

Kendriya Vidyalaya Sangathan, Tinsukia Region
Pre-Board – II Examination 2020-21
Computer Science (083) (Theory)
Class: XII
Marking Scheme

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. (award 1 mark for each correct answer)		
Q.No		Marks
1.	Find the invalid identifier from the following a) def b) For c)_bonus d)First_Name a) def	1
2.	Given the lists Lst=['C','O','M','P','U','T','E','R'], write the output of: print(Lst[3:6]) PUT	1
3.	Function of writer object is used to send data to csv file to store. writerow()	1
4.	What will be the output of following program: a='hello' b='virat' for i in range(len(a)): print(a[i],b[i]) h v e i l r l a o t	1
5.	Write the output of the following code segment: colors=["violet", "indigo", "blue", "green", "yellow", "orange", "red"] del colors[4] colors.remove("blue") colors.pop(3) print(colors) ['violet', 'indigo', 'green', 'red']	1
6.	Which statement is correct for dictionary? (i) A dictionary is a ordered set of key:value pair (ii) each of the keys within a dictionary must be unique (iii) each of the values in the dictionary must be unique (iv) values in the dictionary are immutable (ii) each of the keys within a dictionary must be unique	1
7.	Identify the valid declaration of Rec: Rec=(1,"Vikrant",50000) (i)List (ii)Tuple (iii)String (iv)Dictionary	1

	(ii) Tuple	
8.	<p>Find and write the output of the following python code:</p> <pre>def myfunc(a): a = a + 2 a = a * 2 return a print(myfunc(2))</pre> <p>8</p>	1
9.	<p>Name the protocol that is used to transfer file from one computer to another.</p> <p>FTP</p>	1
10.	<p>Raj is a social worker, one day he noticed someone has created his fake ID on social media platforms for fund raising. What kind of Cybercrime Raj is facing?</p> <p>Identity Theft</p>	1
11.	<p>Which command is used to change the existing information of table?</p> <p>UPDATE</p>	1
12.	<p>Expand RDBMS</p> <p>Relational Database Management System</p>	1
13.	<p>Write an Aggregate function that is used in MySQL to find No. of Rows in the database Table</p> <p>Count (*)</p>	1
14.	<p>For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute.</p> <p>a. Dictionaries b. Domain c. Directory d. Relation</p> <p>(b) Domain</p>	1
15.	<p>Name the Transmission media which consists of an inner copper core and a second conducting outer sheath.</p> <p>Co-axial</p>	1
16.	<p>Identify the valid statement for list L=[1,2,"a"]:</p> <p>a. L.remove("2") b. L.del(2) c. del L[2] d. del L["a"]</p> <p>(c) del L[2]</p>	1
17.	<p>Find and write the output of the following python code:</p> <pre>x = "Python" print(x[:-1]) print(x)</pre>	1

	nohtyP Python																
18.	In SQL, write the query to display the list of databases stored in MySQL. show databases	1															
19.	Expand GPS Global Positioning System	1															
20.	Which is not a constraint in SQL? a. Unique b. Distinct c. Primary key d. Check b) Distinct	1															
21.	Define Bandwidth? A band of frequencies used for sending electronic signals or The difference between lowest frequency & highest frequency of transmission or any other correct response	1															
Section-II																	
Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark																	
22.	Observe the following table and answer the question (a) to (e) (Any 04) TABLE: VISITOR <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>VisitorID</th> <th>VisitorName</th> <th>ContactNumber</th> </tr> </thead> <tbody> <tr> <td>V001</td> <td>ANAND</td> <td>9898989898</td> </tr> <tr> <td>V002</td> <td>AMIT</td> <td>9797979797</td> </tr> <tr> <td>V003</td> <td>SHYAM</td> <td>9696969696</td> </tr> <tr> <td>V004</td> <td>MOHAN</td> <td>9595959595</td> </tr> </tbody> </table> Write the name of most appropriate columns which can be considered as Candidate keys? (a) VisitorID and ContactNumber	VisitorID	VisitorName	ContactNumber	V001	ANAND	9898989898	V002	AMIT	9797979797	V003	SHYAM	9696969696	V004	MOHAN	9595959595	1
VisitorID	VisitorName	ContactNumber															
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V003	SHYAM	9696969696															
V004	MOHAN	9595959595															
	Out of selected candidate keys, which one will be the best to choose as Primary Key? (b) VisitorID	1															
	What is the degree and cardinality of the table? (c) Degree= 3 Cardinality=4	1															
	(d) Insert the following data into the attributes VisitorID, VisitorName and ContactNumber respectively in the given table VISITOR. <i>VisitorID = "V004", VisitorName= "VISHESH" and ContactNumber= 9907607474</i> insert into VISITOR values ("V004", "VISHESH",9907607474)	1															
	(e) Remove the table VISITOR from the database HOTEL. Which command will he used from the following: a) DELETE FROM VISITOR; b) DROP TABLE VISITOR; c) DROP DATABASE HOTEL;	1															

	d) DELETE VISITOR FROM HOTEL; (b) DROP TABLE VISITOR;	
23	<p>Priti of class 12 is writing a program to create a CSV file “emp.csv”. She has written the following code to read the content of file emp.csv and display the employee record whose name begins from “S” also show no. of employee with first letter “S” out of total record. As a programmer, help her to successfully execute the given task.</p> <p>Consider the following CSV file (emp.csv):</p> <pre> 1,Peter,35 00 2,Scott,40 00 3,Harry,5 000 4,Michael ,2500 5,Sam,42 00 import _____ # Line 1 def S NAMES(): with open(_____) as csvfile: # Line 2 myreader = csv._____(csvfile, delimiter=',') # Line 3 count_rec=0 count_s=0 for row in myreader: if row[1][0].lower()=='s': print(row[0],',',row[1],',',row[2]) count_s+=1 count_rec+=1 print("Number of 'S' names are ",count_s,"/",count_rec) </pre> <p>Name the module he should import in Line 1</p> <p>(a) Csv</p>	1
	In which mode, Priti should open the file to print data. (b) read mode	1
	Fill in the blank in Line 2 to open the file. (c) 'emp.csv'	1
	Fill in the blank in Line3 to read the data from a csv file. (d) reader	1
	Write the output he will obtain while executing the above program. (e) 2,Scott,4000 5,Sam,4200 Number of “S” names are 2/5	1
PART-B		
Section-I		
24.	<p>If given A=2,B=1,C=3, What will be the output of following expressions:</p> <p>(i) print((A>B) and (B>C) or(C>A))</p> <p>(ii) print(A**B**C)</p> <p>(i) True (ii) 2</p>	2
25	What is Trojan? Any two type of activities performed by Trojan	2

	<p>A Trojan horse or Trojan is a type of malware that is often disguised as legitimate software. Trojans can be employed by cyber-thieves and hackers trying to gain access to users' systems. activities performed by Trojan can be:</p> <p>Deleting data Blocking data Modifying data Copying data Disrupting the performance of computers or computer networks</p> <p style="text-align: center;">OR</p> <p>What is the difference between HTML and XML?</p> <table border="1" data-bbox="210 504 1337 1070"> <thead> <tr> <th data-bbox="210 504 710 548">HTML</th> <th data-bbox="710 504 1337 548">XML</th> </tr> </thead> <tbody> <tr> <td data-bbox="210 548 710 689">HTML is used to display data and focuses on how data looks.</td> <td data-bbox="710 548 1337 689">XML is a software and hardware independent tool used to transport and store data. It focuses on what data is.</td> </tr> <tr> <td data-bbox="210 689 710 757">HTML is a markup language itself.</td> <td data-bbox="710 689 1337 757">XML provides a framework to define markup languages.</td> </tr> <tr> <td data-bbox="210 757 710 801">HTML is not case sensitive.</td> <td data-bbox="710 757 1337 801">XML is case sensitive.</td> </tr> <tr> <td data-bbox="210 801 710 869">HTML is a presentation language.</td> <td data-bbox="710 801 1337 869">XML is neither a presentation language nor a programming language.</td> </tr> <tr> <td data-bbox="210 869 710 936">HTML has its own predefined tags.</td> <td data-bbox="710 869 1337 936">You can define tags according to your need.</td> </tr> <tr> <td data-bbox="210 936 710 1003">In HTML, it is not necessary to use a closing tag.</td> <td data-bbox="710 936 1337 1003">XML makes it mandatory to use a closing tag.</td> </tr> <tr> <td data-bbox="210 1003 710 1070">HTML is static because it is used to display data.</td> <td data-bbox="710 1003 1337 1070">XML is dynamic because it is used to transport data.</td> </tr> </tbody> </table>	HTML	XML	HTML is used to display data and focuses on how data looks.	XML is a software and hardware independent tool used to transport and store data. It focuses on what data is.	HTML is a markup language itself.	XML provides a framework to define markup languages.	HTML is not case sensitive.	XML is case sensitive.	HTML is a presentation language.	XML is neither a presentation language nor a programming language.	HTML has its own predefined tags.	You can define tags according to your need.	In HTML, it is not necessary to use a closing tag.	XML makes it mandatory to use a closing tag.	HTML is static because it is used to display data.	XML is dynamic because it is used to transport data.	
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26	<p>Expand the following terms:</p> <p>a. HTTP-Hypertext transfer Protocol b. POP3-Post office protocol ver. III c. VOIP- Voice over internet Protocol d. TCP- Transmission control protocol</p>	2																
27	<p>What do you understand the default argument in function? Which function parameter must be given default argument if it is used? Give example of function header to illustrate default argument.</p> <p>Default argument in function- value provided in the formal arguments in the definition header of a function is called as default argument in function. They should always be from right side argument to the left in sequence. For example:</p> <pre>def func(a, b=2, c=5): # definition of function func()</pre> <p>here b and c are default arguments</p> <p style="text-align: center;">OR</p> <p>Ravi a python programmer is working on a project, for some requirement, he has to define a function with name CalculateInterest(), he defined it as:</p> <pre>def CalculateInterest (Principle, Rate=.06,Time): # code</pre> <p>But this code is not working, Can you help Ravi to identify the error in the above function and what is the solution.</p> <p>In the function CalculateInterest (Principal, Rate=.06,Time) parameters should be default parameters from right to left hence either Time should be provided with some default value or default value of Rate should be removed</p>	2																
28	<p>Rewrite the following Python program after removing all the syntactical errors (if any),</p>	2																

	<p>underlining each correction:</p> <pre>def <u>checkval</u>: # <i>checkval</i>() x = <u>input("Enter a number")</u> # <i>int(input("Enter a number"))</i> if x % 2 =0: print (x, "is even") <u>elseif</u> x<0: # <i>elif</i> print (x, "should be positive") <u>else</u>: # <i>else</i>: print (x, "is odd")</pre>										
29	<p>What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO.</p> <pre>import random AR=[20,30,40,50,60,70] FROM=random.randint(1,3) TO=random.randint(2,4) for K in range(FROM,TO): print (AR[K],end="")</pre> <p>(i)10#40#70# (ii)30#40#50# (iii)50#60#70# (iv)40#50#70#</p> <p>Maximum value of FROM = 3 Maximum value of TO = 4 (ii) 30#40#50#</p>	2									
30	<p>Define Primary Key of a relation in SQL. Give an Example using a dummy table.</p> <p>Primary Key- one or more attribute of a relation used to uniquely identify each and every tuple in the relation. For Example : In the below Table Student, RollNo can be the Primary Key. Or any other suitable example</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>RollNo</th> <th>Name</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Paridhi</td> <td>90</td> </tr> <tr> <td>2</td> <td>Unnati</td> <td>85</td> </tr> </tbody> </table>	RollNo	Name	Marks	1	Paridhi	90	2	Unnati	85	2
RollNo	Name	Marks									
1	Paridhi	90									
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31	<p>Consider the following Python code is written to access the record of CODE passed to function: Complete the missing statements:</p> <pre>def Search(eno): #Assume basic setup import, connection and cursor is created query="select * from emp where empno=_____".format(eno) mycursor.execute(query) results = mycursor._____ print(results) { } and fetchone()</pre>	2									
32	<p>DDL- Data definition language. Consists of commands used to modify the metadata of a table. For Example- create table, alter table, drop table</p> <p>DML-Data manipulation language. Consist of commands used to modify the data of a table. For Example- insert, delete, update</p>	2									
33	<p>What will be the output of following program:</p> <pre>s="welcome2kv" n = len(s) m="" for i in range(0, n):</pre>	2									

	<pre> if (s[i] >= 'a' and s[i] <= 'm'): m = m +s[i].upper() elif (s[i] >= 'n' and s[i] <= 'z'): m = m +s[i-1] elif (s[i].isupper()): m = m + s[i].lower() else: m = m +'#' print(m) </pre>	
Section-II		
34	<p>Write code in Python to calculate and display the frequency of each item in a list.</p> <pre> L=[10,12,14,17,10,12,15,24,27 ,24] L1=[] L2=[] for i in L: if i not in L2: c=L.count(i) L1.append(c) L2.append(i) print('Item','\t\t','frequency') for i in range(len(L1)): print(L2[i],'\t \t', L1[i]) </pre> <p><i>or any other code with correct logic and syntax</i></p>	3
35	<p>Write a function COUNT_AND() in Python to read the text file “STORY.TXT” and count the number of times “AND” occurs in the file. (include AND/and/And in the counting)</p> <pre> def COUNT_AND(): count=0 file=open('STORY.TXT','r') line = file.read() word = line.split() for w in word: if w in ['AND', 'and', 'And']: count=count+1 file.close() print(count) </pre> <p><i>(½ Mark for opening the file)</i> <i>(½ Mark for reading word)</i> <i>(½ Mark for checking condition)</i> <i>(½ Mark for printing word)</i></p> <p style="text-align: center;">OR</p> <p>Write a function DISPLAYWORDS() in python to display the count of words starting with “t” or “T” in a text file ‘STORY.TXT’.</p> <pre> def DISPLAYWORDS(): </pre>	3

```

count=0
file=open('STORY.TXT','r')
line = file.read()
word = line.split()
for w in word:
    if w[0]=="T" or w[0]=="t":
        count=count+1
file.close()
print(count)

```

(½ Mark for opening the file)
(½ Mark for reading word)
(½ Mark for checking condition)
(½ Mark for printing word)

36 Write a output for SQL queries (i) to (iii), which are based on the table: **SCHOOL and ADMIN** given below:

TABLE: SCHOOL

CODE	TEACHERNAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/03/2000	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	GENDE R	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

i. SELECT SUM (PERIODS), SUBJECT FROM SCHOOL GROUP BY SUBJECT;
ii. SELECT TEACHERNAME, GENDER FROM SCHOOL, ADMIN WHERE
DESIGNATION = 'COORDINATOR' AND SCHOOL.CODE=ADMIN.CODE;
SELECT COUNT (DISTINCT SUBJECT) FROM SCHOOL;

- i) ENGLISH 51**
PHYSICS 76
MATHS 24
CHEMISTRY 27
- ii) PRIYA RAI FEMALE**
LISA ANAND FEMALE
- iii) 4**
(1 mark for each correct answer)

3

<p>37</p>	<p>Write a program to perform push operations on a Stack containing Student details as given in the following definition of student node:</p> <pre> RNo integer Name String Age integer def isEmpty(stk): if stk == []: return True else: return False def stk_push(stk, item): # Write the code to push student details using stack. def stkpush(stk, item): stk.append(item) top=len(stk)-1 </pre> <p style="text-align: center;">OR</p> <p>Write a program to perform pop operations on a Stack containing Student details as given in the following definition of student node:</p> <pre> RNo integer Name String Age integer def isEmpty(stk): if stk == []: return True else: return False def stk_pop(stk): # Write the code to pop a student using stack. def stkpop(stk): if isEmpty(): print("Underflow") else: item=stk.pop() print(item) if len(stk)==0: top=None else: top=len(stk)-1 </pre>	<p>3</p>
<p>Section-III</p>		
<p>38</p>	<p>(a) Any efficient layout with shortest Wire length (b) Between 3 and 4 due to larger distance (c) (i) Wireless (ii) WAN (iv) Building-3 due to maximum no of Computers (v) Co- axial cable or fiber optics</p>	<p>5</p>

(1 mark for each correct answer)

39 Write SQL queries for (i) to (v), which are based on the table: **SCHOOL and ADMIN**

TABLE: SCHOOL

CODE	TEACHERNAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/03/2000	24	10
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1123	GANAN	PHYSICS	16/07/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
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TABLE: ADMIN

CODE	GENDE R	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

- i. To decrease period by 10% of the teachers of English subject.
 - ii. To display TEACHERNAME, CODE and DESIGNATION from tables SCHOOL and ADMIN whose gender is male.
 - iii. To display number of teachers in each subject.
 - iv. To display details of all teachers who have joined the school after 01/01/1999 in descending order of experience.
- v) Delete all the entries of those teachers whose experience is less than 10 years in SCHOOL table.

- i) update SCHOOL set PERIODS=0.9*PERIODS;
- ii) select SCHOOL.TEACHERNAME, SCHOOL.CODE, ADMIN.DESIGNATION from SCHOOL, ADMIN where gender='MALE'.
- iii) select SUBJECT, count(*) from SCHOOL group by SUBJECT;
- iv) select * from SCHOOL where DOJ>' 01/01/1999' order by EXPERIENCE desc;
- v) delete from SCHOOL where EXPERIENCE<10;

(1 mark for each correct answer)

40 Write a function SCOUNT() to read the content of binary file "NAMES.DAT" and display number of records (each name occupies 20 bytes in file) where name begins from "S" in it. For. e.g. if the content of file is:

5

5

SACHIN
AMIT
AMAN
SUSHIL
DEEPAK
HARI SHANKER

Function should

display

Total Names beginning from "S"
are 2

```
def SCOUNT():  
    s=' '  
    count=0  
    with open('Names.dat', 'rb') as f:  
        while(s):  
            s = f.read(20)  
            s=s.decode()  
            if len(s)!=0:  
                if s[0].lower()=='s':  
                    count+=1  
    print('Total names beginning from "S" are ',count)
```

OR

Consider the following CSV file (emp.csv):

Sl,name,salary

1,Peter,3500
2,Scott,4000
3,Harry,5000
4,Michael,2500
5,Sam,4200

Write Python function DISPEMP() to read the content of file emp.csv and display only those records where salary is 4000 or above

```
import csv  
def DISPEMP():  
    with open('emp.csv') as csvfile:  
        myreader = csv.reader(csvfile,delimiter=',')  
        print("%10s"% "EMPNO", "%20s"% "EMP NAME", "%10s"% "SALARY")  
        for row in myreader:  
            if int(row[2])>4000:  
                print("%10s"% row[0], "%20s"% row[1], "%10s"% row[2])
```
