



ARMY PUBLIC SCHOOL BENG DUBI
PRE BOARD-II (2020-21) [Rescheduled]
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 It 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.
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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 out invalid Python statement(s) if any (consider requisite modules imported) a. string.letters b. string.digits c. math.ceil(23.23) d. re.search('Paul\$', 'Somnath Paul')	1
2	See the Python code below and determine the output >>> vowels='aeiouAEIOU' >>> myname="Somnath PaulChoudhury" >>> for i in myname: if(i not in vowels): print(i, end="")	1
3	What is the use of NFC?	1
4	Find the odd one in the listed operators below. a. *= b. >=	1

	<p>c. **= d. //="</p>																															
5	<p>Suppose a Tuple is declared as follows mytup=(32,93,45,71,-89,111,100) Guess the minimum value for K so exception handling will print the IndexError message >>> try: for i in range(K): print(mytup[i]) except IndexError: print("It's out of range now so stop")</p>	1																														
6	<p>A Dictionary is declared in Python as below mydi={1:2,3:4,5:6} Identify the invalid Python statement from the options below a. mydi.pop(1) b. mydi.pop(5) c. mydi.update({7:8}) d. mydi.update(7:8)</p>	1																														
7	<p>A List is declared in Python as below mylist=[34,65,-77,12,0,113,31] Find the output of the command mylist[:5]</p>	1																														
8	<p>Look at the Python statement sequence and find the output >>> import math >>> abs(math.floor(-77.77))</p>	1																														
9	<p>Identify the one-way incoming mail protocol from the options. SMTP POP3 IMAP</p>	1																														
10	<p>Name the technological approach to limit illegal copying and inappropriate use of copyrighted works and proprietary software.</p>	1																														
11	<p>We have the following records shown from the table</p> <pre>mysql> select * from itemtran;</pre> <table border="1"> <thead> <tr> <th>tran_no</th> <th>item_no</th> <th>cust_name</th> <th>cust_phone</th> <th>qty_sold</th> <th>total_sales</th> </tr> </thead> <tbody> <tr> <td>900</td> <td>11</td> <td>xyc</td> <td>9087</td> <td>2</td> <td>35200</td> </tr> <tr> <td>901</td> <td>11</td> <td>abc</td> <td>9667</td> <td>1</td> <td>17600</td> </tr> <tr> <td>902</td> <td>10</td> <td>abc</td> <td>9667</td> <td>1</td> <td>165000</td> </tr> <tr> <td>903</td> <td>12</td> <td>abc</td> <td>9667</td> <td>1</td> <td>1760</td> </tr> </tbody> </table> <p>4 rows in set (0.05 sec)</p> <p>And we desired to get the following output</p>	tran_no	item_no	cust_name	cust_phone	qty_sold	total_sales	900	11	xyc	9087	2	35200	901	11	abc	9667	1	17600	902	10	abc	9667	1	165000	903	12	abc	9667	1	1760	
tran_no	item_no	cust_name	cust_phone	qty_sold	total_sales																											
900	11	xyc	9087	2	35200																											
901	11	abc	9667	1	17600																											
902	10	abc	9667	1	165000																											
903	12	abc	9667	1	1760																											

	<pre> +-----+ Name BillTotal +-----+ abc 184360 xyc 35200 +-----+ 2 rows in set (0.06 sec) </pre> <p>Write the mysql command to get this output.</p>	1
12	<p>Consider the following itemmast table structure as shown</p> <pre> mysql> describe itemmast; +-----+-----+-----+-----+-----+-----+ Field Type Null Key Default Extra +-----+-----+-----+-----+-----+-----+ item_no int(11) NO PRI NULL item_nm varchar(30) YES NULL item_manu varchar(30) NO NULL item_price int(11) NO NULL item_qty int(11) NO NULL +-----+-----+-----+-----+-----+-----+ 5 rows in set (0.05 sec) </pre> <p>Write the SQL DDL command to drop the primary key</p>	1
13	<p>Consider the table itemtran above in Q 11 and write the output of the following command</p> <pre> mysql> select count(*) from itemtran where total_sales>=130000; </pre>	1
14	<p>Name the operator used to test for non-empty values in mysql</p>	1
15	<p>Is microwave ionizing radiation? Write Yes/No</p>	1
16	<p>Lucy incorrectly declared a Tuple in Python as follows, rewrite correctly</p> <pre> Ltuple=['a',123:'b',890] </pre>	1
17	<p>See the sequence and determine the output</p> <pre> >>> import string >>> str="Somnath PaulChoudhury has a short name" >>> for i in str: if(i in string.ascii_uppercase): print(i,end="\$") </pre>	1
18	<p>In SQL, write the query to display the name of all databases.</p>	1
19	<p>What is IEMI number? Write the key sequence to display the IMEI number.</p>	1
20	<p>Identify the foreign key from the tables itemmast and itemtran shown above in Q 11 and 12.</p>	1
21	<p>What is the use of infrared waves in communication?</p>	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

- Change the rateperhour by 10% for all [permanent]
- Add the primary key constraint in the field company later using mysql command [i.e. not during the table was created but the constraint has been added later]
- Find all records where the model name starts with 2020
- Display all records from carmaster in descending order of rateperhour
- Delete the record of Cadillac and Lamborghini

1
1
1
1
1

23

Miho wants to add one line to a txt file and wants to close and open the same in reading mode and read the file, help her in completing the following code

	<pre> spcfile=open("spcnotes.txt","_____") # opens the file for adding a line spcfile._____("This is the second line in the file") # adds the line spcfile.close() # close the file spcfile=_____("spcnotes.txt","_____") # opens the file in reading mode print(spcfile._____) # display the content spcfile.close() </pre>	<p>1 1 1+1 1</p>
	Part – B	
	Section-I	
24	<p>Evaluate the following expressions</p> <p>a) not not True b) 98 ** 1 + 5</p>	2
25	<p>Name any two network layer protocols and two application layer protocols of TCP / IP protocol stack.</p> <p style="text-align: center;">OR</p> <p>What is the importance of the IMEI number in a cell phone?</p>	2
26	<p>Expand the following</p> <p>a. UDP b. CSMA/CD c. CDMA d. PHP</p>	2
27	<p>Look at the example below and answer the questions</p> <pre> >>> file=open("spc000notes.txt","r") >>> try: hh=file.read() x=hh.split() for i in x: print(i,'#',end='') except EOFError: pass </pre> <p style="color: blue;">This #is #the #First #line #This #is #the #Second #line #This #is #the #Third #line #</p> <p>a. What data type is stored in hh when we execute the line hh=file.read()?</p> <p>b. Explain the purpose of the statement x=hh.split() in this context.</p> <p style="text-align: center;">OR</p>	2

Look at the example below and answer the questions

```
import mysql.connector
spcdatabase=mysql.connector.connect(
    host="localhost",
    user="root",
    password=" ",
    database='carmanagement'
)
spccur=spcdatabase.cursor()
spccur.execute("select * from rental where company like 'C%")
for i in spccur:
    print(i)
```

- a. What is the name of the database and table in the query?
- b. Name a field of the table.

28 The following Python code is supposed to print the largest word in a sentence but there are two errors , rewrite the code after correction

```
str=input("Enter a sentence ")
word=split()
print(word)
maxlen=0
largest=" "
for i in word:
    l=len(i)
    if(l>maxlen):
        largest=
print(largest)
```

29 Read a text file line by line and display each word separated by a @.

30 Look at the SQL tables and give a right join command and show 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 (0.09 sec)
```

	<pre>mysql> select * from suppliers; +-----+-----+ supplier_id supplier_name +-----+-----+ 90000 IBM 90001 HP 90002 Microsoft 90003 NVIDIA +-----+-----+ 4 rows in set (0.08 sec)</pre>	
31	<p>Look at the example below and answer the questions</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>Explain the statements</p> <p>a. spccur=spcdatabase.cursor()</p> <p>b. In the spcdatabase declaration there is a redundant parameter, identify.</p>	2
32	<p>What is the difference between an ALTER and UPDATE command in SQL? Give an example of the UPDATE command.</p>	2
33	<p>Code to drop column authname from table libbooks and subsequently display the altered table in this settings</p> <pre>import mysql.connector spcdatabase=mysql.connector.connect(host="localhost", user="root", password=" ", database='libmast')</pre>	2
Section- II		
34	<p>Create a binary file with itemno and itemname. Search for a given itemno and display the itemname, if not found display appropriate message</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 vowel letter.</p> <p style="text-align: center;">OR</p>	3

	Write a function in Python that reads from a text file and counts the number of words that starts with the vowels and displays the count.																	
36	Write a function to add 200 random numbers between 5 and 600 in a list and pick up only those numbers exactly divisible by 11 and add in another list and dump the list in a .dat file using pickle.dump OR Write a function to accept values at run time and construct a dictionary of item no and item names. Subsequently add the item no which are keys in a list and dump the list in a .dat file.	3																
37	Consider the following fields = ['Name', 'Class', 'Year', 'Percentage'] rows = [['Nikhil', 'XII', '2021', '99'], ['Lucy', 'XII', '2021', '98'], ['Sanjay', 'XII', '2021', '99.9']] Code in Python to write the fields and rows in cs2021.csv using writer(), writerow() and writerows()	3																
	Section-III																	
38	Write a Python program to implement push() and pop() a stack using a list data-structure. OR Write a Python program to implement a add() and delete() from the queue using a list data-structure.	5																
39	Wills university is setting up its academic blocks at Prayag Nagar and planning to set up a network. The university has three academic blocks and one human resource Centre as shown in diagram below: <div style="text-align: center;"> </div> Centre to center distance between various blocks/center is as follows: <table style="margin-left: 40px;"> <tr> <td>Law Block to Business Block</td> <td>50 m</td> </tr> <tr> <td>Law Block to Technology Block</td> <td>79 m</td> </tr> <tr> <td>Law Block to HR Centre</td> <td>111 m</td> </tr> <tr> <td>Business Block to technology Block</td> <td>37 m</td> </tr> <tr> <td>Business Block to HR Centre</td> <td>45 m</td> </tr> <tr> <td>Technology Block to HR Centre</td> <td>25 m</td> </tr> </table> Number of computers in each of the blocks/centre is follows: <table style="margin-left: 40px;"> <tr> <td>Law Block</td> <td>25</td> </tr> <tr> <td>Technology Block</td> <td>50</td> </tr> </table>	Law Block to Business Block	50 m	Law Block to Technology Block	79 m	Law Block to HR Centre	111 m	Business Block to technology Block	37 m	Business Block to HR Centre	45 m	Technology Block to HR Centre	25 m	Law Block	25	Technology Block	50	5
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	<p>HR Centre 125 Business Block 35</p> <p>(i) Suggest the most suitable place (i.e. block/centre) to install the server of this university with a suitable reason. (ii) Suggest an ideal layout for connecting this block/centre for a wired connectivity. (iii) Which device you will suggest to be placed / installed in each of these blocks/centre to efficiently connect all the computers within this blocks/centre? (iv) The university is planning to connect its admission office in the closest big city, which is more than 450 km from university, which type of network out of LAN, MAN or WAN will be formed? Justify.</p>	
40	Read a text file and display the number of vowels/ consonants/ uppercase/ lowercase/ spaces in the file.	5