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FIRST PRE-BOARD EXAMINATION 2020-21

Class- XII Computer Science (083)

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 subparts. 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 no1 to 21	
1.	Find the valid identifier from the following (a) Tot$balance (b) TRUE (c) 4thdata (d) break	1
2.	Given a string S = “ComPUterSciEnce”, write the output of print(S[3:10:2])	1
3.	…….. is the module used for storing data in binary format. It can be used to store any kind of object in file and allows to store python objects with their structure..	1
4.	Identify the valid relational operator in Python from the following. (a) ? (b) => (c) != (d) in	1
5.	Suppose a tuple T is declared as T=(10,20,30) and a list L=["mon", "tue", "wed", "thu", "fri", "sat", "sun"], which of the following is incorrect ? a) min(L) b) L[2] = 40 c) T[3] = “thurs”	1

	d) print(min(T))	
6.	Write a statement in Python to declare a dictionary MONTH whose keys are 1,2,3,4,5,6 and values are January, February, March, April, May, June respectively.	1
7.	A tuple is declared as T = (“JAY”, “HARSH”, “SEEMA”, “PRAKASH”) what will be the value of max(T)	1
8.	Name the built-in mathematical function/method that is used to return the square root of a number.	1
9.	Name the protocol that is used for remote login.	1
10.	Mr. Bose has complaint that somebody has taken my credit card details and used it without my knowledge. He claimed to be a Bank official and Mr. Bose has shared some confidential details with him due to which he had lost all his credit card balance. Identify the type of cybercrime for these situations.	1
11.	In SQL, name the Operator that is used to search a value similar to specific pattern in a column using wildcard operators like % and _.	1
12.	Riya has given the following SQL command to display Name of employees whose Employee code is not available. SELECT NAME FROM EMP WHERE EMPCODE=NULL; Identify the error in above command and re write the command.	1
13.	Write aggregate command in SQL to calculate average of tuples in an attribute of a table.	1
14.	Which of the following is a DML command ? (a) DROP (b) INSERT (c) ALTER (d) CREATE	1
15.	Name the transmission media best suitable for transmission in a large area i.e across the countries.	1
16.	Identify the valid declaration of T: T = {“Roll”:123, “Name”: “Hiya”, “Class”:12, “Subject” : ”Computer Science”} 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 ? Lt=[1,”Computer”,2,”Science”,10,”PRE”,30,”BOARD”] print(Lt[3:])	1
18.	In SQL, write the query to display the list of all databases.	1
19.	Write the expanded form of WiMAX.	1
20.	Which among the following are valid table constraints? a) Candidate Key b) NULL c) Distinct d) Primary Key	1
21.	Rearrange the following terms in increasing order of Bandwidth. KHz, Hz, GHz, THz, MHz	1
	Section-II **Both the case study based questions are compulsory. Attempt any 4 subparts from each question. Each question carries 1 mark.**	
22.	A Book store is considering to maintain their inventory using SQL to store the data. As a database administer, shashank has decided that:	

- Name of database – BOOK STORE
- Name of table – BOOK
- The attribute of BOOK are as follows:

  Code – alphanumeric of size 10
  Bname – character of size 30
  Cust_code – float
  Price – numeric
  Type – character of size 25

Table : BOOK

Code	Bname	Cust_code	Price	Type
F101	The priest	C083	315	Fiction
L102	German easy	C312	410	Literature
C103	Tarzan in the lost world	C113	100	Comic
F102	Untold story	C083	215	Fiction
C102	War heroes	C113	150	Comic
F103	Poison Garden	C083	200	Fiction

(a) Identify the attribute best suitable to be declared as a primary key. 1

(b) Write the degree and cardinality of Table BOOK. 1

(c) Insert the following data into the attributes Code, BName, Cust_code and Price. 1
Code = 'C105' Bname = "City heroes" Cust_code= 'C113' and Price=75

(d) Rahul want to remove all the records from the table BOOK. Which command will he use from the following: 1

(a) DROP TABLE BOOK;
(b) DELETE FROM BOOK;
(c) DROP DATABASE BOOK STORE;
(d) DELETE BOOKS FROM BOOK;

(e) Now Rahul wants to display the structure of the table BOOK, 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. 1

23 Parth Patel of class 12 is writing a program to create a CSV file "emp.csv" which will contain employee code and name of some employees. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____                          #Line 1
def addemp(empcode,name):#to write/add data into the CSV file
   fo=open('emp.csv','a')
   writer=csv._____ (fo)              #Line 2
   writer.writerow([empcode,name])
   fo.close()

#csv file reading code
```

	def reademp():
	  with open('emp.csv','_____ ') as fin: #Line 3
	  filereader=csv.reader(fin)
	  for row in filereader:
	  for data in row:
	  print(data,end='\t')
	  print(end='\n')
	  fin._____ #Line 4
	
	addemp('E105','Parth')
	addemp("E101",'Arunima')
	addemp("E102",'Prahalad')
	reademp() #Line 5	

	(a) Name the module he should import in Line 1.	1
	(b) Fill in the blank in Line 2 to write the data in a CSV file.	1
	(c) In which mode, Parth should open the file to read the data from the file(Line 3).	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.	Give the output given by the following code fragments. a) y=str(123) print(y*3) b) 5 <10 and 10 < 5 or 3 < 18 and not 8 < 18	2
25.	Differentiate between Spam and Trojan horse in context of networking and data communication threats. **OR** Differentiate between URL and Domain name. Explain with help of a suitable example.	2
26	Expand the following terms: a. FTP b. HTML c. PAN d. GPRS	2

27.	Write the output given by following Python code.
	x=1
	def fun1():
	  x=3
	  x=x+1
	  print(x)
	
	def fun2():
	  global x
	  x=x+2
	  print(x)
	
	fun1()
	fun2()
		2

	OR What do you mean by default parameters? Explain with the help of suitable example.	

28.	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.
	STRING=""WELCOME
	NOTE = " "
	for S in range(0,8):
	if STRING[S]= 'E':
	print(STRING(S))
	Else:
	print "NO"
		2

29.	What are the possible outcome(s) executed from the following code ? Also specify the maximum and minimum values that can be assigned to variable N. import random SIDES=["EAST","WEST","NORTH","SOUTH"] N=random.randint(1,3) OUT="" for I in range(N,1,–1): OUT=OUT+SIDES[I] print(OUT) (i) SOUTHNORTH (ii) SOUTHNORTHWEST (iii) SOUTH (iv) EASTWESTNORTH	2
30	What do you understand by Primary key and Candidate keys in a table ? Explain with the help of suitable example from a table containing some meaningful data.	2

31.	#To fetch all records of a table at run time
	import _____ .connector #Line 1
	mydb=mysql.connector. _____ (host="localhost",user="root",
	passwd="root", database="school") #Line 2
	mycursor=mydb.cursor()
	mycursor. _____ ("select * from student") # Line 3
	myrecords=mycursor. _____ () # Line 4
	for x in myrecords:
	print (x)
		2

32.	How INSERT is different from ALTER command in SQL.	2
33.	Find and write the output of the following Python code : Str1="PREBOARD2020" Str2="" I=0 while I<len(Str1):	2

```
    if Str1[I]>="A" and Str1[I]<="R":
        Str2=Str2+Str1[I+1]
    elif Str1[I]>="0" and Str1[I]<="9":
        Str2=Str2+ (Str1[I-1])
    else:
        Str2=Str2+"*"
    I=I+1
print(Str2)
```

Section-II

34. Write definition of a method ODDSum(NUMBERS) to add those values in the list of NUMBERS, which are odd. 3

Sample Input Data of the List
NUMBERS=[20,40,10,5,12,11]
OUTPUT is 16

35. Write a method cnt_M() in Python to read lines from a text file 'MYNOTES.TXT', and display those lines, which are starting with the alphabet 'M'‖. 3

If the "MYNOTES.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 lines starting with M is: 2

OR

Write a method/function LARGEWORDS() in Python to read contents from a text file CODE.TXT, to count and display the occurrence of those words, which are having 7 or more alphabets.

For example :
If the content of the file is
ME AND MY FRIENDS
ENSURE SAFETY AND SECURITY OF EVERYONE
The output of the function should be: 3

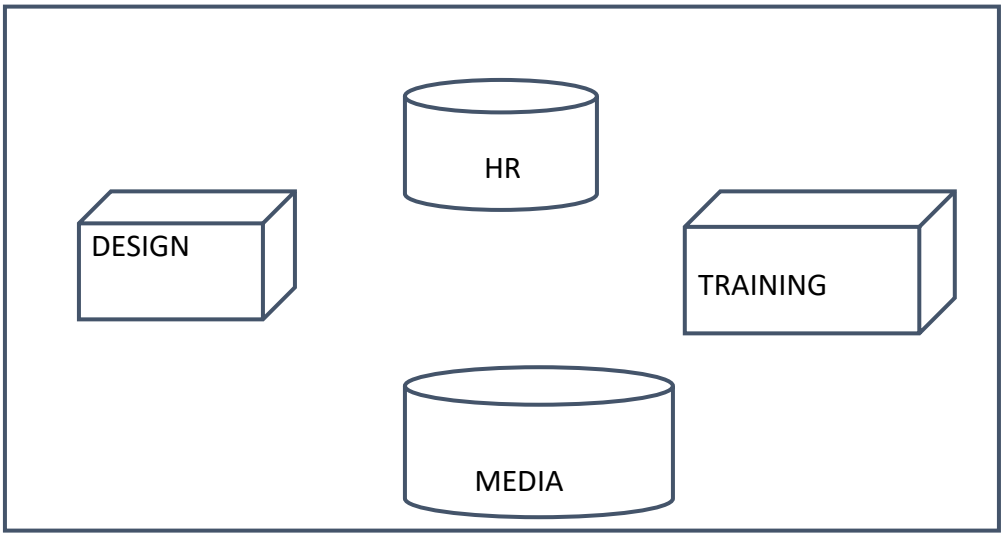
36. Write the outputs of the SQL queries (i) to (iii) based on relations EMP and DESIG given below: 3

Table: EMP

E_ID	Name	Gender	Age	DOJ	Designation
1	Om Prakash	M	35	10/11/2009	Manager
2	Jai Kishan	M	32	12/05/2013	Accountant
3	Shreya Sharma	F	30	05/02/2015	Clerk
4	Rakesh Minhas	M	40	15/05/2007	Manager
5	Himani Singh	F	33	19/09/2010	Clerk

	Table: DESIG
	Salary | E_ID | DEPT_ID
	45000 | 1 | D101
	35000 | 2 | D102
	45000 | 4 | D101
	
	i) SELECT Designation, count(*) FROM EMP GROUP BY Designation;
	ii) SELECT AVG(Age) FROM EMP;
	iii) SELECT EMP.Name, EMP.Designation,DESIG.Salary FROM EMP, DESIG WHERE EMP.E_ID = DESIG.E_ID AND EMP.Age>35;	

37.	Write a function in Python PUSH(Num), where Num is a list of integer numbers. From this list push all positive even numbers 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(cities), where cities is a stack implemented by a list of city names for eg. cities=['Delhi', 'Jaipur', 'Mumbai', 'Nagpur']. The function returns the value deleted from the stack.	3
	Section-III	
38.	Biyani Design and Training Institute is setting up its center in Jaipur with four specialized units for Design, Media, HR and Training in separate buildings. The physical distances between these units and the number of computers to be installed in these units are given as follows. You as a network expert, have to answer the queries as raised by the administrator as given in (i) to (v). Shortest distances between various locations in meters : Design Unit to Media Unit | 60 Design Unit to HR Unit | 40 Design Unit to Training Unit | 60 Media Unit to Training Unit | 100 Media Unit to HR Unit | 50 Training Unit to HR Unit | 60 Number of computers installed at various locations are as follows: Design Unit | 40 Media Unit | 50 HR Unit | 110 Training Unit | 40	5



a)Suggest the most suitable place (i.e.,Unit/Building) to install the server of this Institute.
b) Suggest an ideal layout for connecting these Unit/Building for a wired connectivity.
c) Suggest the devices to be installed in each of these buildings for connecting computers installed within each of the units out of the following :
Modem, Switch, Gateway, Router
d) Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable :
Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.
e) The institute is planning to connect its admission office in Bangalore, which is 1960km from institute. Which type of network out of LAN, MAN or WAN will be formed ? Justify your answer.

39. Consider the following tables WORKERS and DESIG. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to (viii) : 5

WORKERS

W_ID	FIRSTNAME	LASTNAME	GENDER	ADDRESS	CITY
102	Sam	Tones	M	33 Elm St	Paris
105	Sarah	Ackerman	F	U.S. 110	New York
144	Manila	Sengupta	F	24 Friends Street	New Delhi
210	George	Smith	M	83 First Street	Howard
255	Mary	Jones	F	842,Vine Ave.	Losantiville
300	Robert	Samuel	M	9 Fifth Cross	Washington
335	Henry	Williams	M	12 Moore Street	Boston
403	Ronny	Lee	M	121 Harrison St.	New York
451	Pat	Thompson	M	11 Red Road	Paris

DESIG

W_ID	SALARY	BENEFITS	DESIGNATION
102	75000	15000	Manager
105	85000	25000	Director
144	70000	15000	Manager
210	75000	12500	Manager
255	50000	12000	Clerk
300	45000	10000	Clerk
335	40000	10000	Clerk
400	32000	7500	Salesman
451	28000	7500	Salesman

(i) To display W_ID, Firstname, Address and City of all employees living in New York from the table WORKERS.

(ii) To display the content of WORKERS table in ascending order of LASTNAME.

(iii) To display First Name, Worker ID and Address of male Workers only.

(iv) To display the Minimum salary among Managers and Clerks from the table DESIG.

(v) To display First Name and Salary from Workers and Desig Table for each worker.

40. A binary file "STOCK.DAT" has structure [ITEMID, ITEMNAME, QUANTITY, PRICE]. 5

(i) Write a user defined function *MakeFile( )* to input data for a record and add to Book.dat.

(ii) Write a function *GetPrice(ITEMID)* in Python which accepts the ITEMID as parameter and return PRICE of the Item stored in Binary file STOCK.DAT.

OR

A binary file "EMPLOYEE.DAT" has structure (EMPID, EMPNAME, SALARY). Write a function *CountRec( )* in Python that would read contents of the file "EMPLOYEE.DAT" and display the details of those Employees whose Salary is above 20000. Also display number of employees having Salary more than 20000.