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

Maximum Marks: 70   **Time Allowed: 3 hours**

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 internal options have.
    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

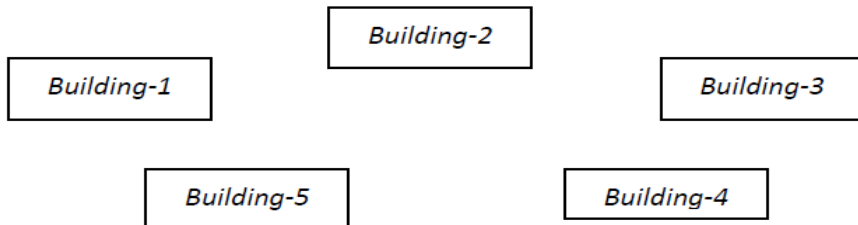| Question No.	PART A	Marks allocated
	Section-I **Select the most appropriate option out of the options given for each question.** **Attempt any 15 questions from question no 1 to 21.**	
1	Find the invalid identifier from the following : a) def b) For c)_bonus d)First_Name	1
2	Given the lists Lst=['C','O','M','P','U','T','E','R'] , write the output of: print(Lst[3:6])	1
3	………………….. function of writer object is used to send data to csv file to store.	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])	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)	1
6	Which statement is correct for dictionary? (i) A dictionary is a ordered set of key:value pair	1

	(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	
7	Identify the valid declaration of Rec: Rec=(1,"Vikrant",50000) (i)List (ii)Tuple (iii)String (iv)Dictionary	1

8	Find and write the output of the following python code:
	 def myfunc(a):
	     a = a + 2
	     a = a * 2
	     return a
	 print(myfunc(2))
		1

9	Name the protocol that is used to transfer file from one computer to another.	1
10	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?	1
11	Which command is used to change the existing information of table?	1
12	Expand the term: RDBMS	1
13	Write an Aggregate function that is used in MySQL to find No. of Rows in the database Table.	1
14	For each attribute of a relation, there is a set of permitted values, called the ………. of that attribute. a. Dictionaries b. Domain c. Directory d. Relation	1
15	Name the Transmission media which consists of an inner copper core and a second conducting outer sheath.	1
16	Identify the valid statement for list L=[1,2,"a"]: a. L.remove("2") b. L.del(2) c. del L[2] d. del L["a"]	1
17	Find and write the output of the following python code: x = "Python" print(x[: :-1]) print(x)	1
18	In SQL, write the query to display the list of databases stored in MySQL.	1
19	Write the expanded form of GPS?	1
20	Which is not a constraint in SQL?	1

	a. Unique b. Distinct c. Primary key d. Check	
21	Define Bandwidth?	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** | VisitorID	VisitorName	ContactNumber
V001	ANAND	9898989898
V002	AMIT	9797979797
V003	SHYAM	9696969696

V004	MOHAN	9595959595 |
		
		a. Write the name of most appropriate columns which can be considered as Candidate keys?
		b. Out of selected candidate keys, which one will be the best to choose as Primary Key?
		c. What is the degree and cardinality of the table?
		d. Insert the following data into the attributes VisitorID, VisitorName and ContactNumber respectively in the given table VISITOR.
		(VisitorID = "V004", VisitorName= "VISHESH" and ContactNumber= 9907607474)
		e. Remove the table VISITOR from the database HOTEL. Which command will be used from the following:
		    a) DELETE FROM VISITOR;
		    b) DROP TABLE VISITOR;
		    c) DROP DATABASE HOTEL;
		    d) DELETE VISITOR FROM HOTEL;
			4

23	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.
	
	Consider the following CSV file (emp.csv):
	
	    1,Peter,3500
	    2,Scott,4000
	    3,Harry,5000
	    4,Michael,2500
	    5,Sam,4200
	
	import _____ # Line 1
	def SNAMES():
	    with open(_____) as csvfile: # Line 2
		4

```
                    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)
```

Answer the questions below:

(a) Name the module he should import in Line 1

(b) In which mode, Priti should open the file to print data.

(c) Fill in the blank in Line 2 to open the file.

(d) Fill in the blank in Line3 to read the data from a csv file.

(e) Write the output he will obtain while executing the above program.

Part – B

Section - I

24	If given A=2,B=1,C=3, What will be the output of following expressions: (i) print((A>B) and (B>C) or(C>A)) (ii) print(A**B**C)	2
25	What is Trojan? Write any two type of activities performed by Trojan. **OR** What is the difference between HTML and XML?	2
26	Expand the following terms: a. HTTP b. POP3 c. VOIP d.TCP	2
27	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. OR 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: def CalculateInterest (Principle, Rate=.06,Time): # code But this code is not working, Can you help Ravi to identify the error in the above function and what is the solution.	2
28	Rewrite the following Python program after removing all the syntactical errors (if any), underlining each correction: def checkval: x = input("Enter a number")	2

```
        if x % 2 =0:
            print (x, "is even")
        elseif x<0:
            print (x, "should be positive")
        else;
            print (x, "is odd")
```

29	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. 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="#") (i)10#40#70# (ii)30#40#50# (iii)50#60#70# (iv)40#50#70#	2
30	Define Primary Key of a relation in SQL. Give an example using a dummy table.	2

31	Consider the following Python code is written to access the record of CODE passed to function:
	
	Complete the missing statements:
	
	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)
		2

32	Differentiate between DDL and DML with one example each.	2

33	What will be the output of following program:
	s="welcome2kv"
	n = len(s)
	m=""
	for i in range(0, n):
	   if (s[i] >= 'a' and s[i] <= 'm'):
	     m = m +s[i].upper()
	   elif (s[i] >= 'n' and s[i] <= 'z'):
		2

	m = m +s[i-1]
	
	elif (s[i].isupper()):
	
	  m = m + s[i].lower()
	
	else:
	
	  m = m +'#'
	
	print(m)	

	Section-II	
34	Write code in Python to calculate and display the frequency of each item in a list.	3
35	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) OR Write a function DISPLAYWORDS( ) in python to display the count of words starting with "t" or "T" in a text file 'STORY.TXT'.	3
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	GENDER	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; iii. SELECT COUNT (DISTINCT SUBJECT) FROM SCHOOL;	3
37	Write a program to perform push operations on a Stack containing Student details as given in the following definition of student node:	3

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.

<div align="center">OR</div>

Write a program to perform pop operations on a Stack containing Student details as given in the following definition of student node:

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.

SECTION - III

38	PVS Computers decided to open a new office at Ernakulum, the office consist of Five Buildings and each contains number of computers. The details are shown below.	5

Distance between the buildings:

Building 1 and 2	20 Meters
Building 2 and 3	50 Meters
Building 3 and 4	120 Meters
Building 3 and 5	70 Meters
Building 1 and 5	65 Meters
Building 2 and 5	50 Meters

Number of computers in each buildings:

Building	No of computers
1	40
2	45
3	110
4	70
5	60

Computers in each building are networked but buildings are not networked so far. The Company has now decided to connect building also.

a) Suggest a cable layout for connecting the buildings

b) Do you think anywhere Repeaters required in the campus? Why?

c) The company wants to link this office to their head office at Delhi

      i) Which type of transmission medium is appropriate for such a link?

      ii) What type of network would this connection result into?

d) In which building installation of the server is suggested? Why?

e) Suggest the wired Transmission Media used to connect all buildings efficiently.

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39   Write SQL queries for (i) to (v), which are based on the table: SCHOOL and ADMIN   5

TABLE: SCHOOL

CODE	TEACHER NAME	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	GENDER	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.

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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. | 5

For. e.g. if the content of file is:

SACHIN
AMIT
AMAN
SUSHIL
DEEPAK
HARI SHANKER

Function should display

Total Names beginning from "S" are 2

<div align="center">OR</div>

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.

<div align="center">**</div>