

General Instructions:

- Please check this question paper contains 37 questions.
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- Section B, C, and D contains questions of internal choice.
- All programming questions are to be answered using Python Language only.

Ques No	Question	Marks
Section A		
1	Find the invalid identifier from the following a) MyName b) true c) 2ndName d) My_Name	1
2	Given the lists L= [1,2,3,4,5,20,25,92], write the output of print(L[3:5])	1
3.	How many times is the word "HELLO" printed in the following statement? S='KVS RO Ranchi' for ch in s[3:8] : print("HELLO")	1
4.	If a = '8', what will be the result of a*2 + str(int(a)*2) a) '32' b) '1616' c) '8888' d) Error	1
5.	Suppose list1 is [3, 4, 5, 20, 5, 25, 1, 3], what is list1 after list1.pop(1)? a) [3, 4, 5, 20, 5, 25, 1, 3] b) [1,3,3, 4, 5, 20, 5, 25] c) [3, 5, 20, 5, 25, 1, 3] d) [1, 3, 4, 5, 20, 5, 25,]	1
6	Which of the following expressions evaluates to False? a) True and (not)False b) True or False c)not (False and True) d) False and not (False)	1
7	What will be the output of the following code? tup1 = (10, 20, 30) tup2 = tup1 tup1 +=(40,) print(tup1 == tup2) a) True b) False c) tup1 d) Error	1
8	What will be the output of the following code? Lst1= [1,2] Lst2=Lst1 if Lst1 is Lst2: print(True) else: print(False) a) True b) False c) [1,2] d) Error	1
9	In Python, Dictionaries are immutable a) False b) True	1
10.	Which one is incorrect ways to copy a dictionary in Python a)dict2 = dict1.copy() b)dict2 = dict(dict1) c)dict2 = dict1 d)dict2 =copy(dict1)	1
11.	State whether the following statement is True or False: The except block in Python is executed only if no exception occurs in the try block.	1
12.	Write the output of the following code def show(a,b): print(a,b) show(4,b=5)	1
13.	Rahul wants to add the content in existing Binary file. Suggest him which file opening mode will be used to open file for writing.	1

14.	Which protocol is used to send emails over the Internet? a) HTTP b) SMTP c) FTP d) PPP	1
15.	Which of the following Cable provides highest speed transmission? a) Optical Fibre b) Co-axial c) Twisted Pair d) None of the above	1
16.	Identify the class of the following IP Address 191.168.1.1 a) Class-A b) Class-B c) Class-C d) Class-D	1
17.	In SQL, name the clause that is used to display the tuples in ascending order of an attribute.	1
18.	Which of the following is a DDL command? a) SELECT b) ALTER c) INSERT d) UPDATE	1
19.	What will be the output of the query? SELECT * FROM student WHERE name LIKE 'R%'; a) Display all the Details of all students whose names start with 'R' b) Display all the Details of all students whose names end with 'R' c) Display only Names of all students whose names start with 'R' d) Display only Names of all students whose names end with 'R'	1
	Q20 and Q21 are Assertion(A) and Reason(R) 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	
20.	Assertion (A): SQL is a language which provide the facility to handle database. Reasoning (R): For handling the database SQL provide a Set of commands	1
21.	Assertion (A): A SELECT command in SQL can have multiple clauses. Reasoning (R): Delete command is used to remove the table from database	1
Section B		
22.	Explain the difference between mutable and immutable object in Python with example	2
23.	What is dynamic typing? Explain with example. OR Explain String Slicing with example	2
24.	Find the output: for a in range(1,4): if a%2==0: break print(a) else: print("Ending Loop")	2
25.	Find the output: d={1:'a',2:'e',3:'I'} print(d[1]) print(d.keys()) print(d.values()) print(d[3])	2
26.	Differentiate between HTTP server and HTTP client OR Define the benefits of HTTPS over HTTP	2
27.	Write about any 4 aggregate functions available in SQL. OR Define All the Clauses of SELECT Command	2
28.	What's the difference between CHAR and VARCHAR?.	2
Section C		
29.	Sample.txt file contains the following content This is my file Made glorious summer by this sun of York And all the clouds that lour'd upon our house In the deep bosom of the ocean buried Find the output of the given code with open("sample.txt", "r") as file:	3

	<pre>lines = file.readlines() print("File Content:") for line in lines: print(line) print("\nNumber of lines:", len(lines))</pre> <p style="text-align: center;">OR</p> <p>Find the output of the given code using above file with open("sample.txt", "r") as file:</p> <pre>for i in range(3): line = file.readline() if line: print(line) else: break</pre>																																	
30.	<p>Write a function in Python PUSH_ODD(Arr), where Arr is a list of numbers. From this list, push all odd numbers into a stack implemented by using a list.</p> <p style="text-align: center;">OR</p> <p>Write a function in Python POP_STACK(Arr), where Arr is a stack implemented by a list of numbers. The function should pop two values from the stack if possible and return them. If not enough elements are present in the stack, display an appropriate error message</p>	3																																
31.	<p>Write the full forms of DDL and DML. Explain any two commands of DML in SQL with example.</p>	3																																
Section-D																																		
32.	<p>Explain exception handling in Python. What are try, except, and finally blocks? Provide an example.</p>	4																																
33.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">EmpID</th> <th style="text-align: left;">EmpName</th> <th style="text-align: left;">Salary</th> <th style="text-align: left;">Department</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Aarav Sharma</td> <td>50000</td> <td>HR</td> </tr> <tr> <td>102</td> <td>Priya Singh</td> <td>60000</td> <td>Finance</td> </tr> <tr> <td>103</td> <td>Rohan Patel</td> <td>55000</td> <td>HR</td> </tr> <tr> <td>104</td> <td>Neha Gupta</td> <td>70000</td> <td>IT</td> </tr> <tr> <td>105</td> <td>Vikram Mehta</td> <td>65000</td> <td>Finance</td> </tr> <tr> <td>106</td> <td>Sneha Desai</td> <td>75000</td> <td>IT</td> </tr> <tr> <td>107</td> <td>Arjun Verma</td> <td>80000</td> <td>HR</td> </tr> </tbody> </table> <p>Using the above table write the output of the following query</p> <ol style="list-style-type: none"> SELECT EmpName, Salary FROM Employees WHERE Salary >= (SELECT DISTINCT Salary FROM Employees ORDER BY Salary DESC) SELECT Department, sum(Salary) count(*) FROM Employees SELECT EmpName, Salary FROM Employees WHERE Department = "IT" SELECT EmpName, Salary FROM Employees WHERE Salary > (SELECT AVG(Salary) FROM Employees) <p style="text-align: center;">OR</p> <p>Define the followings</p> <ol style="list-style-type: none"> Primary Key Foreign Key Database Schema Join 	EmpID	EmpName	Salary	Department	101	Aarav Sharma	50000	HR	102	Priya Singh	60000	Finance	103	Rohan Patel	55000	HR	104	Neha Gupta	70000	IT	105	Vikram Mehta	65000	Finance	106	Sneha Desai	75000	IT	107	Arjun Verma	80000	HR	4
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34.	<p>Write the output of the following code with justification if the contents of the file ABC.txt are:</p> <pre>Welcome to Python Programming! f1 = file("ABC.txt", "r") size = len(f1.read()) print(size) data = f1.read(5) print(data)</pre>	4																																
35.	<p>Write the following missing statements to complete the code:</p> <pre>import mysql.connector as mydb mycon = mydb._____ #Statement 1 (host = "localhost",user = "root",</pre>	4																																

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passwd = "system", database = "Admin")
cursor = _____ #Statement 2
sql = "SELECT * FROM student WHERE class=XII"
cursor. _____ #Statement 3
display = cursor. _____ # Statement 4
for i in display:
    print(i)
mycon.close ( )

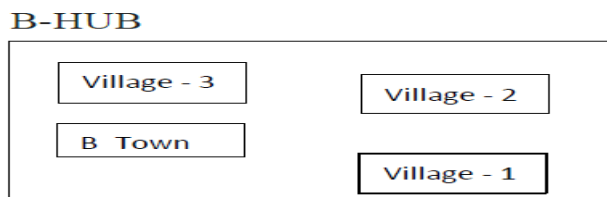
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Section-E

36. Planoteria is a knowledge and skill community which has an aim to uplift the standard of knowledge and skills in the society. It is planning to set-up its training centers in multiple towns and villages in India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as follows. As a network consultant, you have to suggest the best network related solutions for their issues/problems raised in (i) to (v) keeping in mind the distances between various locations and other given parameters.

5

A-HUB Head Office



Distance between different locations

Village – 1 to B_Town	2 KM
Village – 2 to B_Town	1 KM
Village – 3 to B_Town	1.5 KM
Village – 1 Village –2	3.5 KM
Village –1 Village –3	4.5 KM
Village –2 Village –3	2.5 KM
A_CITY Head Office – B_Hub	25 KM

Number of computers

B_Town	120PC
Village – 1	15PC
Village – 2	10PC
Village – 3	15PC
A_CITY Head Office	6PC

NOTE: In Villages, there are community centers, in which one room has been given as training center to this organization to install computers. The organization has got financial support from the government and top IT companies.

1. Suggest the most appropriate location of the SERVER in the B_HUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.
2. Suggest the best wired medium and draw the cable layout (location to location) to efficiently connect various location within the B_HUB.
3. Which hardware device will you suggest to connect all the computers within each location of B_HUB?
4. Which service/protocol will be most helpful to conduct live interactions of Experts from Head Office and people at all locations of B_HUB?
5. Which hardware device will you suggest to be procured by the company to be installed to protect and control the Internet uses within the campus?

37.	<p>Ranjeet wants to write a program in Python to copy the contents of file1.dat to file2.dat. Help him to complete the code.</p> <pre>import pickle def copy_binary_file(source, dest): with open(source, '____') as src_file: #Statement1 data = pickle.____(src_file) #Statement2 with open(dest,'wb') as dest_file: pickle.____(data, dest_file) #Statement3 print("Copied from",source,"to",dest, successfully.") source_file = 'file1.dat' dest_file = 'file2.dat' copy_binary_file(source_file, dest_file)</pre> <p>Explain the difference between text files and binary files. Why might you choose to use binary files over text files for certain applications?</p>	3+2
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