



BE GOOD

DO GOOD

OM SADHANA CENTRAL SCHOOL

FULL PORTION 4 (2020-2021)

MARKS : 70

EXAM NO:

DURATION : 3.00 Hrs.

DATE :

SUBJECT: COMPUTER SCIENCE (NEW) – 083

General Instructions:

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

Q.No	Part-A	Marks
	<b>SECTION-I</b> <b>Attempt any 15 questions from question no 1 to 21.</b>	
1	Which of the following is not a valid identifier name in Python? Justify reason for it not being a valid name. a) break    b) NONE    c) range    d)6hello	1
2	Find the output - >>>A = [67, 21, 'hello', 'brother'] >>>A.remove('hello') >>>print ( A [-3])	1
3	Name the Python Library modules which need to be imported to invoke the following functions: (i) uniform() (ii) dump()	1
4	Which of the following are valid membership operator in python: (i) ==    (ii) is    (iii) and    (iv) in	1
5	Predict the output: >>>S1='Hello brother' >>>S1=S1[-4:] >>>print(S1**2)	1
6	What will be the result of the following code? A='OK' B='TK' C=0 while(C<len(A): print(A[C],B[C]) C=C+1	1

7	Predict the output: def sadhana(): print("A=",A) print(sadhana(10))	1																																				
8	Which of the following are Keywords in Python ? (i) assert   (ii) false   (iii) range   (iv) with	1																																				
9	A _____ is networking device having multiple ports that are used for connecting multiple computers.	1																																				
10	Write the full form of NIC.	1																																				
11	Which clause is used to remove redundant data from a relation.	1																																				
12	Which keyword is used to select rows containing column that match a wildcard pattern?	1																																				
13	The _____ refers to a logical set of records that are fetched from the database by executing an SQL query.	1																																				
14	Differentiate between Degree and Cardinality.	1																																				
15	Give one example of each – Guided media and Unguided media	1																																				
16	Write a Python Dictionary named Dct with 10 keys 0..9, each having values as 500.	1																																				
17	Find the output of the following: >>> a="computer science" >>> a[-10:-1:1]	1																																				
18	The _____ clause combines all those records that have identical value in a particular fields or a group of fields.	1																																				
19	Write the expand form of Wi-Fi.	1																																				
20	Nulls are inserted in the table by typing NULL without quotes.(TRUE/FALSE)	1																																				
21	Rearrange the following terms in increasing order of data transfer rates. Gbps, Mbps, Tbps, Kbps,bps	1																																				
<b>SECTION II</b>																																						
<b>Both the case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark.</b>																																						
22	<p>A School is considering to maintain their student data using SQL to store the data. As a database administer, Kali has decided that :</p> <p>Name of the database - Sadhana Name of the table - students The attributes of students are as follows: S_ID - character of size 3 FIRST_NAME – character of size 10 LAST_NAME– character of size 10 AGE - numeric DOB– Date GROUP– character of size 10</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>S_ID</th> <th>FIRST_NAME</th> <th>LAST_NAME</th> <th>AGE</th> <th>DOB</th> <th>GROUP</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>AGREJ</td> <td>DEV</td> <td>18</td> <td>12-04-2003</td> <td>CS/MATHS</td> </tr> <tr> <td>002</td> <td>NAVEEN</td> <td>KALISH</td> <td>19</td> <td>11-02-2002</td> <td>CS/MATHS</td> </tr> <tr> <td>003</td> <td>NITHIN</td> <td>BABU</td> <td>19</td> <td>11-01-2002</td> <td>CS/MATHS</td> </tr> <tr> <td>004</td> <td>ARUN</td> <td>DEEPAK</td> <td>19</td> <td>10-02-2002</td> <td>BIO/MATHS</td> </tr> <tr> <td>005</td> <td>SWATHI</td> <td>R C</td> <td>18</td> <td>11-03-2003</td> <td>CS/MATHS</td> </tr> </tbody> </table> <p>a) Write a query to create the given table STUDENTS. b) Identify the attribute best suitable to be declared as a primary key. c) Kali wants to increase the size of the FIRST_NAME column from 10to</p>	S_ID	FIRST_NAME	LAST_NAME	AGE	DOB	GROUP	001	AGREJ	DEV	18	12-04-2003	CS/MATHS	002	NAVEEN	KALISH	19	11-02-2002	CS/MATHS	003	NITHIN	BABU	19	11-01-2002	CS/MATHS	004	ARUN	DEEPAK	19	10-02-2002	BIO/MATHS	005	SWATHI	R C	18	11-03-2003	CS/MATHS	4
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	<p>20 characters. Write an appropriate query to change the size.</p> <p>d) Kali wants to remove the table STUDENTS from the database SADHANA. Which command will he use from the following:</p> <p>i) DELETE FROM STUDENTS;  ii) DROP TABLE STUDENTS;  iii) DROP DATABASE SADHANA;  iv) DELETE * FROM STUDENTS;</p> <p>e) Write a query to display the Structure of the table STUDENTS, i.e. name of the attribute and their respective data types.</p>	
23	<p>Rathesh of class 12 is writing a program to create a CSV file "student.csv" which will contain Name, Date of Birth and place. He has written the following code. As a programmer, help him to successfully execute the given task.</p> <pre>import _____ #Line 1 with open('E:/student.csv', _____) as f: #Line 2     w = csv. _____(f) #Line 3     ans= 'y'     while (ans== 'y'):         name= input("Name?: ")         date = input("Date of birth: ")         place = input("Place: ")         w.writerow([name, date, place])         ans=input("Do you want to enter more y/n?: ") F=open("E:/student.csv", 'r') reader = csv. _____(F) #Line 4 for row in reader:     print(row) F. _____( ) #Line 5</pre> <p>(a) Name the module he should import in Line 1.  (b) In which mode, Rathesh should open the file to add data into the file.  (c) Fill in the blank in Line 3 to write the data to the csv file.  (d) Fill in the blank in Line 4 to read the data from a csv file.  (e) Fill in the blank in Line 5 to close the file.</p>	4
<b>Part – B</b>		
<b>SECTION-I</b>		
24	<p>Evaluate the following expressions:</p> <p>a) <math>3*2**4//6+2\%2</math>  b) <math>10&gt;34</math> and <math>10==10</math> or <math>34\%2==0</math> or not <math>10&gt;20</math></p>	2
25	<p>What is the significance of cookies stored on a computer?</p> <p style="text-align: center;">Or</p> <p>Who are hackers? Who are crackers?</p>	2
26	<p>Expand the following terms:</p> <p>a) WLL      b) LTE      c) SLIP      d) LCP</p>	2
27	<p>Predict the output :</p> <pre>A=100 def hello(A,B):     print(A,B)     return A+B c=hello(500,300) print(A,c)</pre>	2

	c1=hello(200,c)  OR Differentiate between Actual parameter and Formal parameter.	
28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. 300=H WHILE H>0 IF H%2=0 Print("Even Number") Else Print("Odd Number") H=H-50	2
29	What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the minimum values that can be assigned to each of the variables start and end. import random H=[21.0,34.5,56.4,78.5] start=random.randint(1,4) end=random.randrange(0,len(H)) for I in range(start,end): print (H[I],end="#") i) 34.5#56.4#   ii) 21.0#34.5#56.4#   iii) 56.4#   iv) 56.4#78.5#	2
30	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	2
31	Differentiate between primary key and foreign key.	2
32	Write the full forms of DCL and DML. Write any two commands of DCL in SQL.	2
33	Find and write the output of the following Python code: def display(a): a1="" for i in range(0,len(a)): if(a[i].isspace()): a1=a1+" " elif(a[i].isdigit()): a1=a1+"&" elif(a[i].isalpha()): a1=a1+a[i].upper() print(a) display("Welcome 2 All")	2
	<b>SECTION- II</b>	
34	Write a function listreplace (ARR)in Python, which accepts a list ARR of numbers , the function will replace the odd number by value 100 and multiply even number by 10 . Sample Input Data of the list is: a=[10,20,23,45] listreplace(a,4) output : [100, 200, 123, 145]	3
35	Write a function in python to count the number of digits and number of alphabets in a text file "Sadhana.txt". If the file contents are as follows: Be Good Do Good Welcome 2 all brothers and sisters Thank you 2 all brothers and sisters The output of the function should be: Number of digits:2	3

Number of alphabets:71

OR

Write a program to read a text file and display the count of lowercase and uppercase letters in a text file "Hello.txt". If the file contents are as follows:  
 Be Good Do Good  
 Welcome 2 all brothers and sisters  
 Thank you 2 all brothers and sisters  
 The output of the function should be:  
 No.of uppercase:6  
 No.of lowercase :64

36 Write the output of the SQL queries (i) to (iii) based on the table:  
 Table : ITEMS

CODE	TCODE	INAME	QTY	PRICE	COMPANY
1001	T01	DIGITAL PAD	120	11000	XENITA
1006	T02	LED SCREEN	70	38000	SANTORA
1004	T01	CAR GPS SYSTEM	50	21500	GEO
1003	T02	DIGITAL CAMERA	160	8000	DIGICLICK
1005	T03	PEN DRIVE	600	1200	STOREHOME

i. SELECT MAX (PRICE), MIN (PRICE) FROM ITEMS;  
 ii. SELECT PRICE \* QTY AMOUNT FROM ITEMS WHERE CODE = 1004;  
 iii. SELE CT DISTINCT TCODE FROM ITEMS;

37 Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.

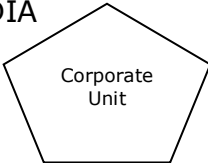
OR

Write a function in Python POP(Arr), where Arr is a stack implemented by a list of numbers. The function returns the value deleted from the stack.

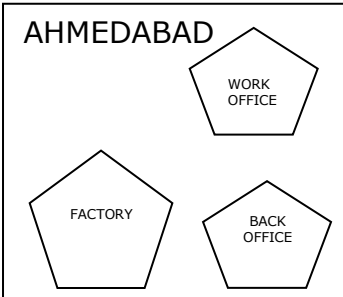
**SECTION III**

38 "New York Avenue" is planning to expand their network in India, starting with two cities in India to provide infrastructure for distribution of their canned products. The company has planned to set up their main offices in Ahmedabad, at three different locations and have named their offices as "Work office" , "Factory" and "Back office". The company has its corporate unit in Delhi.

**INDIA**



**AHMEDABAD**



Shortest distance between various locations:

Work office	Back office	110 Mtr
Work office	Factory	14 Km
Work office	Corporate office	1280 Km
Back office	Factory	13 Km

Number of computers installed at various locations are as follows:

Work Office	200
Back Office	115
Factory	67
Corporate	75

- i. Suggest the most suitable place to house the server for this company.
- ii. Suggest the kind of network required (out of LAN,MAN,WAN) for connecting each of the following offices:
  - Work office and Factory
  - Work office and Back office
- iii. Which one of the following devices will you suggest for connecting all the computers within each of their units?
  - Switch/Hub
  - Modem
  - Telephone
- iv. Which of the following communication media, you will suggest to be procured by the company for connecting their local offices in Ahmedabad for very effective communication?
  - Telephone Cable
  - Optical Fibre
  - Ethernet Cable
- v. Suggest a cable layout for connecting the company's local office units located in Ahmedabad.

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Write SQL commands for the following queries (i) to (v) based on the relation CAB and CUSTOMER:

TABLE: CAB

VCODE	VEHICLENAME	MAKE	COLOR	CAPACITY	CHARGES
100	Innova	Toyota	White	7	15
102	SX4	Suzuki	Blue	4	14
104	C-Class	Mercedes	Red	4	35
105	A-Star	Suzuki	White	3	14
108	Indigo	Tata	Silver	3	12

TABLE :CUSTOMER

CODE	CNAME	VCODE
1	Muthu	101
2	Ashok	108
3	Vignesh	105
4	Santha kumar	104

- i. To display the names of all the white colored vehicles.
- ii. To display name of vehicle, make the capacity of vehicles in ascending order of their sitting Capacity.
- iii. To display the highest charges at which a vehicle can be hired from CAB.
- iv. To display the customer and the corresponding name of the vehicle hired by them.
- v. To add a new row in the CAB table with the following data:  
109,"Indigo", "Tata", "White",10,20

5

40	<p>A binary file "emp.dat" has structure [EID, Ename, designation, salary].</p> <ol style="list-style-type: none"><li data-bbox="336 143 1453 210">i. Write a user defined function CreateEmp() to input data for a record and create a file emp.dat.</li><li data-bbox="336 219 1453 286">ii. Write a function display () in Python to display the detail of all employees whose salary is more than 50000.</li></ol> <p style="text-align: center;">OR</p> <p>A binary file "Account.dat" has structure (Acct_Number, Acct_Type, AcctHolderName, Balance).</p> <ol style="list-style-type: none"><li data-bbox="336 398 1453 465">i. Write a user defined function CreateFile () to input data for a record and add to Account.dat</li><li data-bbox="336 519 1453 654">ii. Write a function CountBalanceAbove(BAL) in Python that would read contents of the file "Account.dat" and display the details of those accounts in which Balance is more than BAL. Also display number of such accounts.</li></ol>	5
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