

Common Pre-Board Examination Chandigarh Region 2020-21

Class: XII

Sub: COMPUTER SCIENCE

Max. Marks: 70

Time: 3 HRS

Instructions to the Examinee:

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 subparts. 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. All programming questions are to be answered using Python Language only.

| 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 | Which of the following is valid arithmetic operator in Python: (i) // (ii)? (iii) < (iv) and | 1 |
| 2 | Name the Python Library modules which need to be imported to invoke the following functions: (i) <code>sin()</code> (ii) <code>randint()</code> | 1 |
| 3 | Which statement is used to retrieve the current position within the file? a) <code>fp.seek()</code> b) <code>fp.tell()</code> c) <code>fp.loc</code> d) <code>fp.pos</code> | 1 |
| 4 | Which is the correct form of declaration of dictionary? (i) <code>Day={1:'monday',2:'tuesday',3:'wednesday'}</code> (ii) <code>Day=(1,'monday',2,'tuesday',3,'wednesday')</code> (iii) <code>Day=[1:'monday',2:'tuesday',3:'wednesday']</code> | 1 |

| | | |
|----|---|---|
| | (iv) Day={1'monday',2'tuesday',3'wednesday'} | |
| 5 | <p>Call the given function using KEYWORD ARGUMENT with values 100 and 200</p> <pre>def Swap(num1,num2): num1,num2=num2,num1 print(num1,num2)</pre> | 1 |
| 6 | Function can alter only Mutable data types? (True/False) | 1 |
| 7 | How can you access a global variable inside the function, if function has a variable with same name? | 1 |
| 8 | <p>Stack is a data structure that follows_____ order</p> <p>a) FIFO b) LIFO c)FILO d) LILO</p> | 1 |
| 9 | <p>If the following code is executed, what will be the output of the following code?</p> <pre>name="Computer Science with Python" print(name[2:10])</pre> | 1 |
| 10 | <p>Write down the status of Stack after each operation:</p> <p>Stack = [10,20,30,40] where TOP item is 40</p> <p>i) Pop an item from Stack</p> <p>ii) Push 60</p> | 1 |
| 11 | ----- describe the maximum data transfer rate of a network or Internet connection. | 1 |
| 12 | Expand : a) SMTP b) GSM | 1 |
| 13 | Maresh wants to transfer data within a city at very high speed. Write the wired transmission medium and type of network. | 1 |
| 14 | <p>What is a Firewall in Computer Network?</p> <p>A. The physical boundary of Network</p> <p>B. An operating System of Computer Network</p> <p>C. A system designed to prevent unauthorized access</p> <p>D. A web browsing Software</p> | 1 |
| 15 | <p>A device used to connect dissimilar networks is called</p> <p>a) hub b) switch c) bridge d)gateway</p> | 1 |
| 16 | <p>Which command is used to see the structure of the table/relation.</p> <p>a) view b) describe c) show d) select</p> | 1 |
| 17 | A virtual table is called a | 1 |
| 18 | Which clause is used to remove the duplicating rows of the table? | 1 |

| | i) or ii) distinct iii) any iv)unique | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|----------------------------|------------|--|--|-----------|-------------|--------------------|------------|-----|--------|-------|-------|-----|------|---------|-------|-----|---------|-------|-------|-----|-------|---------|-------|-----|-------|---------|-------|-----|------|-------|-------|----------------------------|
| 19 | Which clause is used in query to place the condition on groups in MySQL? i) where ii) having iii) group by iv) none of the above | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Which command is used for counting the number of rows in a database? i) row ii) count iii) rowcount iv) row_count | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | A Resultset is an object that is returned when a cursor object is used to query a table. True/False | 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 | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Relation : Employee</th> </tr> <tr> <th style="width: 15%;">id</th> <th style="width: 25%;">Name</th> <th style="width: 25%;">Designation</th> <th style="width: 35%;">Sal</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Naresh</td> <td>Clerk</td> <td>32000</td> </tr> <tr> <td>102</td> <td>Ajay</td> <td>Manager</td> <td>42500</td> </tr> <tr> <td>103</td> <td>Manisha</td> <td>Clerk</td> <td>31500</td> </tr> <tr> <td>104</td> <td>Komal</td> <td>Advisor</td> <td>32150</td> </tr> <tr> <td>105</td> <td>Varun</td> <td>Manager</td> <td>42000</td> </tr> <tr> <td>106</td> <td>NULL</td> <td>Clerk</td> <td>32500</td> </tr> </tbody> </table> <p>i. Identify the primary key in the table.</p> <p>Write query for the following</p> <p>ii. Find average salary in the table.</p> <p>iii. Display number of records for each individual designation.</p> | Relation : Employee | | | | id | Name | Designation | Sal | 101 | Naresh | Clerk | 32000 | 102 | Ajay | Manager | 42500 | 103 | Manisha | Clerk | 31500 | 104 | Komal | Advisor | 32150 | 105 | Varun | Manager | 42000 | 106 | NULL | Clerk | 32500 | <p>1</p> <p>1</p> <p>1</p> |
| Relation : Employee | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| id | Name | Designation | Sal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101 | Naresh | Clerk | 32000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | Ajay | Manager | 42500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 103 | Manisha | Clerk | 31500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | Komal | Advisor | 32150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 105 | Varun | Manager | 42000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 106 | NULL | Clerk | 32500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|----|---|--|
| | iv. Display number of records along with sum of salaries for each individual designation where number of records are more than 1. | 1 |
| | v. What is the degree and cardinality of the relation Employee? | 1 |
| 23 | <p>Anuj Kumar of class 12 is writing a program to create a CSV file “user.csv” which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.</p> <pre> import _____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file f=open(' user.csv','_____') # Line 2 newFileWriter = csv.writer(f) newFileWriter.writerow([UserName,PassWord]) f.close() #csv file reading code def readCsvFile(): # 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 addCsvFile(“Arjun”,”123@456”) addCsvFile(“Arunima”,”aru@nima”) addCsvFile(“Frieda”,”myname@FRD”) readCsvFile() #Line 5 </pre> <p>(a) Name the module he should import in Line 1.</p> <p>(b) In which mode, Anuj should open the file to add data into the file</p> <p>(c) Fill in the blank in Line 3 to read the data from a csv file.</p> <p>(d) Fill in the blank in Line 4 to close the file.</p> <p>(e) Write the output he will obtain while executing Line 5.</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> |

| Part - B | | |
|--------------------|--|---|
| Section - I | | |
| 24 | Evaluate the following expressions: (i) not(20>6) or (19>7)and(20==20) (ii) 17%20 | 2 |
| 25 | What is Spam? How it affects the security of computer system? Or Differentiate between Bus Topology and Star Topology of Networks | 2 |
| 26 | What is default arguments in functions? Give Example. Or Differentiate between actual and formal arguments ? Explain with example. | 2 |
| 27 | Write the expanded names for the following abbreviated terms used in Networking and Communications: (i) CDMA (ii) HTTP (iii) XML (iv) URL | 2 |
| 28 | Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. 30=To for K in range(0,To) IF k%4==0: print (K*4) Else: print (K+3) | 2 |
| 29 | Consider the following code: import math import random print(str(int(math.pow(random.randint(2,4),2))),end= ' ') print(str(int(math.pow(random.randint(2,4),2))),end= ' ') print(str(int(math.pow(random.randint(2,4),2)))) What could be the possible outputs out of the given four choices? i) 2 3 4 ii) 9 4 4 iii)16 16 16 iv)2 4 9 | 2 |
| 30 | What do you understand by the term type conversion? Explain with suitable example | 2 |

| | | |
|---------------------|---|---|
| 31 | What is a cursor and how to create it in Python SQL connectivity? | 2 |
| 32 | What is Degree and Cardinality in relational table? | 2 |
| 33 | <p>What will be the output of following code?</p> <pre> def display(s): l = len(s) m="" for i in range(0,l): if s[i].isupper(): m=m+s[i].lower() elif s[i].isalpha(): m=m+s[i].upper() elif s[i].isdigit(): m=m+"\$" else: m=m+"*" print(m) display("EXAM20@cbse.com") </pre> | 2 |
| SECTION - II | | |
| 34 | <p>Write a Python function to sum all the numbers in a list.</p> <p>Sample List : [8, 2, 3, 0, 7]</p> <p>Expected Output : 20</p> | 3 |
| 35 | <p>Write a function in python to read lines from file "POEM.txt" and display all those words, which has two characters in it.</p> <p>For e.g. if the content of file is</p> <p>O Corona O Corona</p> <p>Jaldi se tum Go na</p> <p>Social Distancing ka palan karona</p> <p>sabse 1 meter ki duri rakhona</p> <p>Lockdown me ghar me ho to online padhai karona</p> <p>O Corona O Corona Jaldi se tum Go na</p> <p>Output should be : se Go na ka ki me me ho to se Go na</p> | 3 |

| | <p style="text-align: center;">Or</p> <p>Write a function COUNT() in Python to read contents from file “REPEATED.TXT”, to count and display the occurrence of the word “Catholic” or “mother”.</p> <p>For example: If the content of the file is</p> <p>“Nory was a Catholic because her mother was a Catholic, and Nory’s mother was a Catholic because her father was a Catholic, and her father was a Catholic because his mother was a Catholic , or had been</p> <p>The function should display: Count of Catholic, mother is 9</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--|--------|------------|-----|--|--|-----|-------|------|-----------|-----|------|-------|-------|------------|-----|------|------|-------|------------|-----|------|-----|-------|------------|-----|------|------|------|------------|-----|------|-----|-------|------------|-----|------|---------|-------|------------|-----|---|
| 36 | <p>Write the outputs of the SQL queries (i) to (iii) based on the relation COURSE</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5" style="text-align: center;">COURSE</th> </tr> <tr> <th>CID</th> <th>CNAME</th> <th>FEES</th> <th>STARTDATE</th> <th>TID</th> </tr> </thead> <tbody> <tr> <td>C201</td> <td>AGDCA</td> <td>12000</td> <td>2018-07-02</td> <td>101</td> </tr> <tr> <td>C202</td> <td>ADCA</td> <td>15000</td> <td>2018-07-15</td> <td>103</td> </tr> <tr> <td>C203</td> <td>DCA</td> <td>10000</td> <td>2018-10-01</td> <td>102</td> </tr> <tr> <td>C204</td> <td>DDTP</td> <td>9000</td> <td>2018-09-15</td> <td>104</td> </tr> <tr> <td>C205</td> <td>DHN</td> <td>20000</td> <td>2018-08-01</td> <td>101</td> </tr> <tr> <td>C206</td> <td>O LEVEL</td> <td>18000</td> <td>2018-07-25</td> <td>105</td> </tr> </tbody> </table> <p>(i) SELECT DISTINCT TID FROM COURSE; (ii) SELECT TID, COUNT(*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1; (iii) SELECT COUNT(*), SUM(FEES) FROM COURSE WHERE STARTDATE< ‘2018-09-15’;</p> | COURSE | | | | | CID | CNAME | FEES | STARTDATE | TID | C201 | AGDCA | 12000 | 2018-07-02 | 101 | C202 | ADCA | 15000 | 2018-07-15 | 103 | C203 | DCA | 10000 | 2018-10-01 | 102 | C204 | DDTP | 9000 | 2018-09-15 | 104 | C205 | DHN | 20000 | 2018-08-01 | 101 | C206 | O LEVEL | 18000 | 2018-07-25 | 105 | 3 |
| COURSE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CID | CNAME | FEES | STARTDATE | TID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C201 | AGDCA | 12000 | 2018-07-02 | 101 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C202 | ADCA | 15000 | 2018-07-15 | 103 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C203 | DCA | 10000 | 2018-10-01 | 102 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C204 | DDTP | 9000 | 2018-09-15 | 104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C205 | DHN | 20000 | 2018-08-01 | 101 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C206 | O LEVEL | 18000 | 2018-07-25 | 105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | <p>Write A Function Python, Make Push(Package) and Make Pop (Package) to add a new Package and delete a Package form a List Package Description, considering them to act as push and pop operations of the Stack data structure.</p> | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Or

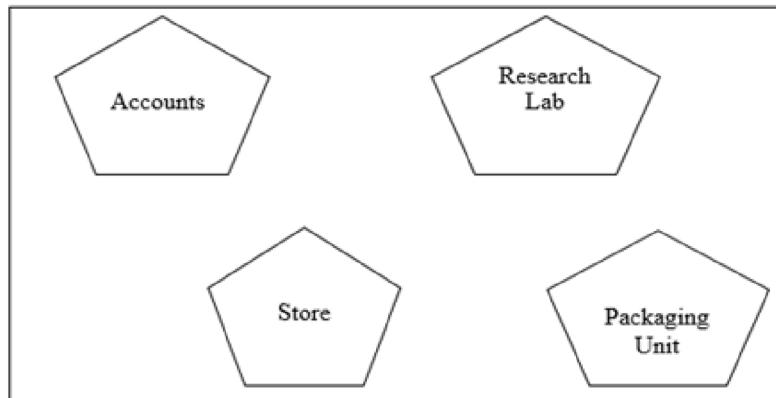
Write InsQueue(Passenger) and DelQueue(Passenger) methods/function in Python to add a new Passenger and delete a Passenger from a list 'names' , considering them to act as insert and delete operations of the Queue data structure.

SECTION - III

38

Rehaana Medicos Center has set up its new center in Dubai. It has four buildings as shown in the diagram given below:

5



Distances between various buildings are as follows:

| | |
|--------------------------------|-------|
| Accounts to Research Lab | 55 m |
| Accounts to Store | 150 m |
| Store to Packaging Unit | 160 m |
| Packaging Unit to Research Lab | 60 m |
| Accounts to Packaging Unit | 125 m |
| Store to Research Lab | 180 m |

No 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) Suggest the placement of the Repeater device with justification.
- iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.
- (v) Suggest the placement of the Hub/ Switch with justification.

39

Write SQL commands for the following queries (i) to (v) on the basis of relation Mobile Master and Mobile Stock.

5

| <u>MobileMaster</u> | | | | |
|---------------------|-----------|----------|---------|------------|
| M_Id | M_Company | M_Name | M_Price | M_Mf_Date |
| MB001 | Samsung | Galaxy | 4500 | 2013-02-12 |
| MB003 | Nokia | N1100 | 2250 | 2011-04-15 |
| MB004 | Micromax | Unite3 | 4500 | 2016-10-17 |
| MB005 | Sony | XperiaM | 7500 | 2017-11-20 |
| MB006 | Oppo | SelfieEx | 8500 | 2010-08-21 |

| <u>MobileStock</u> | | | |
|--------------------|-------|-------|----------------------|
| S_Id | M_Id | M_Qty | M_Supplier |
| S001 | MB004 | 450 | New Vision |
| S002 | MB003 | 250 | Praveen Gallery |
| S003 | MB001 | 300 | Classic Mobile Store |
| S004 | MB006 | 150 | A-one Mobiles |
| S005 | MB003 | 150 | The Mobile |
| S006 | MB006 | 50 | Mobile Centre |

(i) Display the Mobile Company, Name and Price in descending order of their manufacturing date.

(ii) List the details of mobile whose name starts with “S” or ends with “a”.

(iii) Display the Mobile supplier & quantity of all mobiles except “MB003”.

(iv) List showing the name of mobile company having price between 3000 & 5000.

(v) Display M_Id and sum of Mobile quantity in each M_Id.

| | | |
|----|---|---|
| 40 | <p>1. Consider an employee data, Empcode, empname and salary. Write python function to create binary file emp.dat and store their records.</p> <p>2. write function to read and display all the records</p> <p style="text-align: center;">Or</p> <p>Consider a binary file emp.dat having records in the form of dictionary. E.g {eno:1, name:”Rahul”, sal: 5000}</p> <p>write a python function to display the records of above file for those employees who get salary between 25000 and 30000</p> | 5 |
|----|---|---|