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PRE-BOARD EXAMINATION

Class: XII Session: 2020-21

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 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.
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.**	
Q1	Find the valid identifier(s) from the following: a. var1 b. Elif c. 1File d. My File	1
Q2	Given the list L=['A','B','C','D','E','F'] , write the output of print (L [-1 : -len(L)-1 : -1])	1
Q3	How would you write **x floor division y** in python as an expression?	1
Q4	Suppose a tuple T is declared as Tup = (10, 'AB', '22.2', 5,3,7), which of the following is incorrect: **a. print(Tup[2])** **b. print(Tup(1) = 2)** **c. print(Tup[4] = 'D')** **d. print(max(Tup))**	1
Q5	How many types of files can be handled by Python programming?	1
Q6	Write a statement in Python to declare a dictionary whose keys are 1, 2, 3 and values are One, Two and Three respectively.	1
Q7	Write the output of the following code: T = (11,12,13,14,15,16,17) print (T [-1 : : 1])	1
Q8	Name the built-in mathematical function / method that is used to return an octal string for given number.	1
Q9	What is the full form of ARPANET.	1
Q10	Central Computer which is powerful than other computers in the networks is called as _____. a. Client b. Server c. Hub d. Switch	1
Q11	In SQL, name the clause that is used to place conditions on groups in contrast to WHERE clause that places conditions on individual rows.	1
Q12	In SQL, what is the use of IFNULL() function?	1
Q13	Write any one string function used in SQL.	1

Q14	Write any one DDL command?	1
Q15	Which topology requires a central computer/controller.	1
Q16	Identify the valid data type of **A** out of given options: A = 1,2,3,4 a. Integer b. List c. Tuple d. none of these	1
Q17	If the following code is executed, what will be the output of the following code? str = "CBSE Question Papers 2020" print(str[5:-6])	1
Q18	In SQL, write the query to set a database **Classxii** active stored in a database.	1
Q 19	Write the expanded form of Wifi.	1
Q20	Name the column constraint which can prevent the entry of NULL values in a column?	1
Q21	What is the full form of NIC?	1
	Section-II **Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**	
Q22	An Organization "Amaze tech" is considering to maintain their Employees details using SQL to store the data. As a database administer, Aviral has decided that : a) Name of the data base – Amaze b) Name of the table – Employee. c) The Attributes of a table as follows : a. EmpID - Numeric b. EName - String c. DeptNo - Numeric d. Gross - Float	

EmpID	EName	DeptNo	Gross
100	Anushka	10	20000
110	Arman	20	23000
111	Gourang	10	30000
112	Asif	30	20000

114	Ravi	30	22000
115	Pranav	10	25000
102	Naveesha	20	30000

1

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

b) Write the degree and cardinality of the table EMPLOYEE 1

c) Insert the following data into the attributes ItemNo, ItemName and SCode respectively
in the given table EMPLOYEE. 1
EmpID = 101 ; EName = Sunny ; DeptNo = 10 ; Gross = 25000

d) Aviral wants to remove the EMPLOYEE table's data, Which command will he use from
the following:
a) DELETE FROM EMPLOYEE;
b) DROP TABLE EMPLOYEE; 1
c) DROP DATABASE EMPLOYEE;
d) DELETE EMPLOYEE FROM Amaze;

e) Now Aviral wants to display the structure of the table Employee, 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.

Q23 Amar Singh of class 12 is writing a program to create a CSV file "stu.csv" which will contain ROLL NO and NAME for some students. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____                                  # Line 1

def  writeData(Roll,Name):                    # to write data into the CSV file
    fout=open(' user.csv','_____')            # Line 2
   newFileWriter = csv.writer(fout)
   newFileWriter.writerow([Roll,Name])
    fout.close()


def readData():                                  # to read data from CSV file
   with open(' user.csv','r') as newFile:
      newFileReader = csv._____(newFile)      # Line 3
      for row in newFileReader:
         print (row[0],row[1])
```

	newFile._____ # Line 4
	writeData(2,"ABC")
	writeData(15, "XYZ")
	writeData(12, "PQR")
	readData( ) #Line 5
	
	a) Name the module he should import in Line 1.
	b) In which mode, Amar 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.
		1
		1
		1
		1
		1

	PART B SECTION I	
Q24	Evaluate the following expressions: a) 4* 4 + 5**2 // 5 – 4 b) (5 < 10) and (10 < 5) or (3 < 18) and not 8 < 18	2
Q25	Differentiate between LAN and WAN. OR Differentiate between LAN and PAN.	2
Q26	Write two advantages of Radio wave transmission.	2
Q27	Differentiate between Argument(s) and Parameter(s) with a suitable example for each. OR Explain the use of global key word used in a function with the help of a suitable example	2
Q28	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. str = "HELLO TO PYTHON WORLD" while i in range(length(str)) PRINT (str[i])	2

Q29	What are the possible outcome(s) executed from the following code? Also specify the maximum and minimum values that can be assigned to a variable Number. import random STR = 'CBSEONLINE' NUMBER = random.randint(0,3) N= 9 while STR[N] != 'L': print (STR[N] + STR[NUMBER] + '#', end = ' ') NUMBER += 1 N = N - 1 **a) ES#NE#IO#** **b) LE#NO#ON#** **c) NS#IE#LO#** **d) EC#NB#IS#**	2
Q30	What do you understand by Primary Key in a table? Give a suitable example of Primary Key from a table containing some meaningful data.	2
Q31	Differentiate between now() and sysdate() functions with the help of a suitable examples.	2
Q32	Write the full forms of DDL and DML. Write any two commands of DDL in SQL.	2

Q33	Find and write the output of the following Python code:
	def Disp_str(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()
	elif i%2==0:
	m=m+str[i-1]
	else:
	m=m+"#"
	print(m)
	
	Disp_str('Hello@World.com')
		2

	Section II	
Q34	Write a program that rotates the elements of a list so that the element at the first index moves to the second index, the element in the second index moves to the third index, etc., and the element in the last index moves to the first index.	3

If Input list is :
Arr= [1,2,3,4,12,11]
then Output :
Arr = [11,1,2,3,4,12]

Q35 Write a function in Python that counts the number of “is” or “are” independent words present in a text file “LINES.TXT”. 3

If the “LINES.TXT” contents are as follows:
A boy is playing there.
There is a playground.
An airplane is in the sky.
Alphabets and numbers are allowed in password.

The output of the function should be:
Count of is/are in file: 4

OR

Write a function Count_AE () in Python, which should read each character of a text file DIARY.TXT, should count and display the occurrence of alphabets A and E (including small cases a and e too).

A poem by Paramhansa yoga,
better than heaven or arcadia.

The Count_AE ( ) function should display the output as:
A or a: 11
E or e: 5

Q36 Write the outputs of the SQL queries (a) to (c) based on the relations Employee and Salary given below: 3

Table : Employee

EmpId	Name	DepId	Gender	Qualification
1	Deepti	101	F	BCA
2	Razat	101	M	MCA
3	Hari	102	M	B.A
4	Harry	103	M	B.Tech
5	Jyoti	101	F	M.Tech

Table : Salary

EmpId	Basic	D.A.	Bonus
1	5000	2300	100
3	10000	3000	200
4	8000	2000	150
5	8500	2200	300

	a) Select min(Basic), max(Basic) from Salary where Bonus > 100;
	
	b) Select DeptId, count(*) from Employee group by DepId;
	
	c) Select Employee.Name, Employee.DepId, Salary.Basic from Employee, Salary where Employee.EmpId = Salary.EmpId;	

Q37	Write a function in Python Push(Lst), where Lst is a list of numbers. From this list push all numbers divisible by 2 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(Lst), where Lst is a stack implemented by a list of numbers. The function returns the value deleted from the stack.	3
	Section III	
Q38	UNIVERSITY OF CORRESPONDENCE in Allahabad is setting up the network between its different wings. There are 4 wings named as Science (S), Journalism (J), Arts (A) and Home Science (H). Distance between various wings are given below: **Wing A to Wing S — 100 mtr** **Wing A to Wing J — 200 mtr** **Wing A to Wing H — 400 mtr** **Wing S to Wing J — 300 mtr** **Wing S to Wing H — 100 mtr** **Wing J to Wing H — 450 mtr** Number of Computers: Wing A — 150 Wing S — 10 Wing J — 5 Wing H — 50	5

a) Suggest the most suitable place (i.e., Wing) to install the server of this University with a suitable reason.

b) Suggest an ideal layout for connecting these wings for a wired connectivity.

c) Which device will you suggest to be placed/installed in each of these wings to efficiently connect all the computers within these wings.

d) Suggest the placement of a Repeater in the network with justification.

e) The university is planning to connect its admission office in Delhi, which is more than 1250 km from university. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer

Q39 Write SQL commands for the following queries (a) to (e) based on the relations Teacher and Posting given below: 5

Table: Employee

EmpId	Name	DepId	Gender	Qualification
1	Deepti	101	F	BCA
2	Razat	101	M	MCA
3	Hari	102	M	B.A
4	Harry	103	M	B.Tech
5	Jyoti	101	F	M.Tech

Table: Salary

EmpId	Basic	D.A.	Bonus
1	5000	2300	100
3	10000	3000	200
4	8000	2000	150
5	8500	2200	300

a) To display the frequency/number of employee department wise.

b) To list the names of those employees only whose name start with 'H'.

c) To display the list of employees in Descending order of their names.

d) To display employee's name, depId and Qualification for male employees only.

e) To display the employee's Salary in ascending order of Basic, if Bonus is greater than 100.

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Q40	A binary file “STUDENT.DAT” has structure (Adm_no, Name, Percentage). Write a function count_rec() 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%	5