Kendriya Vidyalaya Sangathan
Silchar Region
Class XII 2nd Pre-Board Examination 2020-21
MARKING SCHEME
COMPUTER SCIENCE

Time allowed : 3 hoursMaximum 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.

All programming questions are to be answered using Python Language only

Question No.	Part-A	Marks
	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	iii. ==	1
2	[92,11,7,5,82,6,3,1]	1
3	maprogrammer aprog	½ ½
4	Mutable- List, Dictionary immutable String Tuple	1
5	b) T[2] = -29	1

| 6	Dict={'neha':98} 1 mark for correct declaration	1
7	30	1
8	i) math ii) random	1
9	SMTP	1
10	Cyber Stalking	1
11	*Select * from customer where name like "S%";*	1
12	1 mark for correct use of like operator	1
13	TUTORIALS	1
14	SELECT min(Price) FROM Products;	1
15	Which of these is not an example of unguided media? (i) Optical Fibre Cable	1
16	rb, ab, , a+b, r+	1
17	F.seek(0)	1
18	Desc student;	1
19	Simple mail transfer protocol	1
20	b) WHERE	1
21	Bps,Kbps,Mbps,Gbps,Tbps	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	(a) Identify the attribute best suitable to be declared as a primary key. Itemno (b) Write the degree and cardinality of the table ITEM Degree-4 Cardinality-4 (c) Write query to create table item. 1 mark for correct query,1/2 mark for partially correct. (d) write query to insert a new row(105,Pencil,10,100). Insert into item values(105,'Pencil',10,100), (e) Display the item information whose name starts with letter 's' Select * from item where iname like 's%';	4

23	Neha of class 12 is writing a program to find the size of the file in bytes,
	number of lines and number of words.
	 # reading data from a file and find size, lines, words
	 f = open('Lines.txt', _____) #line 1
	str = f.read()
	size = _____ # line 2
	print('size of file n bytes ', size)
	                                   _____# line 3
	L = f.readlines()
	 word = L.split()
	print('Number of lines ', _____) # line 4
	print('Number of words ', len(word))
	                          _____# line 5
		4

	a) Write the mode of file for line 1. f = open('Lines.txt', 'r') b) Find the number of bytes for line2. size = len(str) c) Move the file pointer to beginning of file for line 3. f.seek(0) d) Write function to find number of lines for line 4. print('Number of lines ', len(L)) e) write function to close file for line 5. f.close()	
	Part B	
	SECTION I	

24	What will be the output of the following?
	
	  (a)17
	
	  (b)True
	
	  (c)17.0
	
	   (d)2.0
		2

25	a. Hub/switch b. Modem OR a. LAN B Repeater	2
26	1 mark for definition of transmission medium 1 mark for Differentiate between guided and unguided transmission media.	2
27	1 mark for augmented assignment operators and 1 for useful OR 1 mark for each mutable and immutable types in Python	2

28	Find the error .Underline and remove error(s)
	
	def multiply(numbers):
	  total = 1
	  for x in numbers:
	    total *=x
	  return total
	 print(multiply((8, 2, 3, -1, 7)))
	½ for one correction
		2

29	the least and highest value that may be generated were(0,4) i. 0:0 iv. 0:3 1 mark for correct option and 1 for least and highest value.	2
30	a) Kannika; b)Rohan	2

31	1 mark for each role of method commit() and execute() in database connectivity.	2
32	Delete from customer;	2
33	[11, 10, 10, 9, 9, 8, 8, 7, 7, 6]	2
Section- II		
34	1 mark for correct definition of function 1 mark for calculation 1 mark for return	3
35	Write a program that counts the number of characters up to the first $ in a text file. ½ mark for open text file 1 mark for correct logic ½ mark for compare ½ mark for print no of character ½ mark for close file OR Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message. ½ mark for open binary file 1 mark for correct logic ½ mark for compare ½ mark for print message ½ mark for close file	3

36	Write SQL queries for (i) and (ii) and find outputs for SQL queries (iii) and (iv), which are based on the tables.
	Table: VEHICLE
	
	• NOP is number of passengers travelled in vehicle
	   (i) To display CN0, CNAME, TRAVELDATE from the table TRAVEL in descending order of CNO.
	           Select CN0, CNAME, TRAVELDATE from TRAVEL order by CNo;
	           1 mark for correct query and ½ mark for partially
	
	   (ii) To display the CNAME of all the customers from the table TRAVEL who are traveling by vehicle with code V01 or V02.
	           1 mark for correct query and ½ mark for partially
	
	   (iii) SELECT COUNT(*),VCODE FROM TRAVEL GROUP BY VCODE HAVING COUNT(*)>1;
	           VCODE COUNT(*)
	           V01 2
	           V02 2
		3

		½ mark for correct output	
	(iv)	SELECT A.VCODE, CNAME, VEHICLETYPE FROM TRAVEL A, VEHICLE B WHERE A. VCODE = B.VCODE AND KM<90; ½ mark for correct output	

37		Write DoPush(customer) to add a new customer and display customers from a list of customer names considering them as push and display operations of stack.
		defis_empty(self):
		  return self== []
		defDoPush(customer):
		    n=int(input("enter a customer number"))
		 name=input("enter the name of customer")
		b=[n,name]
		customer.append(b)
		def display(self):
		  if is_empty(customer):
		print('Stack is empty.')
		  else:
		    l=len(customer)
		    for i in range(l-1,-1,-1):
		      print(customer[i])
		customer = []
		1 mark for read details and push in stack
		1 mark for correct push function
		1 mark for display stack
		 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.
		def pop(self):
		  return self.pop()
		def display(self):
		  if is_empty(s):
		print('Stack is empty.')
		  else:
		    l=len(s)
		    for i in range(l-1,-1,-1):
		      print(s[i])
		2 marks for POP(Arr) function and 1 for display
			3

		Section-III	
38		G.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 kilometres consisting of 3 blocks. Human Resources, Academics and	5

Administration. You as a network expert have to suggest answers to the four queries (i) to (iv) raised by them. Note Keep the distances between blocks and number of computers in each block in mind, while providing them the solutions.

while providing them the solutions.

Bengaluru Office Setup

Delhi Head Office

Human Resources

Administration   Academics
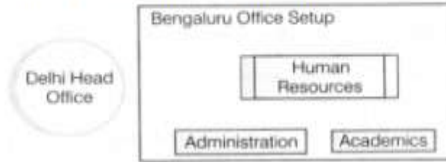
Shortest distances between various blocks

Human Resources to Administration	100m
Human Resources to Academics	65m
Academics to Administration	110m
Delhi Head Office to Bengaluru Office Setup	2350 km

Number of computers installed at various blocks

Block	Number of Computers
Human Resources	155
Administration	20
Academics	100
Delhi Head Office	20

1.
Server:- Human Resource (rule 80:20)
 2.
Bus/star
 3. Hub/switch
4.Fiber optical
5. if distance more than 120 km than repeater required

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39 | Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (vi), which are based on the tables.
DVD

	DVD	
DCODE	DTITLE	DTYPE
F101	Henry Martin	Folk
C102	Dhrupad	Classical
C101	The Planets	Classical
F102	Universal Soldier	Folk
R102	A day in life	Rock
	MEMBER	

5

MID	NAME	DCODE	ISSUEDATE
101	AGAM SINGH	R102	2017-11-30
103	ARTH JOSEPH	F102	2016-12-13
102	NISHA HANS	C101	2017-07-24

1. To display all details from the table MEMBER in descending order of ISSUEDATE.
   Select * from Member order by issuedatedesc;
2. To display the DCODE and DTITLE of all Folk Type DVDs from the table DVD.
   Select Dcode,Dtitle from DVD where DTYPE="Folk";
3. To display the DTYPE and number of DVDs in each DTYPE from the table DVD.
   Select Dtype,count(*) from DVD group by Dtype;
4. To display all NAME and ISSUEDATE of those members from the table MEMBER who have DVDs issued (i.e., ISSUEDATE) in the year 2017.
   Select name,issuedate from member where year(issuedate)==2017;
5. SELECT MIN(ISSUEDATE) FROM MEMBER;
   MIN(ISSUEDATE)
   2016-12-13
6. SELECT DISTINCT DTYPE FROM DVD;

DISTINCTDTYPE
Folk
Classical
Rock

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40 | (a) Create a binary file "employee" that stores the records of employees and display them one by one.
import pickle
f1 = open('emp.dat','rb')
e = pickle.load(f1)
for x in e: | 5

```
 print(x)
f1.close()
```

(b) Display the records of all those employees who are getting salaries between 25000 to 30000.

```
import pickle
f1 = open('emp.dat','rb')
 e = pickle.load(f1)
 for x in e:
 if(e[x]>=25000 and e[x]<=30000):
 print(x)
 f1.close()
```

OR

A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage). Write a function *countrec()* in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%

```
import pickle
defcountRec():
fobj=open("STUDENT.DAT","rb")
num=0
   try:
      while True:
         rec=pickle.load(fobj)
         if rec[2]>75:
            print(rec[0],rec[1],rec[2],sep="\t")
num=num+1
   except:
fobj.close()
   return num
```