**SR GLOBAL SCHOOL**

**PRE BOARD EXAM-I (2022-23)**

**CLASS-XII**

**SUBJECT- COMPUTER SCIENCE (083)**

 **TIME- 3 hrs M.M.- 70 Marks**

**GENERAL INSTRUCTIONS-**

* **This question paper contains five sections, Section A to E.**
* **All questions are compulsory.**
* **Section A have 18 questions carrying 01 mark each.**
* **Section B has 07 Very Short Answer type questions carrying 02 marks each.**
* **Section C has 05 Short Answer type questions carrying 03 marks each.**
* **Section D has 03 Long Answer type questions carrying 05 marks each.**
* **Section E has 02 questions carrying 04 marks each. One internal choice is given in Q34 against part Conly.**
* **All programming questions are to be answered using Python Language only.**

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| --- | --- | --- |
| **Q.NO** | **PART A** | **Marks** |
| **1** | What is the default date format of Mysql.a)’dd-mm-yy’ b)’d-m-y ‘ c) ‘yyyy-mm-dd’ d) None | **1** |
| **2** | What will be the data type of the expression**12/5==0?**a) True b)False c) bool d) float | **1** |
| **3** | What will be output of the following code:d1={1:2,3:4,5:6}d2=d1.get(3,5)print(d2) a)3 b)4 c)5 d)Error | **1** |
| **4** | Consider the given expression:**8and13>10**Which of the following is the correct value of the expression?a)True b)False c)None d)NULL | **1** |
| **5** | Fill in the blank: Command is used to remove a column from a table in SQL.a)update b) remove c)alter d)drop | **1** |
| **6** | Which of the following multiple variable assignment statement is correct? a) a b c= 5 3 1 b) a b c = 5 3 1 c) a, b, c = 5, 3, 1 d) a, b, c = 5 3 1 | **1** |
| **7** | Which of the following is used to read n characters from a file object “f1”.a)f1.read(n) b)f1(2) c)f1(read,2) d) all of the above | **1** |
| **8** |  Which of the following commands will delete at able from a MYSQL data base?a)DELETE b)DROP c)REMOVE d)ALTER | **1** |
| **9** | Name DDL command from following.a)drop b)select c) insert d)update | **1** |
| **10** | Which of the following statement(s) would give an error after executing the following code?S="Lucknow is the Capital of UP" # Statement 1print(S) # Statement 2S[4]= '$’ # Statement 3S="Thank you" # Statement 4S=S + "Thank you" # Statement 5 (a) Statement 3 (b) Statement 4 (c) Statement 5 (d) Statement 4 and 5 | **1** |
| **11** | Which of the following statements correctly explain the function of seek() method?a. tells the current position within the file.b. determines if you can move the file position or not.c. indicates that the next read or write occurs from that position in a file.d. moves the current file position to a given specified position. | **1** |
| **12** | Select the correct statement, with reference to RDBMS:1. NULL can be a value in a Primary Key column
2. ''(Empty string) can be a value in a Primary Key column
3. A table with a Primary Key column cannot have an alternate key.

 d.) A table with a Primary Key column must have an alternate key. | **1** |
| **13** | Which protocol is used for transferring files over a TCP/IP network?a) FTP b)SMTP c)PPP d)HTTP | **1** |
| **14** | What will the following expression be evaluated to in Python? 27%7//(3/2)1. 2 b) 2.0 c) 4.0 d) 4
 | **1** |
| **15** | Which function cannot be used with string type data?a)min() b) max() c)count() d)sum() | **1** |
| **16** | Which of the following is valid identifier?a) Serial-no. b) total-Marks c) \_Percentage d) Hundred$ | **1** |
|  | Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as(a) Both A and R are true and R is the correct explanation for A(b) Both A and R are true and R is not the correct explanation for A(c) A is True but R is False (d) A is False but R is True |  |
|  | Assertion(A): Function is defined as a set of statements written under a specific name in the python codeReason(R): The complete block (set of statements) is used at different instances in the program as and when required, referring the function name. It is a common code to execute for different values (arguments), provided to a function. | **1** |
| **18** | Assertion (A): DBMS is an application package which arranges the data in orderly manner in a tabular form.Reason(R): It is an interface between database and the user. It allows the users to access and perform various operations on stored data using some tools. | **1** |
|  | **Section B** |  |
| **19** | Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.30=nfor i in range(0,n) IF i%4==0: print (i\*4) Else: print (i+4) | **2** |
| **20** | (a) Given is a Python string declaration:Str1="##NEET Examination 2023##"Write the output of: print(Str1[::-1])(b) Write the output of the code given below:D1 = {"sname": "Aman", "age": 26}D1['age'] = 27D1['address'] = "Delhi"print(D1.items()) | **2** |
| **21** | Write difference of circuit switching and packet switching briefly  **OR** Write two points of difference between WEB SERVER and WEB BROWSER briefly | **2** |
| **22** | 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 FROM and TO.import randomAR=[20,30,40,50,60,70]FROM=random.randint(1,3)TO=random.randint(2,4) for K in range(FROM,TO+1): print (AR[K],end=”# “)(i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#**OR**What will be the output of the following code?defmy\_func(var1=100, var2=200): var1+=10 var2 = var2 - 10 return var1+var2 print(my\_func(50),my\_func()) | **2** |
| **23** | (a) Write the full forms of the following with suitable description:  (i) PPP (ii) FTP(b) What is the use of SMTP? | **2** |
| **24** | Differentiate between char(n) and varchar (n) data types with respect to databases. **OR**Consider the table, student given below: (a) Identify the degree and cardinality of the table. (b) Which field should be made the primary key? Justify your answer. | **2** |
| **25** | 1. If a column score in a table match has five entries,viz.**30 , 65 , NULL , 40 , NULL ,**then what will be the output of the following query?

 **Select count(\*) ,avg (score) from match;**1. Write two differences between HAVING and WHERE clauses in SQL
 | **2** |
|  | **Section C** |  |
| **26** | 1. Consider the following table:**Table:Employee**

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++ |**EID|Name |DOB |DOJ |Salary|Project**|++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++|E01|Rajan |1990-07-12|2015-01-21|150000|P01 ||E02|Anurag |1992-06-21|2015-02-01|125000|P04 ||E03|Mohd Zaid|1996-11-15|2018-08-19|135000|P01 ||E04|Abhay |1991-10-25|2018-10-19|75000|P02 ||E05|Satya|1993-12-16|2018-10-19|85000|P04 |++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++What is the degree and cardinality of table Employee, if it contains only the given data? Which field fields is/ are the most suitable to be the Primary key if the data shown above is only the partial data?1. Write the output of the queries (i) to (iv) base don’t he table Employee:
2. select name, project from employee order byproject;
3. selectname,salaryfromemployeewheredojlike'2015%';
4. select name, salary from employee where salarybetween100000and200000;
5. select min (doj), max (dob) from employee;
 | **3** |
| **27** | Suppose content of 'Myfile.txt' isHumpty Dumpty sat on a wallHumpty Dumpty had a great fallAll the king's horses and all the king's menCouldn't put Humpty together again Write a python function named RECORD to calculate total number of characters in ‘Myfile.txt’**OR** Write a python function named CLRECORD to calculate total number of lines in ‘Myfile.txt’ | **3** |
| **28** | Meera has to create a database named MYEARTH in MYSQL. She now needs to create a table named CITY in the database to store the records of various cities across the globe. The table CITY has the following structure:Table: CITY

|  |  |  |
| --- | --- | --- |
| FIELD NAME | DATA TYPE | REMARKS |
| CITYCODE | CHAR(5) | Primary Key |
| CITYNAME | CHAR(30) |  |
| SIZE | INTEGER (3) |  |
| AVGTEMP | INTEGER |  |
| POLLUTIONRATE | INTEGER |  |
| POPULATION | INTEGER |  |

Help her to complete the task by suggesting appropriate SQL commands. | **3** |
| **29** | Write a function in Python Convert() to replaces elements having even values with its half and elements having odd values with twice its value in a list.eg: if the list contains 3, 4, 5, 16, 9 then rearranged list as 6, 2,10,8, 18 | **3** |
| **30** | Write a function in Python PUSH\_IN(L), where L is a list of numbers. From this list, push all numbers which are multiple of 3 into a stack which is implemented by using another list.**OR**Write a function in Python POP(Arr), where Arr is a stack implemented by a list of numbers. The function returns the value deleted from the stack. | **3** |
|  | **Section D** |  |
| **31** | Future Tech Corporation, a Bihar based IT training and development company. is planning to set up training centers in various cities in the coming year. Their first center is coming up in Lucknow district. At Lucknow center, they are planning to have 3 different blocks-one for Admin, one for Training and one for Development. Each block has number of computers, which are required to be connected in a network for communication, data and resource sharing. As a network consultant of this company, you have to suggest the best network related solutions for them for issues/ problems raised in questions. (i) to (v), keeping in mind the distances between various blocks/ locations and other given parameters. **Delhi****Lucknow Center** Admin Block Development Block Training BlockDistance between various blocks/ locations:

|  |  |
| --- | --- |
|  **Block** |  **Distance** |
| **Development to Admin**  | **28 m** |
| **Development to Training** | **105 m** |
| **Admin to Training** | **32 m** |
| **Lucknow Campus to Pilibhit Campus**  | **340 km** |

Number of computers:

|  |  |
| --- | --- |
| **Block** | **No of computer** |
| **Admin** | **40**  |
| **Training** | **50** |
| **Development** | **90** |

1. Suggest the most appropriate block/ location to house the SERVER in the Lucknow center (out of the 3 blocks) to get the best and effective connectivity. Justify your answer.
2. Suggest why should a firewall be installed at the Lucknow Center?
3. Suggest the best wired medium and draw the cable layout (Block to Block) to most efficiently connect various blocks within the Lucknow Center.
4. Suggest the placement of the following devices with appropriate reasons:

a)Switch / Hub b) Router1. Suggest the best possible way to provide wireless connectivity between Lucknow Center and Delhi Center.
 | **5** |
| **32** | a) What will be the output of following code:def Change Val(M,N): for i in range(N): if M[i]%5 == 0: M[i]//=5 if M[i]%3 == 0: M[i]//=3 L = [25,8,75,12]Change Val(L,4) for i in L: print(i,end="#")b) Differentiate between Selection and Projection operations in context of a Relational Database. Also, illustrate the difference with one supporting example of each.  **OR**a)Find and write the output of the following Python code :def Call(P=40,Q=20): P=P+Q Q=P–Q print(P,'@',Q) return PR=200S=100R=Call(R,S)print (R,'@',S)S=Call(S)print(R,'@',S)b) Differentiate domain and attribute? Explain with appropriate example? | **2+3=5** |
| **33** | What is the full form of csv? Which applications are used to read/edit these files?Write a Program in Python that defines and calls the following user defined functions:(i) ADDR () – To accept and add data of a student to a CSV file ‘record.csv’. Each record consists of a list with field elements as roll no, name and mobile to store roll number name and mobile no of student respectively.(ii)COUNTR () – To count the number of records present in the CSV file named ‘record.csv’. **OR** Give any one point of difference between a text file and a csv file. Write a Program in Python that defines and calls the following user defined functions:(i) add() – To accept and add data of an employee’s furniture detail to a CSV file ‘abc.csv’. Each record consists of a list with field elements as fid, f name and f price to store furniture id, furniture name and furniture price respectively.(ii) search()- To display the records of the furniture whose price is more than 5000. | **5** |
|  | **SECTION E** |  |
| **34** | Raghav has been assigned the task to create a database, named Projects. Heal so has to create following two tables in the data base: **Table:Projects**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **Remark** |
| PID | Char(5) | Primary Key |
| PNAME | Varchar (15) |  |
| STARTDATE | Start date |  |
| End Date | End date |  |

 **Table:Employee**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **Remark** |
| EID | Char(5) | **Primary key** |
| ENAME | Varchar (15) |  |
| DOB | Start date | **Cannot be Null** |
| BOJ | End date | **Cannot be Null** |
| salary | integer |  |
| project | Char (5) | Foreign key reference PID of project table |

Based on the given scenario, answer the following questions:1. Which table should he create first–Projects or Employee? Justify your answer.
2. What will be the degree of the Cartesian product of these two tables?
3. Write the SQL statement
4. to add a column Gender of type char (1) to the table Employee, as summing that table Employee has already been created.
5. Delete the record of an employee getting salary 35000.

**OR (option for part iii only)*** 1. Write the SQL statement
1. Write a statement to create the table Employee.
2. Insert the following record into the table

**10001 , Raj Singh ,17-05-1990, 18-02-2022, 25000, student management** | **4** |
| **35** | Sumit is a Python programmer. He has written a code and created a binary file record.dat with employee id name and salary. The file contains 10 records. He now has to update a record based on the employee id entered by the user and update the salary. The updated record is then to be written in the file temp.dat. The records which are not to be updated also have to be written to the file temp.dat. If the employee id is not found, an appropriate message should to be displayed. As a Python expert, help him to complete the following code based on the requirement given above:import \_\_\_\_\_\_\_ #Statement 1defupdate\_data(): rec={}  fin=open("record.dat","rb") fout=open("\_\_\_\_\_\_\_\_\_\_\_\_\_") #Statement 2 found=False eid=int(input("Enter employee id to update their 14 salary :: ")) while True: try: rec=\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #Statement 3 if rec["Employee id"]==eid: found=True rec["Salary"]=int(input("Enter new salary :: ")) pickle.\_\_\_\_\_\_\_\_\_\_\_\_ #Statement 4 else: pickle.dump(rec,fout) except: break if found==True: print("The salary of employee id ",eid," has been updated.") else: print("No employee with such id is not found") fin. close() fout. close()(i)Which module should be imported in the program? (Statement 1)(ii)Write the correct statement required to open a temporary file named temp.dat. (Statement 2)(iii)Which statement should A man fill in Statement 3 to read the data from the binary file, record.dat and in Statement 4 to write the updated data in the file, temp.dat? | **4** |