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Roll No. :

PRE-BOARD EXAMINATION 2020-2021

CLASS - XII

SUBJECT : COMPUTER SCIENCE

Time : 3 hours

Maximum Marks : 70

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:
 - Section – I is short answer questions, to be answered in one word or one line. Attempt any 15 questions from Q No 1 to Q No 21
 - Section – II has two case studies questions. Each case study has 5 case-based sub-parts. An examinee is to attempt any 4 out of the 5 sub parts.
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. Data items having fixed value are called 1
 - a) Identifiers
 - b) Functions

- c) Keywords
d) Literals
2. To print a line of text without ending it with a newline,
argument is used with print(). 1
3. Which among the following is not a Python Keyword? 1
- a) Assert
b) lambda
c) just
d) yield
4. Consider the following code and choose the correct output: 1
- ```
In [] : n1=60
 n2=20*3
 print (id(n1)==id(n2))
```
- a) True  
b) False  
c) Error  
d) No Output
5. print(24//4//2+5) will display output as: 1
- a) 6  
b) 3  
c) 8  
d) 0
6. What will be the output of :: 1
- ```
print("Hello! "+ " Corona may be fatal" + " for us .", sep="&&", end='\t')
```
7. What will be the output of the following code? 1
- ```
In [26] : s=str(print())+"Two"
 b=str(print("hello", end= ' '))+ "Onne"
 print (s, " ", b)
```
- a) hello Two One  
b) hello None Two None Onne  
c) hello None Two None Onne  
d) Error
8. Write a statement to remove a key 'CARROT' from the dictionary 'VEGETABLES'. 1
9. What is the output of the following statement: 1
- ```
print("xyyzxyzxzyy".count('yy',1))
```
- a) 2
b) 0
c) 1
d) Error

10. What will be the output when the following code is executed: 1
`s=[25,45,76,87,10]`
`print(s[:-1])`
11. Which among the following can be used to import all names from a module m1 into the current calling name space? 1
 a) `import m1`
 b) `from m1 import all`
 c) `from m1 import *`
12. A is a special control structure that facilitates the row-by-row processing of records in the result set. 1
 a) MySQL Connection b) Cursor
 c) Database d) Resultset
13. To specify filtering condition for groups, the clause is used in MySQL 1
14. A is a device that connects dissimilar networks. 1
15. In SQL, write a query to start working in the database "KVSAGRA". 1
16. Write an SQL statement, to display the record of all students from table STUDENTS whose last name column (Column name: LNAME) contains 5 letters ending with 'A' 1
17. module in Python provides functions for working with files and directories. 1
18. Identify the type of cyber crime for the following situations: "Continuously sending bulk requests to a website so that it is not available to any other user." 1
19. It is used by a server to identify a user when he logs in next time by storing data in the browser. What is it called?.....*cookies*..... 1
20. Stealing someone's intellectual work and representing it as your own is known as*cyber crime*..... 1
21.*__init__.py*..... file is used to initialize the python packages. 1

SECTION - II

Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark

22. A Coaching Institute STAR COACHING ACADEMY is considering to maintain a record of their students using SQL. As a database administrator, Rajesh has decided that::

Name of the database:: staracademy

Name of the table :: Engg

The attributes are as follows:

ID- character

Name- character of Variable length.

Age- numeric

City - Character

Fee- numeric

Phone- Character

ID	NAME	AGE	CITY	FEE	PHONE
P1	SAMEER	34	DELHI	45000	9811076656
P2	ARYAN	35	MUMBAI	54000	9911343989
P4	RAM	34	CHENNAI	45000	9810593578
P6	PREMLATA	36	BHOPAL	60000	9910139987
P7	SHIKHA	36	INDORE	34000	9912139456
P8	RADHA	33	DELHI	23000	8110668888

- a) Write the command to create the database staracademy. 1
- b) Identify the candidate keys in the above table. 1
- c) Name the datatype for column (Name) 1
- d) Rajesh wants to add the following data into the attributes ID, Name and Fee in the above table Engg., Write the command for him:

ID- P10, Name - Shyam and Fee- 55000 1

- e) Further, Rajesh wants to add one more column "Mode" with default value "ONLINE". Write the command for the same. 1

- 23 Arpit is writing a program to work with a binary file "Ball.dat" which contains the Name and quantity for different kinds of balls. He has written the following code and need help in the given blanks. As a programmer, help him execute the given task :

```

import ..... #Line 1
# to write data in the binary file
def addrec(n,q):
    fb=..... # Line 2
    t=(n,q)
    pickle.dump(t,fb)
    print("Record added")
def search(s):
    f=open("Ball.dat","rb")
    fl=0
    while True:
        try:
            r=..... #Line3
            if(r[0].lower()==s.lower()):
                fl=-99
                print("Quantity of ", ..... , " are:: ", ..... ) #Line 4
        except EOFError:
            break
    if fl==0:
        print("Item Not found")
    f.close()
    return
addrec('Football',34)
addrec('Baseball',21)
addrec('Basketball',13
..... #Line 5

```

- a) Name the module that should be imported in Line 1 1
- b) Fill in the blank in Line 2 to work with the binary file 'Ball.dat' so that it adds a record in the end of file 1

- c) Fill in the blank in Line 3 to read a record from the file 1
- d) Fill in the blank to display the output in the following format-
Quantity of Basketball are: 13 1
- e) Write the statement to call the function search() to search the details of Football 1

PART - B
SECTION - I

24. Which among the following are correct way to get the value of hobby
key: student={'name': 'Amit', 'class': 'IX', 'Hobby': 'Swimming'} 2
- a) m=student.get(2)
- b) m=student[2]
- c) m=student['marks']
- d) m=student.get('marks')
25. Observe the following Python code carefully and obtain the output, which will appear on the screen after execution of it. 2

```
def Findoutput():  
L="First PreBoard"  
X=""  
l1=[]  
count=1  
for i in L:  
    if i in ['a','e','i','o','u']:  
        X=X+i.swapcase()  
else:  
    if count%2!=0:  
        X=X+str(len(L[:count]))  
    else:  
        X=X+i  
    count=count+1  
print(X)  
Findoutput()
```

125

- 26 Differentiate among Positional and Keyword arguments in Python, with suitable examples. *↳ those who take a keyword as their default arguments and give over on other values.*
27. What are the possible outcomes executed from the following code? Also, specify the maximum and minimum values that can be assigned to variable COUNT. *2*

```
import random
TEXT = "EXAMAREFUN"
COUNT = random.randrange(0,3)
C=9
while TEXT[C] != 'E':
    print(TEXT[C]+TEXT[COUNT]+'*',end=" ")
    COUNT= COUNT + 1
    C = C-1
```

- (i) NX*UA*FM* (ii) UM* FA* ER*
- (iii) NA*UM*FA* (iv) EN* XU* AF*

- 28 Harmeet is trying to increment all elements of a given list L by 2 by writing the code below, underline the error and rewrite the corrected code *2*

```
L=[1,11,21,31]
L=L+2
print(L)
```

OR

Find errors, underline them and rewrite the same after removing the errors:

```
d1=dict[]
i=1
n=input("Enter the number of entries:")
while(i<=n):
    n=input("Enter name::")
    b=input("Enter age:")
    d1(a)=b
    i=i+1
```

```
l=d1.key[]
for i in l:
print(i,\t, 'd1[i]')
```

- 29 Differentiate between primary key and unique constraint in SQL with a suitable example. 2
- 30 Write a Python statement to establish connection with MySQL database EXAM with username- root and password-123. 2
- 31 What is the significance of Group BY clause in an SQL query? 2

OR

- Differentiate between single row function and aggregate functions. Name one function for each. 2
- 32 What do understand by the term e-commerce? Write any 3 advantages of it? 2
33. Expand the following: 2
- | | |
|-----------|---------|
| i) SMS | ii) POP |
| iii) IaaS | iv) SIP |

OR

- Which among the following are mobile processors? 2
- | | |
|------------------------|---------------------|
| a) Qualcomm Snapdragon | b) Apple A10 Fusion |
| c) Intel Core | d) Samsung Exynos |
| e) AMD Ryzen | f) Intel Atom |

SECTION-II

34. Write a function Disp3Digit(L) in Python, which accepts a list L of numbers and returns the sum of all the 3 digit numbers in the list. 3
- Sample Input Data of the list Arr= [12,432,550,1,605]
- Output ---- 1587
- 35 Write a function in Python that copies the lines starting with the letter "H" from file 'Poem.txt' to another file 'Hlines.txt'. 3

OR

Write a function dispwords() in Python to read lines from a text file Story.txt and display those words which are less than 4 characters.

- 36 Write the outputs of the SQL queries (i) to (iii) based on the relations Item and Customer given below; 3

ITEM

I_ID	Item name	Manufacturer	Price
PC01	Personal Computer	ABC	35000
LC05	Laptop	ABC	55000
PC03	Personal Computer	XYZ	32000
PC06	Personal Computer	COMP	37000
LC03	Laptop	PQR	57000

CUSTOMER

C_Id	Customer Name	City	I_Id
01	N Roy	Delhi	LC03
06	H Singh	Mumbai	PC03
12	R Pandey	Delhi	PC06
15	C Sharma	Delhi	LC03
16	K Agarwal	Banglore	PC01

- i. Select ItemName , Max(Price), Count(*)
From Item Group By Item Name ;
- ii. Select Customer Name, Manufacturer from Item, Customer Where
Item.Item_Id= Customer.Item_Id ;
- iii. Select Item Name, Price*100 as New Price from Item where
Manufacturer = 'ABC' ;

- 37 Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers at even location into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message. 3

OR

Write `Add Customer (Customer)` and `DeleteCustomer(Customer)` methods in Python to add a new Customer and delete a Customer from a Stack of Customer records considering them to act as push and pop operations of the stack data structure, where each customer item is of the following form: (Cust No, Cust Name, Salary). 3

SECTION III

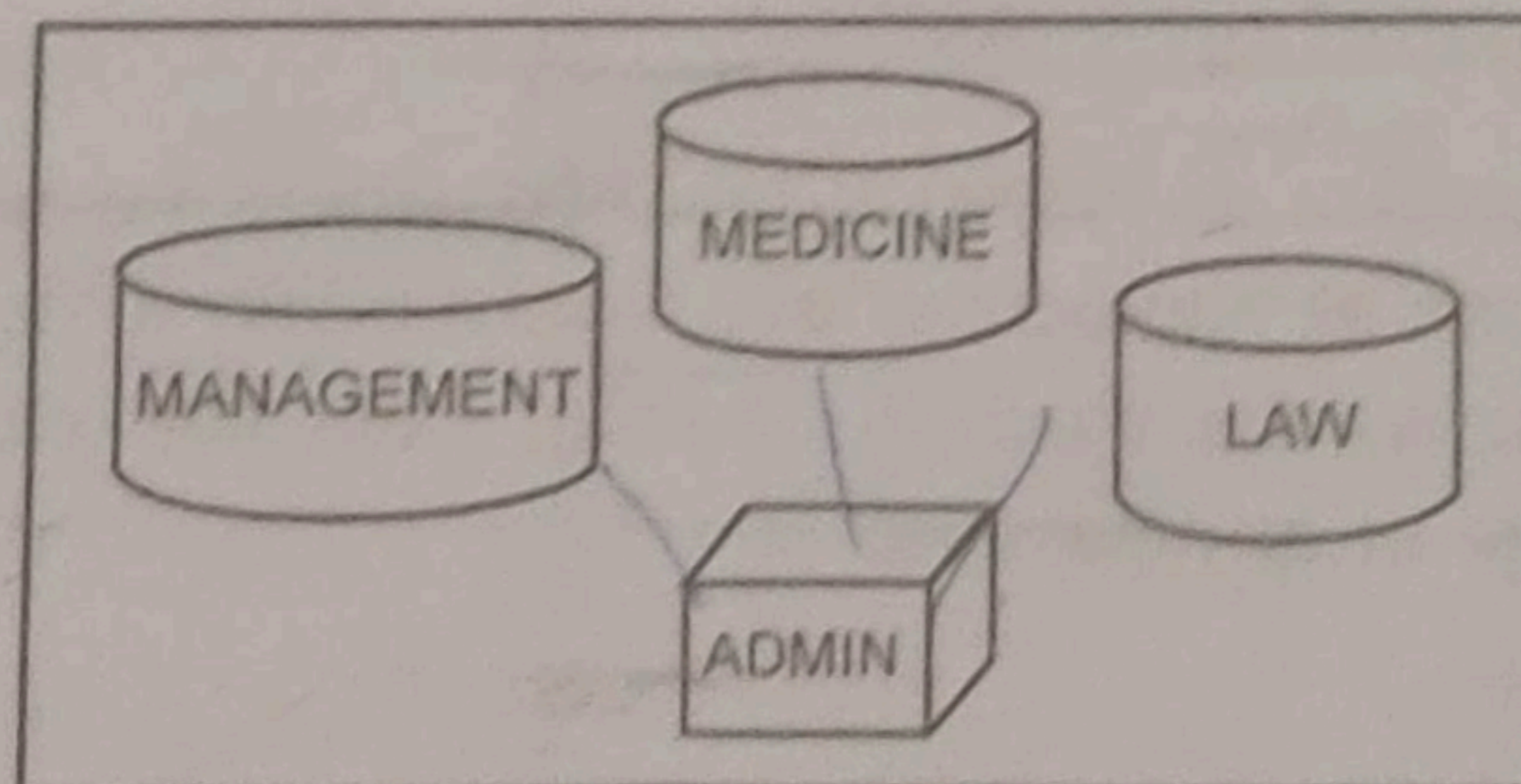
- 38 Malviya Institute of Learning is planning to set up its center in Amritsar with four specialized blocks for Medicine, Management, Law courses along with an Admission block in separate buildings. The physical distances between these blocks and the number of computers to be installed in these blocks are given below. You as a network expert have to answer the queries raised by their board of directors as given in (i) to (iv). 5

Shortest distances between various locations in meters:

Admin Block to Management Block	60
Admin Block to Medicine Block	40
Admin Block to Law Block	60
Management Block to Medicine Block	50
Management Block to Law Block	110
Law Block to Medicine Block	40

Number of Computers installed at various locations are as follows:

Admin Block	150
Management Block	70
Medicine Block	20
Law Block	50



- (i) Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
- (ii) Suggest by drawing the best cable layout for effective network connectivity of the blocks having server with all the other blocks.
- (iii) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following:
- Modem
 - Gateway
 - Switch
 - Router
- (iv) Suggest the most suitable wired medium for efficiently connecting each computer installed in every building out of the following network cables:
- Coaxial Cable
 - Single Pair
 - Ethernet Cable
 - Telephone Cable.
- (v) Mention any economic way to provide internet accessibility to all blocks.

39. Consider the relations Item and Customer given below and write SQL queries for i-v: 5

ITEM

I_ID	Item name	Manufacturer	Price
PC01	Personal Computer	ABC	35000
LC05	Laptop	ABC	55000
PC03	Personal Computer	XYZ	32000
PC06	Personal Computer	COM	37000
LC03	Laptop	PQR	57000

CUSTOMER

C_Id	Customer Name	City	I_Id
01	N Roy	Delhi	LC03
06	H Singh	Mumbai	PC03
12	R Pandey	Delhi	PC06
15	C Sharma	Delhi	LC03
16	K Agarwal	Banglore	PC01

- i) To display the details of those Customers whose City is Delhi
 - ii) To display the details of Item whose Price is in the range of 35000 to 55000 (both values included)
 - iii) To display the Customer Name, City from table Customer, Item Name and Price from table Item, with their corresponding matching I_Id.
 - iv) To display the number of customers from each city.
 - v) To increase the price of all Items by 1000 in the table Item. 5
- 40 A CSV file "Book.csv" 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.csv .
 - 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 csv file "Book.csv"

OR

Consider a CSV file "Items.csv" with record format ['Iteml D': 'Item Name': 'Qty': 'Price'] with colon as the separator

- i) Write a function *CreateF()* to create the file and insert records in it.
- ii) Write a function *Search(n)* that takes Item name as parameter and searches and displays the item in the file 5

Fn(Ex, n)