

KVS – GURUGRAM REGION
Class: XII - Computer Science (083) Session: 2020-21
Pre-Board Question Paper (Theory)

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

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.		
1	Find the valid identifier from the following a) My-Name b) True c) 2ndName d) S_name	1
2	Given the lists L=[1,3,6,82,5,7,11,92] , What will be the output of print(L[2:5])	1
3	Write the full form of IDLE.	1
4	Identify the valid logical operator in Python from the following. a) ? b) < c) ** d) and	1
5	Suppose a tuple Tup is declared as Tup = (12, 15, 63, 80), which of the following is incorrect? a) print(Tup[1]) b) Tup[2] = 90 c) print(min(Tup)) d) print(len(Tup))	1
6	Write a statement in Python to declare a dictionary whose keys are 1,2,3 and values are Apple, Mango and Banana respectively.	1
7	A tuple is declared as T = (2,5,6,9,8)	1

	What will be the value of sum(T)?	
8	Name the built-in mathematical function / method that is used to return square root of a number.	1
9	Protocol is used to send email	1
10	Your friend Sunita complains that somebody has created a fake profile on Twitter and defaming her character with abusive comments and pictures. Identify the type of cybercrime for these situations.	1
11	In SQL, name the command/clause that is used to display the rows in descending order of a column.	1
12	In SQL, what is the error in following query : SELECT NAME, SAL, DESIGNATION WHERE DISCOUNT=NULL;	1
13	Write any two aggregate functions used in SQL.	1
14	Which of the following is a DML command? a) SELECT b) Update c) INSERT d) All	1
15	Name the transmission media best suitable for connecting to desert areas.	1
16	Identify the valid declaration of P: P= ['Jan', 31, 'Feb', 28] 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? str="KendriyaVidyalayaSangathan" print(str[8:16])	1
18	In SQL, write the query to display the list of databases.	1
19	Write the expanded form of VPN.	1
20	Which of the following will suppress the entry of duplicate value in a column? a) Unique b) Distinct c) Primary Key d) NOT NULL	1
21	Rearrange the following terms in increasing order of speedy medium of data transfer. Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	1
Part A		
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>Modern Public School is maintaining fees records of students. The database administrator Aman decided that-</p> <ul style="list-style-type: none"> • Name of the database -School • Name of the table – Fees • The attributes of Fees are as follows: <ul style="list-style-type: none"> Rollno - numeric Name – character of size 20 Class - character of size 20 Fees – Numeric Qtr – Numeric <p>Answer any four from the following questions: (i) Identify the attribute best suitable to be declared as a primary key (ii) Write the degree of the table. (iii) Insert the following data into the attributes Rollno, Name, Class, Fees and Qtr in fees table. (iv) Aman want to remove the table Fees table from the database School. Which command will he use from the following: a) DELETE FROM Fees; b) DROP TABLE Fees; c) DROP DATABASE Fees; d) DELETE Fees FROM Fees;</p> (v) Now Aman wants to display the structure of the table Fees, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same.	1x4 =4
23	Anis of class 12 is writing a program to create a CSV file "mydata.csv" which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.	1x4 =4

	<pre> import _____ # Line 1 def addCsvFile(Username,PassWord): # to write / add data into the CSV file f=open(' mydata.csv', '_____') # Line 2 newFileWriter = csv.writer(f) newFileWriter.writerow([Username,PassWord]) f.close() #csv file reading code def readCsvFile(): # to read data from CSV file with open('mydata.csv','r') as newFile: newFileReader = csv._____ (newFile) # Line 3 for row in newFileReader: print (row[0],row[1]) newFile._____ # Line 4 addCsvFile("Aman","123@456") addCsvFile("Anis","aru@nima") addCsvFile("Raju","myname@FRD") readCsvFile() #Line 5 </pre> <p>(a) Give Name of the module he should import in Line 1. (b) In which mode, Aman should open the file to add data into the file (c) Fill in the blank in Line 3 to read the data from a csv file. (d) Fill in the blank in Line 4 to close the file. (e) Write the output he will obtain while executing Line 5.</p>	
Part B (Section I)		
24	<p>Evaluate the following expressions:</p> <p>a) $8 * 3 + 2 ** 3 // 9 - 4$ b) $12 > 15$ and $8 > 12$ or not $19 > 4$</p>	2
25	<p>Differentiate between Viruses and Trojans in context of networking and data communication threats.</p> <p style="text-align: center;">OR</p> <p>Differentiate between Website and webpage. Write any two popular example of online shopping.</p>	2
26	<p>Expand the following terms:</p> <p>a. HTTP b. FLOSS c. PAN d. IRC</p>	2
27	<p>Differentiate between call by value and call by reference with a suitable example for each.</p> <p style="text-align: center;">OR</p> <p>Explain the use of return key word used in a function with the help of a suitable example.</p>	2
28	<p>Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.</p> <pre> p=30 for c in range(0,p) If c%4==0: print (c*4) Elseif c%5==0: print (c+3) else print(c+10) </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 Lower and Upper.</p> <pre> import random AR=[20,30,40,50,60,70]; </pre>	2

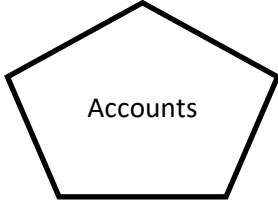
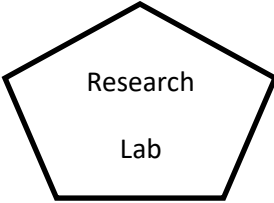
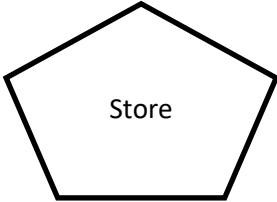
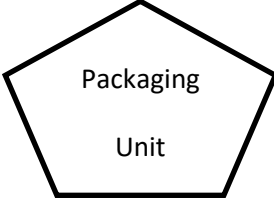
	<p>Lower =random.randint(1,4) Upper =random.randint(2,5) for K in range(Lower, Upper +1): print (AR[K],end="#"")</p> <p>(i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#</p>					
30	What do you understand by Foreign Key in a table? Give a suitable example of Foreign Key from a table containing some meaningful data.	2				
31	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	2				
32	Categorize the following as DML and DDL Commands: SELECT, INSERT, CREATE, UPDATE, ALTER, DELETE, DROP	2				
33	Find and write the output of the following Python code: <pre>def Show(str): m="" for i in range(0,len(str)): if(str[i].isupper()): m=m+str[i].lower() elif str[i].islower(): m=m+str[i].upper() else: if i%2==0: m=m+str[i-1] else: m=m+"#" print(m) Show('HappyBirthday')</pre>	2				
Part B(Section II)						
34	Write a function LMove(Lst,n) in Python, which accepts a list Lst of numbers and n is a numeric value by which all elements of the list are shifted to left. Sample Input Data of the list Lst= [10,20,30,40,12,11], n=2 Output Lst = [30,40,12,11,10,20]	3				
35	Write a function in Python that counts the number of “Me” or “My” words present in a text file “STORY.TXT”. If the “STORY.TXT” contents are as follows: My first book was Me and My Family. It gave me chance to be Known to the world. The output of the function should be: Count of Me/My in file: 4 <p style="text-align: center;">OR</p> Write a function AMCount() in Python, which should read each character of a text file STORY.TXT, should count and display the occurrences of alphabets A and M (including small cases a and m too). Example: If the file content is as follows: Updated information As simplified by official websites. The AMCount() function should display the output as: A or a: 4 M or m :2	3				
36	Consider the table TEACHER given below. Write commands in SQL for (i) to (iii)	3				
TEACHER						
ID	Name	Department	Hiredate	Category	Gender	Salary
1	Taniya	SocialStudies	03/17/1994	TGT	F	25000
2	Abhishek	Art	02/12/1990	PRT	M	20000

3	Sanjana	English	05/16/1980	PGT	F	30000
4	Vishwajeet	English	10/16/1989	TGT	M	25000
5	Aman	Hindi	08/1/1990	PRT	F	22000
6	Pritam	Math	03/17/1980	PRT	F	21000
7	RajKumar	Science	09/2/1994	TGT	M	27000
8	Sital	Math	11/17/1980	TGT	F	24500

- To display all information about teachers of Female PGT Teachers.
- To list names, departments and date of hiring of all the teachers in descending order of date of joining.
- To count the number of teachers and sum of their salary department wise.

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.	3
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Part B Section III

38	<p>Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Accounts</p> </div> <div style="text-align: center;">  <p>Research Lab</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  <p>Store</p> </div> <div style="text-align: center;">  <p>Packaging Unit</p> </div> </div> <p>Distance between various building are as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Accounts to research Lab</td> <td>55m</td> </tr> <tr> <td>Accounts to store</td> <td>150m</td> </tr> <tr> <td>Store to packaging unit</td> <td>160m</td> </tr> <tr> <td>Packaging unit to research lab</td> <td>60m</td> </tr> <tr> <td>Accounts to packaging unit</td> <td>125m</td> </tr> <tr> <td>Store to research lab</td> <td>180m</td> </tr> </table> <p>Number of Computers</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Accounts</td> <td>25</td> </tr> <tr> <td>Research Lab</td> <td>100</td> </tr> <tr> <td>Store</td> <td>15</td> </tr> <tr> <td>Packaging Unit</td> <td>60</td> </tr> </table>	Accounts to research Lab	55m	Accounts to store	150m	Store to packaging unit	160m	Packaging unit to research lab	60m	Accounts to packaging unit	125m	Store to research lab	180m	Accounts	25	Research Lab	100	Store	15	Packaging Unit	60	5
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Packaging Unit	60																					

As a network expert, provide the best possible answer for the following queries:
 i) Suggest a cable layout of connections between the buildings.
 ii) Suggest the most suitable place (i.e. buildings) to house the server of this organization.
 iii) Suggest the placement of the following device with justification:
 a) Repeater b) Hub/Switch
 iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.
 v) Which cable is best suited for above layout.

39 Write SQL commands for the queries (i) to (iii) and output for (iv) & (v) based on a table COMPANY and CUSTOMER .

COMPANY

CID	NAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	MADRAS	MOBILE
666	DELL	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	Rohan Sharma	70000	20	222
102	Deepak Kumar	50000	10	666
103	Mohan Kumar	30000	5	111
104	SahilBansal	35000	3	333
105	NehaSoni	25000	7	444
106	SonalAggarwal	20000	5	333
107	Arjun Singh	50000	15	666

(i) To display those company name which are having price less than 30000.
 (ii) To display the name of the companies in reverse alphabetical order.
 (iii) To increase the price by 1000 for those customer whose name starts with 'S'
 (iv) SELECT PRODUCTNAME,CITY, PRICE FROM COMPANY,CUSTOMER
 WHERE COMPANY.CID=CUSTOMER.CID AND PRODUCTNAME="MOBILE";
 (v) SELECT AVG(QTY) FROM CUSTOMER WHERE NAME LIKE "%r%";

40 A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price].
 i. Write a user defined function CreateFile() to input data for a record and add to "Book.dat" .
 ii. Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"
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%
