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| **PB/CS/1220B 10/12/2020**  **PRE-BOARD EXAMINATION (2020-21)** | | | | | |
| **SUBJECT: COMPUTER SCIENCE (PYTHON)**  **GRADE: XII** | | | MAX. MARKS: 70TIME:3 HOURS | | |
| **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: * Section – I is short answer questions, to be answered in one word or one line. * 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. * Part - B is Descriptive Paper. * Part- B has three sections * Section-I is short answer questions of 2 marks each in which two question have internal options. * Section-II is long answer questions of 3 marks each in which two questions have internal options. * 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 * All answers to be written in the answer sheet provided. | | | | | |
| **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.** | | | |  |
|  | Write the size of the following literals:   1. “XY\   ZX”   1. “Matilda\’s” | | | | 1 |
|  | Name anyone function that can invoked using the Python module:   1. statistic 2. random | | | | 1 |
|  | Given the list L= [2,4,7,9], after the execution of statement L.insert(2,3) what output will the statement print(L) produce? | | | | 1 |
|  | What will be the output produced of the following code if str=”abcde”  >>>type(str[1:1]) ==type(str[1:2]) | | | | 1 |
|  | The following code is giving error. Explain the error:  D1={"a":[1,2],1:"abc",[2,3]:34,(4,5):{91:"abcd"}} | | | | 1 |
|  | Given that fout is the name of the writer object of Mydata.csv and Li=[200,”Radhika”,”Manager”,9000] is the record to be written to Mydata.csv. Write the python statement to write the list to Mydata.csv. | | | | 1 |
|  | Name the mechanism used to protect private networks from outside attack. | | | | 1 |
| 8. | Write the SQL query to display all the exiting databases. | | | | 1 |
| 9. | Chetan wants to send an email to his client which protocol will be used . Also write the full form of the protocol. | | | | 1 |
| 10. | Expand DML and name two DML commands in SQL. | | | | 1 |
| 11. | Write one name of wireless and one wired communication medium. | | | | 1 |
| 12. | What will be the output of following code :  >>> t=(23,90,89,1,56)  >>> a,b,c,d,e=t  >>> a+=10  >>> b-=9  >>> t=a,b,c,d,e  >>> print(t) | | | | 1 |
| 13. | Evaluate the expression:  2\*\*3\*\*2 | | | | 1 |
| 14. | Write two characteristics of Web 2.0. | | | | 1 |
| 15. | Out of the following, which one comes under cyber crime?   1. Stealing away a brand-new computer from a showroom. 2. Getting in someone’s social networking account without his consent and posting pictures on his behalf to harass him. 3. Secretly copying files from server of a call center and selling it to the order organisation. 4. Viewing sites on an internal browser. | | | | 1 |
| 16. | Sonal needs to display name of teachers, who have “0” as the third character in their name. She wrote the following query.  SELECT NAME FROM TEACHER WHERE NAME = “$$0?”;  But the query is not producing the result. Identify the problem. | | | | 1 |
| 17. | Identify the valid declaration of L:  L = 1, 23, ‘hi’, 6   1. list 2. dictionary 3. tuple 4. string | | | | 1 |
| 18. | Give the output of the given code:  txt = "xyzabcxyzlmn"  x = txt.partition("xyz")  print(x) | | | | 1 |
| 19. | Write SQL query to add a column total price with datatype numeric and size 10, 2 in a table product. | | | | 1 |
| 20. | Explain the SQL function count(). | | | | 1 |
| 21. | What is the default sort order of ORDER BY clause? | | | | 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 grocery shop has decided to maintain its database STORE for their inventory using SQL to store the data. A database administer, Nitin has decided a table named “Product”, showing details of products being sold in a grocery shop:     * Name of the database – Stock * Name of the table – Product * The attributes of Products are as follows:   Pcode- character of size 5  PName- character of size 25  UPrice- numeric  Manufacturer- character of size 25    Table: PRODUCT   |  |  |  |  | | --- | --- | --- | --- | | PCode | PName | UPrice | Manufacturer | | P01 | Washing Powder | 120 | Surf | | P02 | Toothpaste | 54 | Colgate | | P04 | Soap | 65 | Lux | | P05 | Shampoo | 280 | Dove | | P06 | Soap | 75 | Dove | | | | |  |
| 1. Identify the primary key from the table Product. | | | | 1 |
| 1. What is the degree and cardinality of table Product? | | | | 1 |
| 1. Add a new column Discount to the table Product. | | | | 1 |
| 1. Nitin wants to insert the following data into the attributes PCode, UPname and Discount respectively in the given table PRODUCT.   PCode= T09, PName = “Talcum Powder”,UPrice=38 and Discount=5.  Write the SQL query for the same. | | | | 1 |
| 1. The Dove company decides to increase the price of its products by 5%.Write the update query which Nitin will have to write in order the increase the prices. | | | | 1 |
| 23. | Mr. Oswal is a programmer to keep a record of his customers he has created a CSV file “Cust.csv” having CustomerName, City and AmountPaid. He has written the following code to add records and search for a Customer by name. | | | |  |
|  | import csv  def addCsvFile (CustomerName, City, AmountPaid): # to add records  with open(“\_\_\_\_\_\_\_\_”,”\_\_”)as outfile: #Line 1  filewrite=csv.writer(outfile,delimiter=",")  \_\_\_\_\_\_\_\_\_\_\_\_\_([CustomerName,City,AmountPaid]) #Line 2  outfile.close()  def searchCustomer(CustomerName): #to search for customer  with open("\_\_\_\_\_\_\_","\_\_") as infile: #Line 3  fileread=csv.reader(infile,delimiter=',')  for row in fileread:  if CustomerName.upper()==\_\_\_\_\_.upper(): #Line 4  print("Customer Found")  print(row)  break  else:  print("Not Found")  infile.close()      addCsvFile("Arun Jagdev","Ahemdabad",9000)  addCsvFile("Nikhil Thorat","Baroda",20000)  addCsvFile("Neeta Bhide","Mumbai",15000)  searchCustomer("Nikhil Thorat") #Line 5 | | | |  |
|  | 1. Fill in the blank in Line 1 to open the file Cust.csv to add records. | | | | 1 |
|  | 1. Write the statement in Line 2 to add the record to Cust.csv. | | | | 1 |
|  | 1. Fill in the blank in Line 3 to open the file Cust.csv to search for a record. | | | | 1 |
|  | 1. Complete the if statement in Line 4 to match the customer name. | | | | 1 |
|  | 1. Write the output he will obtain while executing Line 5. | | | | 1 |
|  | **PART B** | | | |  |
|  | **SECTION – 1** | | | |  |
| 24. | Do as follows:   1. Write the value of li according to the assignment statement:   li=[x for x in 'MATHEMATICS' if x in ['A','E','I','O','U']]   1. Write the list comprehension method to get the values of a list Even as:   Even =[2, 4, 6, 8, 10, 12, 14, 16, 18] | | | | 2 |
| 25. | What do you mean by IP Address? How is it useful in Computer Security?  OR  Name and explain any two communication channels used in networking. | | | | 2 |
| 26. | Expand the following terms:  a. NIC b. NIU c. RJ-45 d. MIME | | | | 2 |
| 27. | What do you understand by local and global scope of variables? How can you access a global variable inside the function, if function has a variable with same name?  OR  Differentiate between actual parameters and formal parameters with a suitable example for each. | | | | 2 |
| 28. | Trace the flow of execution for the following program:  def power(b,p):  r=b\*\*p  return r  def cpower(a):  a=a+2  a=power(a,0.5)  print(a)  n=5  cpower(n) | | | | 2 |
| 29. | Study the following code fragment and select the possible outcome from the options (i) to (iv). Also write the maximum and minimum value that can be assigned to the variable VALUE.  import random  VALUE=random.randint(0,1)+2  YOURTEXT=["ONE","TWO","SIX","TEN"]  for Y in range(0,VALUE):  print(YOURTEXT[Y],end="")  print("END")   1. ONETWOEND 2. ONEENDTWOEND 3. ONETWOSIX 4. ONETWOSIXEND | | | | 2 |
| 30. | What do you mean by cartesian product or cross join. | | | | 2 |
| 31. | Differentiate between fetchone() and fetchall() methods with suitable examples for each. | | | | 2 |
| 32. | What is difference between Worms and Virus in the Computer? | | | | 2 |
| 33. | Find and write the output of the following Python code:  def Revert(Num,last=2):  if last%2==0:  last+=1  else:  last-=1  for C in range (1,last+1):  Num+=C  return Num  A,B=20,4  A=Revert(A,B)  print(A,"&",B)  B-=1  A=Revert(A,B)  B=Revert(B)  print(A,"#",B) | | | | 2 |
|  | **Section - II** | | | |  |
| 34. | Write a function Change(Arr,n) in Python , which accepts a list Arr and a number n ,it replaces all the elements ending with n in the list with sum of the digits of the number and returns the changed Arr.  E.g  Data of the list input Arr= [10,22,34,72,12,11], n=2  Output Arr = [10,4,34,9,3,11] | | | | 3 |
| 35. | Write a function filter(oldfile,newfile) which accepts two files named“source.txt” and “target.txt” and the function filter copies the text file “source.txt” onto “target.txt” barring lines starting with letter “A”. Also write the function call.  OR  Write a function DisplayWords(myfile) which accepts “STORY.txt” as parameter and read lines from the text file “STORY.txt” and display those words which are less than 4 characters. Also write the function call. | | | | 3 |
| 36. | Write the outputs of the SQL queries a) to c) based on the relation APPLICANT and COURSES given below:     1. SELECT NAME, JOINYEAR FROM APPLICANTS WHERE GENDER =' F' AND C\_ID= ’ A02 ’ ; 2. SELECT MIN (JOI NYEAR) FROM APPLICANTS WHERE GENDER = ' M' ; 3. SELECT A.NAME,C.COURSE FROM APPLICANTS A, COURSES C WHERE A.C\_ID=C.C\_ID AND A.NAME LIKE “E%”; | | | | 3 |
| 37. | Write functions in Python Push(Li,Stack) and Pop(Stack) for performing push and pop function operations on a list of integers implemented as a stack. The Push function takes two lists as parameters and pushes all those integers which are even numbers divisible by 7 from list Li into the Stack. The function pop returns the deleted value or None depending on if the stack contains values or is empty.  OR  Write functions InsertQ(List, Queue) for performing insertion in a queue. The Insert functions take two lists as parameters and inserts the elements of List into Queue if the number in the list is prime and display the queue. | | | | 3 |
|  | **Section - III** | | | |  |
| 38. | Granuda consultants are setting up a secured network for their office campus at Faridabad for their day-to-day office and Web based activities. They are planning to have connectivity between 3 buildings and the head office situated in Kolkata. Answer the questions a) to e) after going through the building positions in the campus and other details, which are given below:  important-questions-for-class-12-computer-science-c-communication-technologies-(340-4)  important-questions-for-class-12-computer-science-c-communication-technologies-(341-1)   1. Suggest the most suitable place (i.e. block) to house the server of this organisation. Also, give a reason to justify your suggested location. 2. Suggest a cable layout of connections between the building inside the campus. 3. Suggest the placement of the following devices with justification. 4. The organisation is planning to provide a high speed link with its head office situated in the Kolkata using a wired connection. Which cable will be most suitable for this job? 5. Faridabad offices are trying to set up the network with the Kolkatta office  which type of network out of LAN, MAN or WAN will be formed? | | | | 5 |
| 39. | Write SQL commands for the following queries a) to d) based on the relations:  TABLE: **SALESPERSON**   |  |  |  |  | | --- | --- | --- | --- | | **CODE** | **NAME** | **SALARY** | **ITCODE** | | 1001 | TANDEEP JHA | 60000 | I2 | | 1002 | YOGRAJ SINHA | 70000 | I5 | | 1003 | TENZIN JACK | 45000 | I2 | | 1005 | ANOKHI RAJ | 50000 | I7 | | 1004 | TARANA SEN | 55000 | I7 |   TABLE: **ITEM**   |  |  |  | | --- | --- | --- | | **ITCODE** | **ITEMTYPE** | **TURNOVER** | | I5 | STATIONERY | 3400000 | | I7 | GROCERY | 6500000 | | I2 | BAKERY | 10090000 | | | | | 5 |
|  | 1. To display the CODE and NAME of all SALESPERSON having “I7” ITCODE from table SALESPERSON. 2. To display all the details from table SALESPERSON in descending order of SALARY. 3. To display the number of SALESPERSON ,ITCODE dealing in each TYPE of ITEM.(Use ITCODE for the same) 4. To display NAME of all the salespersons from the SALESPERSON table along with their corresponding ITEMTYPE from ITEM table. 5. To display the average salary of salesperson | | | |  |
| 40. | A binary file “Employee.dat” has structure [Empid, EmpName, Dept, Salary].   1. Write a user defined function CreateFile() to input data for a   record and add to Employee.dat .   1. Write a function CountRec(Department) in Python which accepts the Department name as parameter and count and return number of employees in that department stored in the binary file “Employee.dat”.   OR  A binary file “Item.dat” has structure (Itemno, ItemName,Quantity, Price). Write a function countqty() in Python that would read contents  of the file “Item.dat” and display the details of those Items whose  Quantity is above 25. Also returns number of items having Quantity above 25. | | | | 5 |

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