

Kendriya Vidyalaya Sangathan, Tinsukia Region
First Pre-Board 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 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.
 6. All programming questions are to be answered using Python Language only
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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 valid identifier from the following a) False b) 1st&2nd c) 2ndName d) My_Name	(1)
2.	Given the lists L=[1, 30, 67, 86, 23, 15, 37, 131, 9232] , write the output of <code>print(L[3:7])</code>	(1)
3.	Name all the file access modes in python.	(1)
4.	Identify the invalid logical operator in Python from the following. a) and b) or c) not d) Boolean	(1)
5.	Suppose a tuple T is declared as T = (10, 12, 43, 39), which of the following is Incorrect? a) <code>print(T[1])</code>	(1)

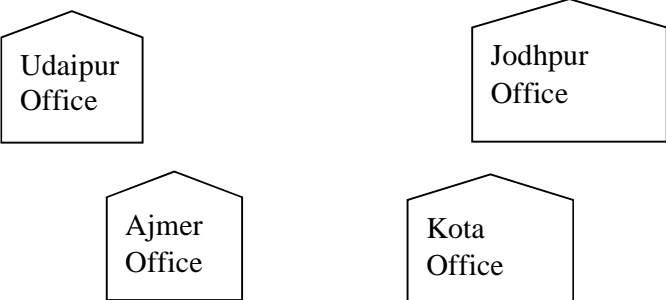
	b) <code>print(max(T))</code> c) <code>print(len(T))</code> d) None of the above	
6.	Write a statement in Python to declare a dictionary whose keys are 5, 8, 10 and values are May, August and October respectively.	(1)
7.	A list is declared as <code>Lst = [1, 2, 3, 4, 5, 6, 8]</code> What will be the value of <code>sum(Lst)</code> ?	(1)
8.	Name the built-in function / method that is used to return the length of the object.	(1)
9.	Name the protocol that is used to transfer files.	(1)
10.	Your friend's mother receives an e-mail to access the additional services of bank at zero cost from some agency asking her to fill her bank details like credit card number and PIN in the form attached to the mail. Identify the type of cybercrime in this situation.	(1)
11.	In SQL, name the clause that is used to display the unique values of an attribute of a table.	(1)
12.	In SQL, what is the use of <code><></code> operator?	(1)
13.	Write any two aggregate function used in SQL.	(1)
14.	Which of the following is/ are DML command(s)? a) SELECT b) ALTER c) DROP d) UPDATE	(1)
15.	Name the fastest available transmission media.	(1)
16.	Identify the valid declaration of L: <code>L = ('Mon', '23', 'hello', '60.5')</code> a. dictionary b. string c. tuple d. list	(1)
17.	If the following code is executed, what will be the output of the following code? <code>name="Computer_Science_with_Python"</code> <code>print(name[-25:10])</code>	(1)
18.	In SQL, write the query to display the list databases.	(1)
19.	Write the expanded form of LAN & MAN.	(1)
20.	Which of the following types of table constraints will not prevent NULL entries in a table? a) Unique b) Distinct c) Primary Key d) NOT NULL	(1)
21.	Rearrange the following transmission media in increasing order of data transfer rates. UTP CAT - 5 , UTP CAT – 6, IR, Bluetooth, OFC	(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.	<p>A local library OurLib is considering to maintain their inventory using SQL to store the data. As a database administrator, Nishita has decided that :</p> <ul style="list-style-type: none"> • Name of the database - OurLib • Name of the table - BOOKS • The attributes of Table BOOKS are as follows: Book_ID - numeric Title – character of size 30 Author - character of size 20 Publisher – character of size 30 Price – Float <table border="1" data-bbox="415 646 1271 1205"> <thead> <tr> <th>Book_ID</th> <th>Title</th> <th>Author</th> <th>Publisher</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>The Leader who had no title</td> <td>Robin Sharma</td> <td>PHI</td> <td>500</td> </tr> <tr> <td>1002</td> <td>You Can Win</td> <td>Shiv Kheda</td> <td>TMH</td> <td>253</td> </tr> <tr> <td>1003</td> <td>Rich Dad Poor Dad</td> <td>Robert T. Kiyosaki</td> <td>PHI</td> <td>564</td> </tr> <tr> <td>1004</td> <td>Success Through a Positive Mental Attitude</td> <td>Napoleon Hill</td> <td>Penguin</td> <td>522</td> </tr> <tr> <td>1005</td> <td>Fear Not, Dream Big, & Execute</td> <td>Jeff Meyer</td> <td>MCH</td> <td>845</td> </tr> <tr> <td>1006</td> <td>Leadership: The Art of Inspiring People to Be Their Best</td> <td>Craig B. Whelden</td> <td>Penguin</td> <td>542</td> </tr> </tbody> </table>	Book_ID	Title	Author	Publisher	Price	1001	The Leader who had no title	Robin Sharma	PHI	500	1002	You Can Win	Shiv Kheda	TMH	253	1003	Rich Dad Poor Dad	Robert T. Kiyosaki	PHI	564	1004	Success Through a Positive Mental Attitude	Napoleon Hill	Penguin	522	1005	Fear Not, Dream Big, & Execute	Jeff Meyer	MCH	845	1006	Leadership: The Art of Inspiring People to Be Their Best	Craig B. Whelden	Penguin	542	
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	a. Identify the attribute best suitable to be declared as a primary key.	(1)																																			
	b. Write the degree and cardinality of the table BOOKS .	(1)																																			
	c. Insert the following data into the table BOOKS . Book_ID= 2010, Title= “A Book of Comp. Sc.”, Author= “Praveen Sharma” and Price = 625	(1)																																			
	d. Nishita want to remove the entire data of table BOOKS from the database OurLib. Which command will he use from the following: i. DELETE FROM BOOKS; ii. DROP TABLE BOOKS; iii. DROP DATABASE BOOKS; iv. DELETE TABLE books FROM OurLib;	(1)																																			
	e. Now Nishita wants to display the structure of the table BOOKS, i.e. Title of the attributes and their respective data types that she has used in the table. Write the query to display the same.	(1)																																			
23.	Sanjay Dalmia of class 12 is writing a program to create a CSV file “contacts.csv” which will contain Name and Mobile Number for some																																				

	<p>entries. He has written the following code. As a programmer, help him to successfully execute the given task.</p> <pre> import _____ # Line 1 def addCsvFile(Name,Mobile): # to write / add data into the CSV file f=open(' contacts.csv', '_____') # Line 2 newFileWriter = csv.writer(f) newFileWriter.writerow([Name,Mobile]) f.close() #csv file reading code def readCsvFile(): # to read data from CSV file with open(' contacts.csv','r') as newFile: newFileReader = csv._____(newFile) # Line 3 for row in newFileReader: print (row[0],row[1]) newFile._____ # Line 4 addCsvFile("Arjun", "8548587526") addCsvFile("Arunima", "6585425855") addCsvFile("Frieda", "8752556320") readCsvFile() #Line 5 </pre>	
	a) Name the module he should import in Line 1.	(1)
	b) In which mode, Sanjay should open the file to add data into the file	(1)
	c) Fill in the blank in Line 3 to read the data from a csv file.	(1)
	d) Fill in the blank in Line 4 to close the file.	(1)
	e) Write the output he will obtain while executing Line 5.	(1)
	Part – B	
	Section-I	
24.	Evaluate the following expressions: a) $8/4+4**2//5\%2-8$ b) $10 >= 5$ and $7 < 12$ or not $13 == 3$	(2)
25.	Differentiate between Switch and a Hub. OR Differentiate between Web server and web browser. Write any two popular web browsers.	(2)
26.	Expand the following terms: a. URL b. Wi-Fi c. LAN d. GPRS	(2)
27.	Differentiate between break and continue statements with a suitable example.	(2)

	OR	
	What is the difference between local and a global variable? Explain with the help of a suitable example.	
28.	<p>Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.</p> <pre> a = 200 b = 33 if b > a Print("b is greater than a") elseif a == b: print(a and b are equal) else: print("a is greater than b") </pre>	(2)
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 first, second and third.</p> <pre> from random import randint LST=[5,10,15,20,25,30,35,40,45,50,60,70] first = randint(3,8) second = randint(4,9) third = randint(6,11) print(LST[first],"#", LST[second],"#", LST[third],"#") </pre> <p>(i) 20#25#25# (ii) 30#40#70# (iii) 15#60#70# (iv) 35#40#60#</p>	(2)
30.	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)
31.	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	(2)
32.	Write the full forms of DDL and DML. Write any two commands of DML in SQL.	(2)
33.	<p>Find and write the output of the following Python code:</p> <pre> def change (P,Q=30): P=P+Q Q=Q-P print(P,"#",Q) return(P) R=150 S=100 R=change(R,S) print(R,"#",S) S=change(S) </pre>	(2)

Section- II																										
34.	<p>Take the two lists, and write a program that returns a list only the elements that are common between both the lists (without duplicates) in ascending order. Make sure your program works on two lists of different sizes.</p> <p>e.g. L1= [1,1,2,3,5,8,13,21,34,55,89] L2= [20,1,2,3,4,5,6,7,8,9,10,11,12,13]</p> <p>The output should be: [1,2,3,5,8,13]</p>	(3)																								
35.	<p>Write a function in Python that counts the number of “The” or “This” words present in a text file “MY_TEXT_FILE.TXT”.</p> <p>Note: (The comparison should be case insensitive)</p> <p style="text-align: center;">OR</p> <p>Write a function VowelCount() in Python, which should read each character of a text file MY_TEXT_FILE.TXT, should count and display the occurrence of alphabets vowels.</p> <p>Example: If the file content is as follows:</p> <p style="padding-left: 40px;">Updated information As simplified by official websites.</p> <p>The VowelCount() function should display the output as:</p> <p style="padding-left: 40px;">A or a:4 E or e :4 I or I :8 O or o : 0 U or u: 1</p>	(3)																								
36.	<p>Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below:</p> <p>Table: Stationary</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>S_ID</th> <th>StationaryName</th> <th>Company</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>DP01</td> <td>Dot Pen</td> <td>ABC</td> <td style="text-align: right;">10</td> </tr> <tr> <td>PL02</td> <td>Pencil</td> <td>XYZ</td> <td style="text-align: right;">6</td> </tr> <tr> <td>ER05</td> <td>Eraser</td> <td>XYZ</td> <td style="text-align: right;">7</td> </tr> <tr> <td>PL01</td> <td>Pencil</td> <td>CAM</td> <td style="text-align: right;">5</td> </tr> <tr> <td>GP02</td> <td>Gel Pen</td> <td>ABC</td> <td style="text-align: right;">15</td> </tr> </tbody> </table>	S_ID	StationaryName	Company	Price	DP01	Dot Pen	ABC	10	PL02	Pencil	XYZ	6	ER05	Eraser	XYZ	7	PL01	Pencil	CAM	5	GP02	Gel Pen	ABC	15	(3)
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	<p>Table: Consumer</p> <table border="1" data-bbox="383 212 1133 478"> <thead> <tr> <th>C_ID</th> <th>ConsumerName</th> <th>Address</th> <th>S_ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Good Learner</td> <td>Delhi</td> <td>PL01</td> </tr> <tr> <td>6</td> <td>Write Well</td> <td>Mumbai</td> <td>GP02</td> </tr> <tr> <td>12</td> <td>Topper</td> <td>Delhi</td> <td>DP01</td> </tr> <tr> <td>15</td> <td>Write & Draw</td> <td>Delhi</td> <td>PL02</td> </tr> </tbody> </table> <p>i. SELECT count(DISTINCT Address) FROM Consumer; ii. SELECT Company, MAX(Price), MIN(Price), COUNT(*) from Stationary GROUP BY Company; iii. SELECT Consumer.ConsumerName, Stationary.StationaryName, Stationary.Price FROM Stationary, Consumer WHERE Consumer.S_ID = Stationary.S_ID;</p>	C_ID	ConsumerName	Address	S_ID	1	Good Learner	Delhi	PL01	6	Write Well	Mumbai	GP02	12	Topper	Delhi	DP01	15	Write & Draw	Delhi	PL02		
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37.	<p>Write a function in Python PUSH (Lst), where Lst is a list of numbers. From this list push all numbers not divisible by 6 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.</p> <p style="text-align: center;">OR</p> <p>Write a function in Python POP(Lst), where Lst is a stack implemented by a list of numbers. The function returns the value deleted from the stack.</p>	(3)																					
Section-III																							
38.	<p>Laxmi Marketing Ltd. has four branches in its campus named Udaipur, Kota, Jodhpur and Ajmer. Laxmi Marketing Ltd. wants to establish the networking between all the four offices. A rough layout of the same is as follows:</p> <div style="text-align: center;">  </div> <p>Approximate distances between these offices as per network survey team are as follows:</p> <table border="1" data-bbox="511 1640 1159 1892"> <thead> <tr> <th>Place From</th> <th>Place To</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>Udaipur</td> <td>Jodhpur</td> <td>30 m</td> </tr> <tr> <td>Jodhpur</td> <td>Kota</td> <td>40 m</td> </tr> <tr> <td>Kota</td> <td>Ajmer</td> <td>25 m</td> </tr> <tr> <td>Udaipur</td> <td>Ajmer</td> <td>150 m</td> </tr> <tr> <td>Jodhpur</td> <td>Ajmer</td> <td>105 m</td> </tr> <tr> <td>Udaipur</td> <td>Kota</td> <td>60 m</td> </tr> </tbody> </table>	Place From	Place To	Distance	Udaipur	Jodhpur	30 m	Jodhpur	Kota	40 m	Kota	Ajmer	25 m	Udaipur	Ajmer	150 m	Jodhpur	Ajmer	105 m	Udaipur	Kota	60 m	(5)
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Udaipur	Kota	60 m																					

In continuation of the above, the company experts have planned to install the following number of computers in each of their offices:

Udaipur	40
Jodhpur	80
Kota	200
Ajmer	60

- i. Suggest the most suitable place (i.e., Block/Center) to install the server of this organization with a suitable reason.
- ii. Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.
- iii. Which device will you suggest to be placed/installed in each of these offices to efficiently connect all the computers within these offices?
- iv. Suggest the placement of a Repeater in the network with justification.
- v. The organization is planning to connect its new office in Delhi, which is more than 1250 km current location. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer.

39.

Consider the tables given below.

Table : STOCK

Itcode	Iname	Dcode	Qty	UnitPrc	StkDate
444	Drawing Copy	101	10	21	31-June-2009
445	Sharpener Camlin	102	25	13	21-Apr-2010
450	Eraser Natraj	101	40	6	11-Dec-2010
452	Gel Pen Montex	103	80	10	03-Jan-2010
457	Geometry Box	101	65	65	15-Nov-2009
467	Parker Premium	102	40	109	27-Oct-2009
469	Office File	103	27	34	13-Sep-2010

Table : DEALERS

Dcode	Dname	Location
101	Vikash Stationers	Lanka Varanasi
102	Bharat Drawing Emporium	Luxa Varanasi
103	Banaras Books Corporation	Bansphatak Varanasi

- (i) To display all the information about items containing the word "pen" in the field Iname in the table STOCK.
- (ii) List all the itname sold by Vikash Stationers.
- (iii) List all the Iname and StkDate in ascending order of StkDate.
- (iv) List all the Iname, Qty and Dname for all the items for the items quantity more than 40.
- (v) List all the details of the items for which UnitPrc is more than 10 and ≤ 50 .

(5)

40.

A binary file "Employee.dat" has structure [Emp_ID, Emp_Name, Salary, Mobile].

(5)

	<p>i. Write a user defined function CreateFile() to input data for a record and add to Employee.dat .</p> <p>ii. Write a function TotalSalary() in Python which return the sum of salary of all the employees stored in the binary file “Employee.dat”</p> <p style="text-align: center;">OR</p> <p>A binary file “Account.dat” has structure (Acct_Number, Acct_Type, AcctHolderName, Balance).</p> <p>i. Write a user defined function CreateFile() to input data for a record and add to Account.dat .</p> <p>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.</p>	
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***** **END** *****