PRE-BOARD EXAMINATION-2020-21

SUBJECT - COMPUTER SCIENCE

Class: XII (CBSE) **Total Marks: 80**
Date……. **Time: 3 hrs.**

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 internal options have.
   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

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 invalid identifier from the following **1**
a) else b) 4rth_class c) _sum_of_nos d) simple_intrest

2. Given the lists L=[20,31,64,12,50,17,21,82] , write the output of print(L[3:6]) **1**

3. What is a CSV file? **1**

4. Identify the valid arithmetic operator in Python from the following. **1**
a) or b) >= c) ? d) **

5. Suppose a tuple T is declared as T = (45, 56, 24, 78), which of the following is incorrect? **1**

a) print(T[2])

b) T[3] = -77

c) print(min(T))

d) print(len(T))

6. Write a statement in Python to declare a dictionary whose keys are Sam, Syed, Ahmad, Dilip and values are 88, 79 , 56 and 100 respectively. **1**

7. A tuple is declared as **1**

T = (3, 10, 13, 5, 4), What will be the value of sum(T)

8. Name the built-in mathematical function / method that is used to return an absolute value of a number. **1**

9. Name the protocol that is used to exchange large files across Internet. **1**

10. What is the "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work called as? **1**

11. Name The transmission media best suitable for fastest communication in LAN **1**

12. Identify the valid declaration of T: **1**
T = (99, 'flower', 'green', 78.9, '100', 'yellow', '89.50', '128')

a. dictionary **b**. string **c** .tuple **d.** list

13. If the following code is executed, what will be the output of the following code? **1**

```
name="CentralBoardOfSchoolExamination"
print(name[4:15])
```

14. In SQL, write the query to show the structure of table which include name of the column, data-type of column and the nullability which means, that column can contain null values or not. **1**

15. Write the expanded form of SMTP. **1**

16. Which of the following types of table constraints will prevent the entry of duplicate rows? **1**

a) Primary Key

b) NOT NULL

c) Duplicate

d) Distinct

e) Foreign Key

17. Write the purpose of ipconfig command **1**

SECTION-II

Both the Case study based questions are compulsory.

Attempt any 4 sub parts from each question. Each question carries 1 mark

18. An Educational Institution, edtech is considering to maintain their database using SQL to store the data. As a database administer, Salim has decided that **4**

- Name of the database - edtechDB
- Name of the table - studentTb
- The attributes of studentTb are as follows: StdntId - numeric
  StdntName – text of size 30
  StdntDOB - date type
  AnnualFee – numeric

Table : studentTb

StdntId	StdntName	StdntDOB	AnnualFee
1003	Sameer	2005-01-06	6000
1002	Bharat	2003-02-07	5000
1005	Gladys	2008-05-09	3000
1007	Renuka	2004-03-18	4000
1004	Arshad	2001-06-24	2000
1006	Zahid	2006-10-10	3000
1008	Jamelline	2007-09-08	7000
1009	Sadiq	2008-10-02	5000

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

b. Write the degree and cardinality of the table studentTb.

c. Insert the following data into the attributes StdntId , StdntName StdntDOB and AnnualFee respectively in the given table **studentTb**.
   StdntId = 2000, StdntName = Saira, StdntDOB = 2009-12-12 and AnnualFee = 2500

d. Salim want to remove the table studentTb from the database edtechDB. Write the query to do it.

e. Now Salim wants to display the structure of the table studentTb, 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

19. Abhishek Nanda is writing a program to create a CSV file "sales.csv" which will contain productName(P_Name), productCostPrice(P_CP) and productSellingPrice (P_SP)for some entries. He has written the following code. As a programmer, help him to successfully execute the given task. **4**

```
import_____                                          # Line 1

def addSalesData(P_Name, P_CP, P_SP):    # write  data into  file
    myfile=open(' sales.csv','_____')                # Line 2
    writerObj = csv.writer(myfile)
    writerObj.writerow([P_Name, P_CP, P_SP])
    myfile.close()

#csv file reading code

def  readSalesData ():          # to read data from CSV file
  with open(' sales.csv','r') as myFile :
        readerObj = csv._____(myFile)          # Line 3
        for rec in readerObj :
            print (rec[0],rec[1],rec[2])
  myFile ._____                                  # Line 4
addSalesData("Laptop Dell","5000","5500")
addSalesData (("Macbook","8000","8500")
addSalesData ("Microsoft Notebook","4000","4500")
readSalesData( )                                 #Line 5
```

a. Name the module he should import in Line 1.
b. In which mode, Abhishek Nanda 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.

PART – B

SECTION-I

20. Evaluate the following expressions: **2**

a) X = 2* 3/ 5 + 10 //3 – 2**3

b) 20 <= 12 or 30 < 12 and not 20 < 50 and 55>20

21. Daniel has to share the data among various computers of his two offices branches situated in the same city. In addition, wants to use the internet efficiently in his organization: **2**

a. Name the network (out of LAN, WAN, PAN and MAN) which is being formed in this process.
b. What are the enabling technologies of IoT system that he should use

OR

Differentiate between IPV4 and IPV6?

22. Expand the following terms: **2**

a. TCP/IP b. VoIP c. WAN d. SMTP

23. Write a program that creates a function swap_values(a,b) to swap the values of two variables and show how it differs the values of variable inside the actual and formal parameters. If you display the values before function call and then after function call, what will be the difference? **2**

OR

Explain the use of **global key word** used in a function with the help of a suitable example

24. Rewrite the following code in Python after removing all syntax error(s). **2**

Underline each correction done in the code.

```
30=x
For I in range(2,6)
    if x>30:
        print(“true”)
    else
        Print(“False”)
```

25. What possible outputs are expected to be displayed on the screen at the time of execution of the program from the following code? Also, specify the minimum and maximum values that can be assigned to the variable c. **2**

```
import random
temp=[10,20,30,40,50,60]
```

```
c=random.randint(0,4)
for I in range(0, c):
      print(temp[i],"#")
```

(i) 10#20# (ii) 10#20#30#40#50#

(iii). 10#20#30# (iv) 50#60#

26. Differentiate between *fetchone()* and *fetchall()* methods with suitable examples for each. **2**

27. Explain DDL and DML commands in SQL, Give some examples of each type of commands **2**

28. Find and write the output of the following Python code: **2**

```
s = 'school2@com'
k=len(s)
m=" "

for i in range(0,k):
      if(s[i].isupper()):
                  m=m+s[i].lower()
      elif s[i].isalpha():
            m=m+s[i].upper()
      else:
          m=m+'bb'
print(m))
```

SECTION- II

29. Write a function RShift(Arr,n) in Python, which accepts a list Arr of numbers and n is a numeric value by which all elements of the list are shifted to right. **3**

Sample Input Data of the list :

Arr= [15,25,35,45,50,33,41], n=2

Output

Arr = [33,41,15,25,35,45,50]

30. A text file "Quotes.Txt" has the following data written in it: **3**

Living a life you can be proud of
Doing your best
Spending your time with people and activities that are important to you
Standing up for things that are right even when it's hard
Becoming the best version of you

Write a user defined function to display the total number of words present in the file

The output of the function should be: Total

Number of Words in the file are: 4

OR

Write a function AlphaCount() in Python, which should read each character of a text file Quotes.TXT, should count and display the occurrence of alphabets **i** and **y** (including small and capital cases).

Example:

If the file content is as follows:

Living a life you can be proud of

I do my best and all of you are doing your best

The EUCount() function should display the output as:

i or I : 5

y or Y : 4

31. Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below based on on a table COMPANY and CUSTOMER **3**

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	Sahil Bansal	35000	3	333
105	Neha Soni	25000	7	444
106	Sonal Aggarwal	20000	5	333
107	Arjun Singh	50000	15	666

i. SELECT COUNT(*) ,CITY FROM COMPANY GROUP BY CITY;

ii. SELECT MIN(PRICE), MAX(PRICE) FROM CUSTOMER WHERE QTY>10 ;

iii. SELECT PRODUCTNAME,CITY, PRICE FROM COMPANY,CUSTOM
WHERE COMPANY.CID=CUSTOMER.CID AND
PRODUCTNAME=”MOBILE”;

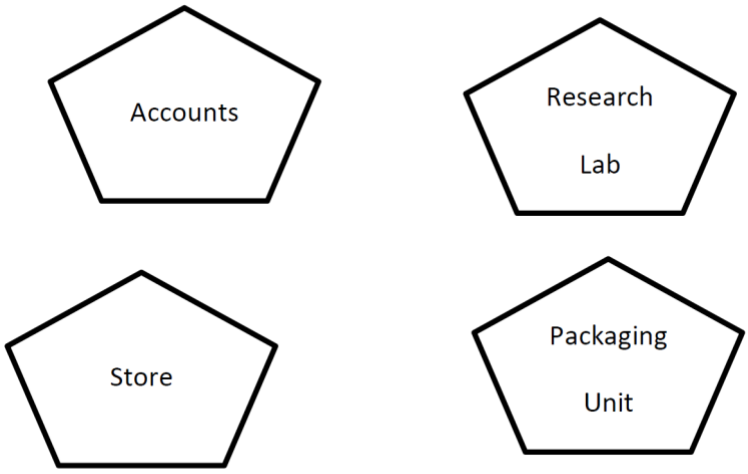
32. Write a function in Python PUSH(Arr), where Arr is a list of numbers given by user at runtime. From this list push all numbers who are even into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message if the list is empty. **3**

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. Delete the stack element if it has at least one element, otherwise display appropriate underflow error message if the list is empty

SECTION- III

33. Shah 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. Which device will you suggest to be placed/installed in each of these blocks/buildings to efficiently connect all the computers within these blocks/buildings

iv. Suggest the placement of a Repeater in the network with justification.

v. Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

34. Study the following table and write the SQL commands for the following queries (i) to (v) given at the end **5**

Table Doctors

DocID	DocName	Department	OPD_Days
101	M.Panday	ENT	TTS
102	G.P.Gupta	Paed.	MWF
201	C.K.Sharma	Ortho	SWF
301	M.N N arayN	ENT	TTS
302	P.K S harmA	Ortho	TWF

Table Patients

Pat_no	PatName	Department	DocID	FEE
1	Neeraj	ENT	101	100
2	Mohit	Ortho	201	300
3	Ragini	ENT	101	500
4	Mohit	Paed.	102	290
5	Nandini	Ortho	201	150

i. Name the fields which can act as primary key and foreign keys for the table Doctors and table Patients.

ii. Write the SQL command to update department into 'OPD' if patient name is 'Neeraj' from Patients table.

iii. Write the SQL command to display the names of doctors who are in ENT department from table Doctors

iv. Write the SQL command to Update the patient name as 'Raju' if FEE is 100 from Patients table.

v. Write the SQL command to Delete the Department 'ENT' from Doctors table.

35. **5**

A binary file "**Stock.dat**" has structure [ItemNo, Item_Name, Company_Name, Cost_Price,Selling_Price].

i. Write a user defined function *CreateStockFile()* to input data for a record and add ItemNo, Item_Name, Company, Cost_Price and Selling_Price to "**Stock.dat"** .

ii. Write a function *CountRow(Company_Name)* in Python which accepts the Company_Name as parameter and count and return number of Items by the given Company that are stored in the binary file "**Stock.dat"**

OR

A binary file "EMPLOYEE.DAT" has structure (EP_NO, EP_Name, Salary, Phone_No). Write a function *countRow()* in Python that would read contents of the fi "EMPLOYEE.DAT" and display the details of those employees whose salary is less than 5000. Also display number of employees with salary less than 5000

-END-