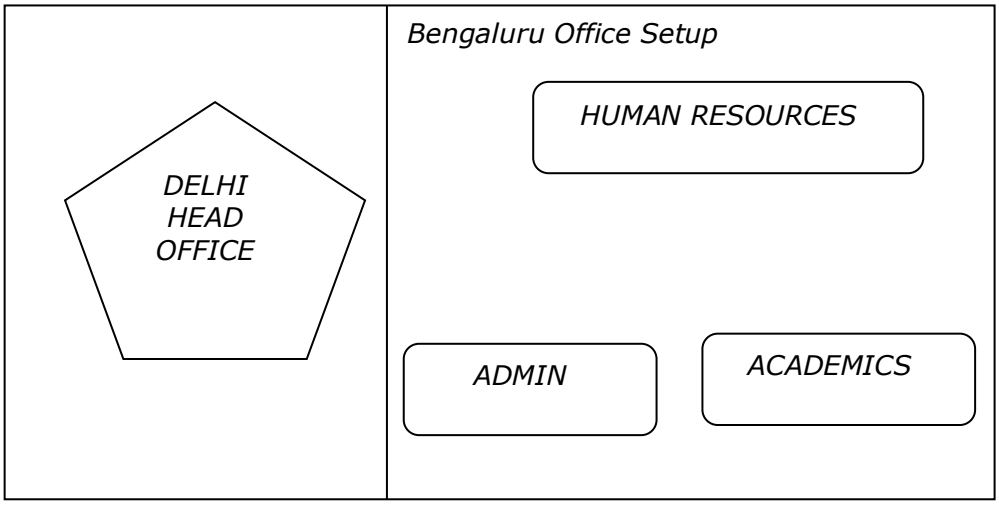
(iv) SELECT GENDER,AVG(TOTAL) FROM STUDENT WHERE GENDER IN('M','F') GROUP BY GENDER;

(b) Write the command to view all tables in a database.

29 Write a function SUM_LIST(L), where L is the list of elements passed 3

	as argument to the function. Herewith input are given [5,15,6,1,12,10]. With the help of given inputs you are expected to generate the following output: The sum_list will have [5, 20, 26, 27, 39, 49]	
30	A list contains following record of a employee: [employee_no,employee_name,salary,mail_id] Write the following used defined functions to perform given operations on the stack. (i) Push_element(a,List) – To push an object containing employee name and mail id of employees who are having gmail id to the stack. (ii) Pop_element(List) – To pop the objects from the stack and display them. Also display "Stack empty: when there are no elements in the stack. For example: If the lists of employee details are: [['E1','Akilan',35000,'akilan_e1@gmail.com'] ['E2','Charu',45000,'charu_e2@yahoo.com'] ['E3','Yazhini',25000,'yazhini_e3@gmail.com'] ['E4','Muthu',31000,'muthu_e4@rediff.com'] The output should be: ['Yazhini','yazhini_e3@gmail.com'] ['Akilan','akilan_e1@gmail.com']] Stack Empty OR (a) Avinesh has a list containing integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list. • Traverse the content of the list and push all positive numbers into a stack. • Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[2,-10,23,-34,-67,34,12,-78,-56] Sample Output of the code should be: 12 34 23 2	3

	SECTION D	
31	R K International Inc. is planning to connect its Bengaluru Office setup with its Head Office in Delhi. The Bengaluru Office G.R.K International Inc is spread across an area of approx. 1 square kilometer, consisting of 3 blocks- Human Resources, Academics and Administration. You have to suggest the best network related solutions for them for issues/problems raised in question nos. (i) to (v), keeping in mind the distances between various blocks/locations and other given parameters.	5



Shortest distances between various blocks:

Block	Distance
Human Resources to Admin	110 m
Human Resources to Academics	75 m
Academics to Admin	120 m
Delhi Head Office to Bengaluru	2450 km

Number of computers:

Block	Number of computers
Human Resources	170
Admin	30
Academics	90
Delhi Head Office	35

(i) Suggest the most suitable block in Bengaluru Office

		setup, to host the server. Give a suitable reason with your suggestions. (ii) Suggest the most suitable media to provide secure, fast and reliable data connectivity between Delhi Head Office and the Bengaluru Office setup. (iii) Suggest the cable layout among the various blocks within the Bengaluru Office Setup for connection the Blocks. (iv) Suggest a suitable networking device to be installed in each of the blocks essentially required for connecting computers inside the blocks with fast and efficient connectivity. (v) Suggest why should a firewall be installed at the Bengaluru office?	
32	(a)	Write the output of the code given below: a,a1=5,2 def welcome(a1,b1=2): global a a=6 a*=a1 b1//=a return a,b1 print(welcome(3),welcome(2,-5),sep='&')	2+3
	(b)	The code given below reads records from the table named Vehicle and displays only those records which have model later than 2010. The structure of a record of table Vehicle is: V_ID – integer; Name – string; Model – integer; Price – integer Note the following to establish connectivity between Python and MYSQL: • Username is root • Password is sadhana • The table exists in a MYSQL database named Transport. • The details (RollNo, Name, Clas and Marks) are to be accepted fromthe user. Write the following missing statements to complete the code: Statement 1 – to create the cursor object	

Statement 2 – to execute the query that extracts records of those vehicles whose model is greater than 2010.
Statement 3 - to read the complete result of the query into the object named data.

```
import mysql.connector as mysql
def display():
    con1=mysql.connect(host="localhost",user="root",
password="sadhana", database="sadhana")
_________________ #Statement 1
print("Students with marks greater than 75 are : ")
q="Select * from vehicle where model>2010"
_____________________ #Statement 2
data= _____________________ #Statement 3
for rec in data:
    print(rec)
```

OR

(a) Predict the output of the code given below:

```
s='Rs.10'
U=''
for i in s:
   if i.upper() and i.islower():
      U+=''
   elif i.isdigit():
      U+=i
   else:
      U=U
print('$'+U)
```

(b) The code given below accepts the increments the value of Clas by 1 for each student. The structure of a record of table Student is:
RollNo – integer; Name – string; Clas – integer; Marks – integer

Note the following to establish connectivity between Python and MYSQL:

- Username is root, Password is sadhana

		• The table exists in a MYSQL database named school.
		Write the following missing statements to complete the code:
		import mysql.connector as mysql
		def sql_data():
		con1=mysql.connect(host="localhost",user="root",
		password="sadhana")
		_____ #Statement 1
		crsr.execute("use sadhana")
		_____ #Statement 2
		crsr.execute(querry)
		_____ # Statement 3
		print("Data updated successfully")
		Statement 1 – to create the cursor object.
		Statement 2 – to create the query to update the table.
		Statement 3- to make the updation in the database permanent	

33	(a)	What do you understand by pickling and unpickling?	5
	(b)	Write a Program in Python that defines and calls the following user defined functions: (i) ADD() – To accept and add data of an item to a CSV file 'student.csv' . Each record consists of stu_id, stu_name, gender and tot_marks. (ii) COUNTER() – To display the records of the student whose gender is female.	
		OR	
	(a)	Give any one point of difference between a csv file and a binary file.	
	(b)	Write a program in python that defines and calls the following user defined functions: (i)ADD() – To accept and add data of an item to a CSV file student.csv. stu_id, stu_name, gender and age. (ii) COUNTER() To display the records of the student who is age in the range of 5 to 15.	
		SECTION E	
34	Avinesh of class 12 is writing a program to store a character and find		4

their equivalents ASCII value using a dictionary. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____     #Line 1
asc = {'A':65,'B':66,'C':67,'D':68,'E':69,'F':70,'G':71}
f1 = open("ASCII.dat",'____') #Line 2
pickle.dump(asc,f1)
f1.close()
f2 = open("ASCII.dat",'___') #Line 3
num = pickle._____ #Line 4
f2.close()
n = 0
while n!=-1:
    print("Enter only the following characters: A,B,C,D,E,F,G")
    print("or enter -1 to exit")
    n = input("Enter Character")
    if n!= -1:
        print("Equivalent ASCII value of this character is:",num[n])
    else:
        print("Thank You")
```

(i) Which module should be imported in the program? (Statement 1)

(ii) In which mode, Avinesh should open the file to add data into the file in Statement #2

(iii) Fill in the blank in Line 3 to read the data from a binary file.(Statement 3)

(iv) Fill in the blank in Line 4 to read the contents of the file "ASCII.dat(Statement 4)

35 Karan creates a table RESULT with a set of records to maintain the marks secured by students in IP, BS, ACC and their total score. After creation of the table, he has entered data of 6 students in the table. 1+1+2

Table :RESULT

ROLLNO	ENG	BS	ACC	ECO	IP	TOTAL
A10	67	90	67	56	70	350
A11	90	89	90	NULL	65	334
A12	56	23	67	45	NULL	191

A13	89	42	78	78	67	354
A14	56	56	67	67	53	299
A15	89	90	89	90	34	392

Table : SPORTS

ROLLNO	GRADE
A11	B
A12	A+
A14	C+
A14	S
A15	A

Based on the data given above answer the following questions:

(i) Identify the most appropriate column, which can be considered as Primary key.

(ii) Which table should he create first – Result or Sports? Justify your answer.

(iii) Write the statements to:

(a) Write the SQL statement to add a column avg of type float(5,2) to the table result, assuming that table result has already been created.

(b) Increase the IP marks of the students by 2% whose mark is less than 55.

OR (Option for part iii only)

(iii) Write the statements to:

a. Remove a column avg in the table.

b. Add a column REMARKS in the table with data type as varchar with 50 characters