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| **B** | | | |
| **PB/CS/1220/A 09/12/20** | | | |
| **PRE-BOARD EXAMINATION (2020-21)** | | | |
| **Subject: Computer Science (PYTHON)**  **Grade: XII** | | Max. Marks: 70Time: 3 Hrs | |
| ***General Instructions:***   * This question paper contains two parts A and B. Each part is compulsory. * Both Part A and Part B have choices. * 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. * Part - B is Descriptive Paper. 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. * All programming questions are to be answered using Python Language only | | | |
| **Qno** | **PART A** | | Mark |
|  | **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:-  a) false b) 9\_Rno c) Class#12 d) School\_dps | | 1 |
| **2.** | Given the lists L=[2.4,”Python”, ‘S’,”Java”,7,32,4,[6,7,8],{2,34},3,’q’] , write the output of print(L[1:len(L)-2:2]) | | 1 |
| **3.** | A CSV file is also known as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.   1. 3-D file 2. String file 3. Flat file 4. Random file | | 1 |
| **4.** | Identify the valid arithmetic operators in Python from the following.   1. == b) % c) <= d) or e) // f) not g) != | | 1 |
| **5.** | Suppose a tuple T is declared as T = ([1,2,3],(6,7),’A’,4.5,8), which of the following is incorrect?  a) print(T[1])  b) print(T[2:8])  c) print(T[5])  d) print(1:-2:-1]) | | 1 |
| **6.** | Write a statement in Python to declare a dictionary D of length 4, whose keys are the first letter of each month (January - April) and values are the names of the respective months. | | 1 |
| **7.** | A tuple is declared as T=("node","A","12","IT","Robotics"). What will be the value of print(max(T))? | | 1 |
| **8.** | Name the built-in mathematical function / method that is used to return the square root of a number. | | 1 |
| **9.** | Name the protocol that is used to internet chat. | | 1 |
| **10.** | The practice of taking someone else's work or ideas and passing them off as one's own is known as \_\_\_\_\_\_\_\_\_\_\_\_\_. | | 1 |
| **11.** | In SQL, which clause is used to display the unique values in a particular attribute. | | 1 |
| **12.** | The \_\_\_\_\_\_\_\_\_\_\_\_command can be used to makes changes in the rows of a table in SQL. | | 1 |
| **13.** | The avg() function in MySql is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  a. Math function  b. Text function  c. Date Function  d. Aggregate Function | | 1 |
| **14.** | Which of the following is a DML command?  a) DELETE b) ALTER c) DROP d) UPDATE | | 1 |
| **15.** | Name the most secured wired transmission media which has the highest bandwidth? | | 1 |
| **16.** | Identify the valid declaration of L:  L = {1:[1,2,3],’A’:23,(2,3):56}  a. dictionary b. string c. tuple d. list | | 1 |
| **17.** | If the following code is executed, what will be the output of the following code?  str=”Python Programming"  x=str[3:15]  print(x, len(x)) | | 1 |
| **18.** | In SQL, write a query to display the maximum value stored in an attribute SMark of table STUD. | | 1 |
| **19.** | Write the expanded form of SMTP | | 1 |
| **20.** | An attribute can be a primary key if it has the following properties:-  a) UNIQUE b) NULL c) NOT NULL d) BOTH A & B e) BOTH A & C | | 1 |
| **21.** | To prevent unauthorized access to and / or from the network, a system known as \_\_\_\_\_\_\_\_\_\_\_\_, can be implemented by hardware and / or software. | | 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.** | Consider the table Student given below:     1. Identify the attribute best suited to be the primary key of the table Student. 2. What is the degree and cardinality of table Student. 3. Write an SQL statement to increase the Marks of all students in table Student by 5. 4. Write an SQL statement to remove the details of Student having RollNo 3 . 5. Write a statement to display the structure of the table Student. | | 4 |
| **23** | Sohan Singh of class 12 is writing a program to create a CSV file “Country.csv” which will contain Country name and Capital name. He has written the following code. As a programmer, help him to successfully execute the given task.  import \_\_\_\_\_\_\_\_\_\_\_\_\_ # Line 1  def createF(CouName,CapName): # to write / add data into the CSV file  f=open(' Country.csv','\_\_\_\_\_\_\_\_') # Line 2  nFW = csv.writer(f)  nFW.writerow([CouName,CapName])  \_\_\_\_\_\_\_\_\_\_\_\_\_ # Line 3  def readF(): # to read data from CSV file  with open(' Country.csv','r') as nFile:  nFR = csv.\_\_\_\_\_\_\_\_\_(nFile) # Line 4  for row in nFR:  print (row[0],row[1])  createF(“India”,”New Delhi”)  createF(“US”,”Washington DC”)  createF(“France”,”Paris”)  readF() #Line 5   1. Name the module Sohan Singh should import in Line 1 for this program to execute. 2. In which mode should Sohan open the csv file “Country.csv” to add more data (Line 2). 3. Write Line 3 to close the CSV file. 4. Complete Line 4 to read data from the csv file. 5. What will be the output of the program after executing Line 5. | | 4 |
|  | **PART B** | |  |
|  | **SECTION - I** | |  |
| **24.** | Evaluate the following expressions:   1. “abc”==“Abc” and not(2==3 or 3==4) 2. False and 1==1 or not True or 1==1 and False or 0==0 | | 2 |
| **25.** | How is a Trojan Horse different from a Worm in context of networking and data communication threats.  OR  Differentiate between IP Address and MAC Address. | | 2 |
| **26.** | Expand the following terms:  a. ARPANET  b. VOIP  c. NIC  d. PAN | | 2 |
| **27.** | What are docstrings? What is it used in Python? State examples.  OR  How can you modify a global variable’s value inside a function? Explain with the help of suitable examples. | | 2 |
| **28.** | Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.  X=30,40  for i in range[0,X]:  if X%4==0  print (X\*4)  elseif X%5==0:  print (X+3)  else:  print(X+10) | | 2 |
| **29.** | What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables L and U.  import random  lst=[("Red","Green"),("Blue","Yellow"),("White","Black"),("Purple","Indigo")]  L=random.randint(1,2)  U=random.randint(2,3)  for K in range(L,U+1):  print(lst[K],end="@")  Options:-   1. ('White', 'Black')@('Purple', 'Indigo')@ 2. ("Red","Green")@("Blue","Yellow")@ 3. ('White', 'Black')@ 4. ('Blue', 'Yellow')@('White', 'Black')@ | | 2 |
| **30.** | Differentiate between Primary key and Candidate Key in an SQL table? Give a suitable example. | | 2 |
| **31.** | How does fetchone() method differ from fetchall() method. Explain using suitable examples. | | 2 |
| **32.** | a) Expand the following :-  i) DBMS ii) SQL  b) State any two DML commands in SQL. | | 2 |
| **33.** | Find and write the output of the following Python code:  def Findoutput (L):  x = ''  count = 1  for i in L:  if i in ['a', 'e',' i', 'o', 'u']:  x = x + i.upper()  else:  if (count % 2 !=0):  x = x + str (len (L[:count]))  count=count+1  else:  x = x + i  count = count+ 1  print(x)  Findoutput("CBsEExaM") | | 2 |
|  | **SECTION - II** | |  |
| **34.** | Write a function arrange() to find accumulative sum of a list. Pass the list as parameter. The output has to be displayed in the format shown below:  For example if the list is [11,22,33,44,55,66]  The output should be displayed as  \*11  \*33  \*55  \*77  \*99  \*121 | | 3 |
| **35.** | Write a function that reads a file “Story.txt”. All lower case letters of “Story.txt” to be copied to file “Lower.txt” , and all upper case letters of “Story.txt” to be copied to file “Upper.txt . All other characters of “Story.txt” to be copied to file “Other.txt”.  OR  Write a function in python to read the text from a file “Story.txt” and display every word which are not starting with alphabet ‘A’ or ‘E’. Also count the number of words not starting with ‘A’ or ‘E’ | | 3 |
| **36.** | Observe the SQL table and write the output for the SQL statements given below:-     1. SELECT CATEGORY, SUM(SALARY) FROM HOTEL GROUP BY CATEGORY; 2. SELECT MAX(SALARY), MIN(SALARY) FROM HOTEL; 3. SELECT EMPID , SALARY FROM HOTEL ORDER BY SALARY; | | 3 |
| **37.** | Write a function PUSH(A), where A is a list of single characters. From this list push all lower-case characters into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.  OR  Write a function POP(A), where A is a stack implemented by a list of single characters. The function returns the value deleted from the stack. | | 3 |
|  | **SECTION - III** | |  |
| **38.** | A famous pharmaceutical company Medpharma has 4 wings of buildings as shown in the diagram    Center to center distances between various Buildings:  W3 to W1 - 50m  W1 to W2 - 60m  W2 to W4 - 25m  W4 to W3 - 170m  W3 to W2 - 125m  W1 to W4 - 90m  Number of computers in each of the wings:  W1 - 150 W2 - 15 W3 - 15 W4 - 25  Computers in each wing are networked but wings are not networked The company has now decided to connect the wings also.   1. Suggest a most suitable cable layout for the above connections. 2. Suggest the most appropriate topology of the connection between the wings. 3. The company wants internet accessibility in all the wings. Suggest a suitable technology 4. Suggest the placement of the following devices with justification if the company wants minimized network traffic a) Repeater b) Hub / switch. 5. The company is planning to link its head office situated in New Delhi with the offices in hilly areas. Suggest a way to connect it economically. | | 5 |
| **39.** | Write SQL commands for the following queries (i) to (v) based on the relations Items and Traders.     1. To display details of all items in ascending order of IName. 2. To display number of items traded by each trader. 3. To display all information of items marketed by Company SANTORA. 4. To display the IName , Code and Company name of all Items whose price is within the range 5000 and 10000. 5. To display IName , Company , TName and City of items whose price is greatet than 5000. | | 5 |
| **40.** | A binary file “Item.dat” has structure [ItemNo, ItemName, Qty, Priceperunit].   1. Write a user defined function CreateFile() to input data for a record and add to Item.dat . 2. Write a function CalAmt(ItemName) in Python which accepts the Item name as parameter and returns a list containing total Qty of items in Stock and Total amount for that ItemName.   OR  A binary file “Employee.dat has structure (Empid, EName, Dept , Salary).   1. Write a function countrec() in Python that would read contents of the file “Employee.dat” and display the details of those employees whose salary is above 5000. 2. Write a function Deptrec(DName) in Python which accepts the Department name as parameter and returns a list containing the names of all employees in that department. | | 5 |

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