



ARMY PUBLIC SCHOOL BENG DUBI
PRE BOARD-I (2020-21)
CLASS XII SC
SUB: COMPUTER SCIENCE(083)

Time -3 hours

M. Marks- 70

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 in which one question has internal option.
6. Programming language is Python or MySQL commands as the case may be.

Q 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 all valid identifiers from the following a. false b. 12hh c. YOUR_name d. BackSpace	1
2	See the Python string declaration below myschool="aps bengdubi" Write the output of myschool[::-1]	1
3	What is the full form of CVV?	1
4	Which of the following is not a Relational operator? a. == b. != c. = d. >	1

5	<p>Suppose a Tuple is declared as follows mytup=(34,54,67,89) Which of the following declaration(s) is valid and will not give any error? a. mytup.index(67) b. mytup.index(0) c. mytup.index(89) d. mytup.index(2)</p>	1																																				
6	<p>A Dictionary is declared in Python as below mydi={1:2,3:4} Identify the keys and values</p>	1																																				
7	<p>A List is declared in Python as below mylist=[45,12,23,90,-45] Find the output of the command mylist[3:4]</p>	1																																				
8	<p>Look at the Python statement sequence and write the output of y1 and y2. Is there any difference in their output? <pre>>>> x= -34 >>> y1=abs(x) >>> import math >>> y2=math.fabs(x)</pre></p>	1																																				
9	<p>Out of the email protocols identify the ones is required for sending and the ones for receiving emails. POP3 SMTP IMAP</p>	1																																				
10	<p>Your friend has found that someone is sending email that appears to come come her email address which actually she is not sending and it's defaming her in those emails. Identify the type of Cyber Crime.</p>	1																																				
11	<p>We have the following records shown from the table</p> <pre>mysql> select * from corona;</pre> <table border="1" data-bbox="235 1312 1112 1627"> <thead> <tr> <th>rid</th> <th>province</th> <th>country</th> <th>transmission_type</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Wuhan</td> <td>China</td> <td>Local</td> </tr> <tr> <td>2</td> <td>Huanan</td> <td>China</td> <td>Local</td> </tr> <tr> <td>3</td> <td>Patong</td> <td>Thiland</td> <td>Imported</td> </tr> <tr> <td>4</td> <td>Washington DC</td> <td>USA</td> <td>Imported</td> </tr> <tr> <td>5</td> <td>Milan</td> <td>Italy</td> <td>Imported</td> </tr> <tr> <td>6</td> <td>Mulhouse</td> <td>France</td> <td>Imported</td> </tr> <tr> <td>7</td> <td>Mitterteich</td> <td>Germany</td> <td>Imported</td> </tr> <tr> <td>8</td> <td>Hurghada</td> <td>Iran</td> <td>Imported</td> </tr> </tbody> </table> <pre>8 rows in set (0.00 sec)</pre> <p>And we desired to get the following output</p>	rid	province	country	transmission_type	1	Wuhan	China	Local	2	Huanan	China	Local	3	Patong	Thiland	Imported	4	Washington DC	USA	Imported	5	Milan	Italy	Imported	6	Mulhouse	France	Imported	7	Mitterteich	Germany	Imported	8	Hurghada	Iran	Imported	
rid	province	country	transmission_type																																			
1	Wuhan	China	Local																																			
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5	Milan	Italy	Imported																																			
6	Mulhouse	France	Imported																																			
7	Mitterteich	Germany	Imported																																			
8	Hurghada	Iran	Imported																																			

	<pre> , +-----+-----+-----+-----+-----+ transmission_type count(*) +-----+-----+-----+-----+ Imported 6 Local 2 +-----+-----+-----+-----+ 2 rows in set (0.00 sec) </pre> <p>Name the SQL clause that can help us (answer in single phrase)</p>	1
12	<p>Consider the following customer tables and the records</p> <pre> mysql> use business; Database changed mysql> select * from customer; +-----+-----+-----+-----+-----+ custid name price qty cid +-----+-----+-----+-----+-----+ 101 rohan sharma 70000 20 222 102 deepak kumar 50000 15 666 103 mohan kumar 30000 5 111 104 sahil bansal 35000 NULL 333 105 neha soni 25000 7 444 106 sonal aggarwal 20000 5 333 107 arjun singh 50000 15 666 +-----+-----+-----+-----+-----+ 7 rows in set (0.18 sec) </pre> <p>How does the SQL aggregate functions as avg() or sum() responds to NULL value when applied to the column qty?</p>	1
13	<p>Consider the table customer above and write the output of the following command</p> <pre>mysql> select count(*) from customer;</pre>	1
14	<p>Name the SQL command that should be used to change the NULL value in qty.</p>	1
15	<p>State one important factor that must be satisfied for successful microwave transmission in the hilly areas from the foothills.</p>	1
16	<p>Sam incorrectly declared a dictionary in Python as follows, rewrite correctly</p> <pre>samsdict=['a',123,'b',890]</pre> <p>where 'a' and 'b' are keys and 123 and 890 are values</p>	1
17	<p>See the sequence and determine the output</p> <pre>mystr="declare APS Bengdubi the Winner" print(mystr[7:])</pre>	1
18	<p>In SQL, write the query to display the name of all databases.</p>	1
19	<p>Write the full form of IMEI</p>	1

20 While imposing Foreign key constraint Sam adds the following line at the end of the SQL command, select the correct ans from the options given
 FOREIGN KEY (p_id) REFERENCES first(p_id)
 p_id in table first must be a
 a. Primary key
 b. Foreign key

1

21 What is the most common Wifi transmission frequency of an android smartphone?
 a. 2.4 GHz / 5 GHz b. 20 GHz / 22 GHz

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 Look at the output of two SQL commands and answer the subsequent questions

Display structure of the table

```
mysql> show columns from carmaster;
```

Field	Type	Null	Key	Default	Extra
company	varchar(30)	NO	PRI		
model	varchar(30)	YES		NULL	
rateperhour	int(11)	YES		NULL	

3 rows in set (0.03 sec)

```
mysql>
```

Display records

```
mysql> select * from carmaster;
```

company	model	rateperhour
Audi	2019 Audi A8	100
BMW	2019 BMW 5 Series	62
Cadillac	2019 CT 6	67
Lamborghini	Aventador	199
Lexus	2020 LS	67
Mercedes	2019 Mercedes S Class	75
Telsa	2019 Model 3	56
Volvo	2020 XC 60	59

8 rows in set (0.00 sec)

Give SQL commands for

	<p>a. Change the rateperhour for the model 2020 LS to 76</p> <p>b. Remove the primary key constraint from the field company</p> <p>c. Find all records where rateperhour is more than 99</p> <p>d. Display all records from carmaster where company is either Audi or Telsa</p> <p>e. Delete all records from the table at once</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
23	<p>Bonny has written a code to write 3 records from a list to a csv file, guess the complete code</p> <pre> import csv fields = ['Company','Model','RatePerHour'] rows = [['Telsa','2019 Model 3','56'],['Volvo','2020 XC 60','59'],['BMW','2019 BMW 5 Series','62']] filename = "carmaster01.csv" with open(_____, 'w') as csvfile: #.....a csvwriter = csv.writer(_____) #.....b csvwriter._____(fields) #.....c csvwriter._____(rows) #.....d csvfile.close() </pre> <p>Mary wants to use pandas to read the file and she has written a code for the same, guess the missing parts</p> <pre> import pandas as pd df=pd._____("carmaster01.csv") #.....e print(df) </pre>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
	Part – B	
	Section-I	
24	<p>Evaluate the following expressions</p> <p>a) not False or False and True</p> <p>b) 56 // 3 ** 3</p>	2
25	<p>Name two transport layer protocol of TCP / IP protocol stack. Write one difference between the two</p> <p style="text-align: center;">OR</p> <p>How to tackle spamming? What is the difference between spamming and phishing?</p>	2
26	<p>Expand the following</p> <p>a. WLL b. GPRS c. GSM d. FPT</p>	2
27	Look at the example below and answer the questions	2

```
>>> def addtwo(a,b):  
    return a+b
```

```
>>> addtwo(5,6)
```

```
11
```

- What is the type of parameter used in the function definition?
- What is the name given to the parameter used in the function call?

OR

Look at the program below and explain why global keyword is used in a statement and how it influences the value of the variable a.

```
>>> a=9
```

```
>>> def y(z):
```

```
    global a    # why global is used here?
```

```
    a+=z
```

```
>>> y(89)
```

```
>>> a
```

```
98
```

If we do not declare it as global inside the function what difference it brings to the code?

28 The following Python code is suppose to count the number of upper case and lower case letters in a string, but since there are errors it's not running correctly. Rewrite and underline the errors detected by you

```
s1='aPsBeNGdubi
```

```
i=0
```

```
lower=0
```

```
upper=0
```

```
while(i<len(s1):
```

```
    if(s1[i].islower()==True):
```

```
        lower+=1
```

```
    if(s1[i].isupper()==True):
```

```
        upper+=1
```

```
    i+=1
```

```
print("lower = {}, Upper = {}".format(lower,upper))
```

2

29 Looking at the code sequence and the output at the end answer the questions

2

```
>>> mylist=[23,43,2,67,-12,10,85]
>>> import random
>>> a=random.randint(1,3)
>>> b=random.randint(2,5)
>>> for x in range(a,b+1):
    print(mylist[x],end="$")
```

2\$67\$-12\$

- a. If we get the above output what value was taken by the variables a and b in range()?
- b. Is it possible that we run the code sequence and we do not get any output? How?

30 Look at the SQL tables and complete the inner join command shown below so that it matches the output

```
mysql> use business;
Database changed
mysql> select * from orders;
+-----+-----+-----+
| order_id | supplier_id | order_date |
+-----+-----+-----+
| 500151 | 90000 | 2020/01/22 |
| 500152 | 90001 | 2020/01/23 |
| 500154 | 90003 | 2020/01/24 |
+-----+-----+-----+
```

3 rows in set (0.32 sec)

```
mysql> select * from suppliers;
+-----+-----+
| supplier_id | supplier_name |
+-----+-----+
| 90000 | IBM |
| 90001 | HP |
| 90002 | Microsoft |
| 90003 | NVIDIA |
+-----+-----+
```

4 rows in set (0.02 sec)

mysql> select suppliers._____, suppliers.supplier_name, orders.order_date
from _____ inner join _____ on suppliers._____=orders.supplier_id;

Output of inner-join command above

```
+-----+-----+-----+
| supplier_id | supplier_name | order_date |
+-----+-----+-----+
| 90000 | IBM | 2020/01/22 |
| 90001 | HP | 2020/01/23 |
| 90003 | NVIDIA | 2020/01/24 |
+-----+-----+-----+
```

3 rows in set (0.07 sec)

31	<p>Look at the output of the MySQL command below</p> <pre>mysql> show databases; +-----+ Database +-----+ information_schema business car carmanagement disease mysql online test vaccine virus virus1 +-----+ 11 rows in set (0.00 sec)</pre> <p>Now if we try the following implementing MySQL connector in Python</p> <pre>>>> import mysql.connector >>> spcdatabase=mysql.connector.connect(host="localhost", user="root", password=" ", database='carmanagement') >>> spccur=spcdatabase.cursor() >>> spccur.execute("show databases")</pre> <p>What will be the output in each case if we subsequently write</p> <ol style="list-style-type: none"> spccur.fetchone() spccur.fetchall() 	2
32	<p>What is the difference between a CREATE and SELECT command in SQL? Give an example of CREATE command.</p>	2
33	<p>How the statement spcdatabase.commit() here helps mysqlconnector?</p> <pre>spccur=spcdatabase.cursor() spccur.execute("insert into corona values(1,'Wuhan','China','Local')") spcdatabase.commit() spccur.execute("select *from corona") for i in spccur: print(i)</pre>	2
Section- II		
34	<p>Write a function in Python that accepts a string as a parameter and adds the vowels and consonants of the string it has received in two separate lists in the function. It will ignore everything else as spaces and numbers.</p>	3
35	<p>Write a function in Python that reads a text file and copies all the words in another file if the word starts with a capital letter.</p> <p style="text-align: center;">OR</p>	3

	Write a function in Python that reads from a text file and counts number of words that starts with a capital letter and displays the count.	
36	<p>Write a function to add 100 random numbers between 5 and 300 in a list and pick up only those numbers exactly divisible by 7 and add in another list and display both the lists.</p> <p style="text-align: center;">OR</p> <p>Write a function to accept values at run time and construct a tuple. The tuple grows as t=() t=(23) t=(23,45) and so on as the user wishes to continue</p>	3
37	QUESTION HAS BEEN REMOVED BY CONTRIBUTOR TO REDUCE THE FILE SIZE	3
	Section-III	
38	QUESTION HAS BEEN REMOVED BY CONTRIBUTOR TO REDUCE THE FILE SIZE	5
39	QUESTION HAS BEEN REMOVED BY CONTRIBUTOR TO REDUCE THE FILE SIZE	5
40	<p>Complete the code in Python to add 3 records in a binary file and display only the first record.</p> <pre>import pickle class item: def getdata(self): self.no=int(input("Enter Item No ")) self.nm=input("Enter Item Name ") self.qy=int(input("Enter Item Quantity ")) def showme(self): print(self.no," ",self.nm," ",self.qy)</pre>	5