MARKING SCHEME

KVS – GURUGRAM REGION
Class: XII - Computer Science (083) Session: 2020-21

Pre-Board Question Paper (Theory)

ime : 3 Hrs MM:70

	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
Ans	s) S_name	
2	Given the lists L=[1,3,6,82,5,7,11,92] , What will be the output of print(L[2:5])	1
Ans	[6,82,5]	
3	Write the full form of IDLE.	1
Ans	Integrated Development Learning Environment	
4	Identify the valid logical operator in Python from the following. a) ? b) < c) ** d) and	1
Ans	d) and	
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
Ans	b) Tup[2]=90	
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
Ans	Dict={1:'Apple', 2: 'Mango',3 : 'Banana'}	
7	A tuple is declared as T = (2,5,6,9,8) What will be the value of sum(T)?	1
Ans	30	
8	Name the built-in mathematical function / method that is used to return square root of a number.	1
Ans	sqrt()	
9	Protocol is used to send email ……	1
Ans	SMTP	
10	Your friend Sunita complaints 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
Ans	Identity Theft	
11	In SQL, name the command/clause that is used to display the rows in descending order of a column.	1
Ans	Order By …… Desc	
12	In SQL, what is the error in following query : SELECT NAME,SAL,DESIGNATION WHERE DISCOUNT=NULL;	1
Ans	SELECT NAME,SAL,DESIGNATION WHERE DISCOUNT IS NULL;	

13	Write any two aggregate functions used in SQL.	1
Ans	max(),min(),avg(),count()	
14	Which of the following is a DML command? a) SELECT b) Update c) INSERT d) All of these	1
Ans	d) All of these	
15	Name the transmission media best suitable for connecting to desert areas.	1
Ans	Microwave	
16	Identify the valid declaration of P: P= ['Jan', 31, 'Feb', 28] a. dictionary b. string c.tuple d. list	1
Ans	d) list	
17	If the following code is executed, what will be the output of the following code? str="KendriyaVidyalayaSangathan" print(str[8:16])	1
Ans	Vidyalay	
18	In SQL, write the query to display the list of databases.	1
Ans	SHOW DATABASES;	
19	Write the expanded form of VPN.	1
Ans	Virtual Private Network	
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
Ans	b) Distinct	
21	Rearrange the following terms in increasing order of speedy medium of data transfer. Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	1
Ans	Telephone line, Twisted Pair Cable, Coaxial Cable, Fiber Optics	
	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	Modern Public School is maintaining fees records of students. The database administrator Aman decided that- • Name of the database -School • Name of the table – Fees • The attributes of Fees are as follows: Rollno - numeric Name – character of size 20 Class - character of size 20 Fees – Numeric Qtr – Numeric 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;	1x4 =4

	d) DELETE Fees FROM Fees; (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.	
Ans	i)Primary Key – Rollno ii)Degree of table= 5 iii)Insert into fees values(101,'Aman','XII',5000); iv)DELETE FROM Fees v)Describe Fees	

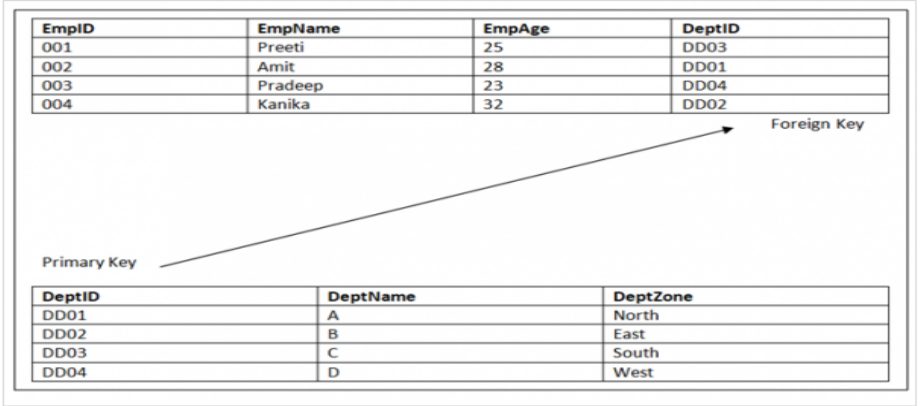
23	Anis of class 12 is writing a program to create a CSV file "mydata.csv" which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.
	
	import _____ # Line 1
	def addCsvFile(UserName,PassWord): # to 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
	
	(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.
		1x4 =4

Ans	(a) Line 1 : csv (b) Line 2 : a (c) Line 3 : reader (d) Line 4 : close() (e) Line 5 : Aman 123@456 Anis aru@nima Raju myname@FRD	
	Part B Section I	
24	Evaluate the following expressions: a) 8 * 3 + 2**3 // 9 – 4 b) 12 > 15 and 8 > 12 or not 19 > 4	2

Ans	a) 20 b) False	
25	Differentiate between Viruses and Trojans in context of networking and data communication threats. OR Differentiate between Website and webpage. Write any two popular example of online shopping.	2
Ans	Virus: Virus is a computer program or software that connect itself to another software or computer program to harm computer system. When the computer program runs attached with virus it perform some action such as deleting a file from the computer system. Virus can't be controlled by remote. Trojan Horse: Trojan Horse does not replicate itself like virus and worms. It is a hidden piece of code which steal the important information of user. For example, Trojan horse software observe the e-mail ID and password while entering in web browser for logging. OR Web Page is a document or a page where there is information. We can see those pages in the browser. Web Page is a single page with information. It can be in any form like texts, images or videos. Whereas the Website is a collection of webpages. The website has its own domain name which is unique throughout the world. Anything can be stored on a website like photos, videos, texts etc . Popular example of online shopping : Amazon,Flipcart etc	
26	Expand the following terms: a. HTTP b. FLOSS c. PAN d. IRC	2
Ans	HTTP – Hyper Text Markup Language FLOSS- Free Libre Open Source Software PAN- Personal Area Network IRC- Internet Relay Chat	
27	Differentiate between call by value and call by reference with a suitable example for each. OR Explain the use of return key word used in a function with the help of a suitable example.	2
Ans	In the event that you pass arguments like whole numbers, strings or tuples to a function, the passing is like call-by-value because you can not change the value of the immutable objects being passed to the function. Whereas passing mutable objects can be considered as call by reference because when their values are changed inside the function, then it will also be reflected outside the function. OR The return statement is used to return a value of function to its calling program. Example: def mysum(a,b): return a+b print(mysum(10,20)) Output: 30	

28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.
	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)
		2

Ans	p=30
	for c in range(0,p)**:**
	  if c%4==0:
	  print (c*4)
	  elif c%5==0:
	  print (c+3)
	  else:
	  print(c+10)	

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 Lower and Upper. import random AR=[20,30,40,50,60,70]; Lower =random.randint(1,4) Upper =random.randint(2,5) for K in range(Lower, Upper +1): print (AR[K],end="#") (i) 40# (ii) 40#50#60# (iii) 50# (iv) All	2
Ans	All of these	
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
Ans	A Foreign Key creates a link between tables. It references the primary key in another table and links it. For example, the DeptID in the Employee table is a foreign key –  	

EmpID	EmpName	EmpAge	DeptID
001	Preeti	25	DD03
002	Amit	28	DD01
003	Pradeep	23	DD04
004	Kanika	32	DD02

DeptID	DeptName	DeptZone
DD01	A	North
DD02	B	East
DD03	C	South
DD04	D	West

31	Differentiate between fetchone() and fetchall() methods with suitable examples for each.	2
Ans	fetchall() fetches all the rows of a query result. An empty list is returned if there is no record to fetch the cursor. fetchone() method returns one row or a single record at a time. It will return None if no more rows / records are available. Any example.	
32	Categorize the following as DML and DDL Commands: SELECT, INSERT, CREATE, UPDATE, ALTER, DELETE, DROP	2
Ans	DDL – Create, Alter, Drop DML- Select, Insert, Update, Delete	

33	Find and write the output of the following Python code:
	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')
		2

Ans	hAPPYbIRTHDAY	
	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

Ans	def LMove(Lst,n):
	L=len(Lst)
	for x in range(0,n):
	y=Lst[0]
	for i in range(0,L-1):
	Lst[i]=Lst[i+1]
	Lst[L-1]=y
	print(Lst)
	#Note : Using of any correct code giving the same result is also accepted.	

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	3

OR

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

Ans

```
def displayMeMy():
    num=0
    f=open("story.txt","rt")
    N=f.read()
    M=N.split()
    for x in M:
        if x=="Me" or x== "My":
            print(x)
            num=num+1
    f.close()
    print("Count of Me/My in file:",num)
```

OR

```
def AMCount():
    f=open("story.txt","r")
    A,M=0,0
    r=f.read()
    for x in r:
        if x[0]=="A" or x[0]=="a" :
            A=A+1

    elif x[0]=="M" or x[0]=="m":
        M=M+1
    f.close()
    print("A or a: ",A)
    print("M or m: ",M)
```

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

i. To display all information about teachers of Female PGT Teachers.

ii. To list names, departments and date of hiring of all the teachers in descending order of date of joining.

iii. To count the number of teachers and sum of their salary department wise.

Ans

i) SELECT * FROM TEACHER WHERE CATEGORY= 'PGT' AND GENDER= 'F';
ii) SELECT NAME, DEPARTMENT, HIREDATE FROM TEACHER ORDER BY HIREDATE DESC;
iii) SELECT DEPARTMENT, COUNT(NAME), SUM(SALARY) FROM TEACHER GROUP BY DEPARTMENT;

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

Ans

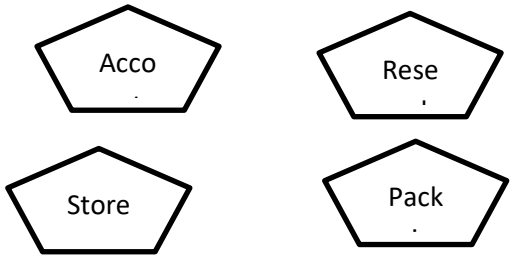
```
def PUSH(Arr,value):
 s=[]
 for x in range(0,len(Arr)):
 if Arr[x]%5==0:
 s.append(Arr[x])
 if len(s)==0:
print("Empty Stack")
else:
print(s)
```

OR

```
def popStack(st) : # If stack is empty
if len(st)==0:
print("Underflow")
 else:
 L = len(st)
val=st[L-1]
print(val)
st.pop(L-1)
```

Part B Section III

38 Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below: 5



Distance between various building are as follows:

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

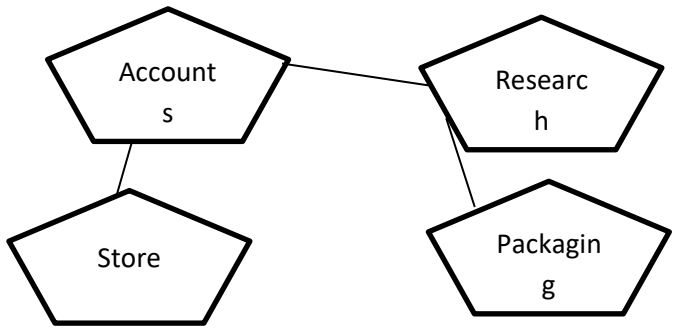
Number of Computers

Accounts	25
Research Lab	100
Store	15
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.

Ans

i) Layout-



ii)The most suitable place/ building to house the server of this organization would be building Research Lab, as this building contains the maximum number of computers.

(iii)

a) For layout1, since the cabling distance between Accounts to Store is quite large, so a repeater would ideally be needed along their path to avoid loss of signals during the course of data flow in this route. For layout2, since the cabling distance between Store to Research Lab is quite large, so a repeater would ideally be placed.

b) In both the layouts, a Hub/Switch each would be needed in all the buildings to interconnect the group of cables from the different computers in each building.

(iv) Firewall
(v) Twisted Pair cable / Ethernet cable

39 Write SQL commands for the queries (i) to (iii) and output for (iv) & (v) based on a table COMPANY and CUSTOMER . 5

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%;

Ans
i) SELECT COMPANY.NAME FROM COMPANY,CUSTOMER
WHERECOMPANY.CID = CUSTOMER.CID AND CUSTOMER.PRICE <30000;
ii) SELECT NAME FROM COMPANY ORDER BY NAME DESC;
iii) UPADE CUSTOMER
SET PRICE = PRICE+1000
WHERE NAME LIKE 'S%';
iv)

PRODUCTNAME	CITY	PRICE
MOBILE	MUMBAI	70000
MOBILE	MUMBAI	25000

v) 12

40 A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. 5

	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%	

Ans	import pickle
	def createFile():
	  fobj=open("Book.dat","ab")
	  BookNo=int(input("Book Number : "))
	  Book_name=input("Name :")
	  Author = input("Author:")
	  Price = int(input("Price : "))
	  rec=[BookNo,Book_Name,Author,Price]
	  pickle.dump(rec,fobj)
	  fobj.close()
	
	def CountRec(Author):
	  fobj=open("Book.dat","rb")
	  num = 0
	  try:
	  while True:
	  rec=pickle.load(fobj)
	  if Author==rec[2]:
	  num = num + 1
	  except:
	  fobj.close()
	  return num
	
	OR
	
	import pickle
	def CountRec():
	  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	