

Class- XII

MM- 70

In-case of MCQ, text of the correct answer should also be written.

Q. N.	Question	Marks
<u>SECTION A (21 x 1 = 21 Marks)</u>		
1	State True or False: “tuple() function can be used to convert a sequence into tuple data type.”	1
2	Which of the following SQL commands is not covered under DML? a. update b. delete c. drop d. insert	1
3	Consider the given expression: not ((True and False) or True) Which of the following will be correct output if the given expression is evaluated? a. True b. False c. None d. Null	1
4	Select the correct output of the code: >>> s='mail2kv@kvsangathan.kvs.in' >>> s=s.split('kv') >>> op = s[0] + "@kv" + s[2] >>> print(op) a. mail2@kvsangathan b. mail2@sangathan. c. mail2@kvsangathan. d. mail2kvsangathan.	1
5	Which of the following commands will remove the entire database from MYSQL? a. DELETE DATABASE b. DROP DATABASE c. REMOVE DATABASE d. ALTER DATABASE	1
6	Mohit visited a computer lab of his previous school after 20 years and found that the wires from all the computer systems were connected to a managed switch. Which topology has been used in that lab? a. Graph b. Star c. Tree d. Mesh	1

7	<p>Which of the following statement(s) would give an error after executing the following code?</p> <pre>D={'rno':32,'name':'Ms Archana','subject':['hindi','english','cs'],'marks':(85,75,89)}#S1 print(D) #S2 D['subject'][2]='IP' #S3 D['marks'][2]=80 #S4 print(D) #S5</pre> <p>a. S1 b. S3 c. S4 d. S3 and S4</p>	1
8	<p>Which of the following operations on a string will generate an error?</p> <p>a. "PYTHON"*2 b. "PYTHON" + "10" c. "PYTHON" + 10 d. "PYTHON" + "PYTHON"</p>	1
9	<p>Write the output:-</p> <pre>myTuple = ("John", "Peter", "Vicky") x = "#".join(myTuple) print(x)</pre> <p>a. #John#Peter#Vicky b. John#Peter#Vicky c. John#Peter#Vicky# d. #John#Peter#Vicky#</p>	1
10	<p>Study the following program and select the possible output(s).</p> <pre>import random X= random.random() Y= random.randint(0,4) print(int(X),":",Y+int(X))</pre> <p>a. 0 : 0 b. 1 : 6 c. 2 : 4 d. 0 : 3</p>	1
11	<p>The device used to amplify the transmitted signal in a network is _____.</p> <p>a. modem b. repeater c. gateway d. switch</p>	1
12	<p>Predict the output of the Python code given below:</p> <pre>value = 50 def display(N): global value value = 25 if N%7==0: value = value + N else: value = value - N print(value, end="#") display(20) print(value)</pre> <p>a. 50#5 b. 50#25 c. 25#5 d. 25#50</p>	1
13	<p>State whether the following statement is True or False: An exception in a program arises only when the user does not provide correct input.</p>	1
14	<p>Which of the following statements is FALSE about a relational database?</p> <p>a. A column can contain more than one values. b. The ordering of rows in a relation is immaterial. c. Column names in a relation should be unique. d. Primary key in a relation can comprise of more than one column.</p>	1

15	In case of _____ switching the data is divided into equal size packets and then transmitted via communication channel.	1
16	What will be the output of the following Python statement: print(10-3**2**2+144/12)	1
17	What will be the output of the following Python code? try: x = 10 / 0 except Exception: print("Some other error!") except ZeroDivisionError: print("Division by zero error!") a) Division by zero error! b) Some other error! c) ZeroDivisionError d) Nothing is printed	1
18	What will be the output of the following Python code? str= "Soft Skills" print(str[-3::-3]) a) lSf b) Stkl c) StKi d) l	1
19	In SQL, a relation consists of 5 columns and 6 rows. If 2 columns and 3 rows are added to the existing relation, what will be the updated degree of a relation? a) Degree: 7 b) Degree: 8 c) Degree: 9 d) Degree: 6	1
	Q20 and 21 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	
20	Assertion (A): A primary key must be unique and cannot have NULL values. Reasoning (R): The primary key uniquely identifies each row in the table.	1
21	Assertion (A): In binary files, the data is stored in the file in the same format as it is stored in the memory. Reason (R): A special newline character is used to mark the end of each line in a binary file.	1
<u>SECTION B (7 X 2 = 14 Marks)</u>		
22	Differentiate between mutable and immutable data type in python. Give one example of each. OR Explain the difference between while loop and for loop in python with suitable example.	2
23	Vivek has written a code to input a number and check whether it is even or odd number. His code is having errors. Rewrite the correct code and underline the corrections made. Def checkNumber(N): status = N%2 return #main-code num=int(input(Enter a number to check :)) k=checkNumber(num) if k = 0: print("This is EVEN number") else: print("This is ODD number")	2

24	<p>Write the Python statement for each of the following tasks using BUILT-IN functions/ methods only:</p> <p>(i) To add an element 20 at the end of the list L1.</p> <p>(ii) To print the list of all words in a string called ESSAY.</p> <p style="text-align: center;">OR</p> <p>Predict the output of the Python code given below:</p> <pre>def Diff(N1,N2): if N1>N2: return N1-N2 else: return N2-N1 NUM= [10,23,14,54,32] for CNT in range (4,0,-1): A=NUM[CNT] B=NUM[CNT-1] print(Diff(A,B),'#', end=' ')</pre>	1+1= 2
25	<p>Write a function countAll(PLACES) in Python, that takes the dictionary, PLACES as an argument and displays the names of the places that start with a vowel. For example, Consider the following dictionary PLACES={1:"India",2:"Paris",3:"China",4:"Osaka",5:"Dhaka"}</p> <p>The output should be:</p> <p>India Osaka</p> <p style="text-align: center;">OR</p> <p>Write a function, CutWords(TUP), that takes a tuple of string as argument and returns a list containing the string with their first character removed.</p> <p>For example, if the tuple is ("Mohit", "Paras", "Hamid", "Sujata"), the list will be ["ohit", "aras", "amid", "ujata"]</p>	2
26	<p>Predict the output of the Python code given below:</p> <pre>data=["L",20,"M",40,"N",60] times=0 alpha="" add=0 for c in range(1,6,2): times = times + c alpha = alpha + data [c-1] + "@" add = add + data[c] print (times, add, alpha)</pre>	2
27	<p>Rajshri has just created a table named "Library" containing the columns book_id, name, price, publisher.</p> <p>After creating the table, she realized that she has assigned int data type to price but many books have price in decimal. Help her in writing an SQL command to change the data type of price column.</p> <p>Thereafter, write the command to delete the record having book_id as 1003.</p>	2

	<p style="text-align: center;">OR</p> <p>Kushal is working in a database named EDUCATION, in which he has created a table named “Exam”. After successfully creating the table, he now wants to add a new column named Remarks of data type string in the table and also wants to make the existing column named exam_id as primary key. Help him write the commands to complete both the tasks.</p>	
28	<p>(i) Expand the following terms: SMTP , VoIP</p> <p>(ii) Give one difference between Hub and Switch.</p> <p style="text-align: center;">OR</p> <p>(i) Define the term protocol with respect to networks.</p> <p>(ii) What is the role of gateway in a network?</p>	1+1= 2
<u>SECTION C (3 X 3 = 9 Marks)</u>		
29	<p>Write a function in Python to read a text file, “Assembly.txt” and display those words which begin with the character ‘w’.</p> <p style="text-align: center;">OR</p> <p>Write a function, UpperCount() in Python that counts and displays total number of uppercase characters used in the text file named “Clips.txt”.</p>	3
30	<p>A list contains following record of a student as list elements: [StudentName, MobileNumber, Class, Section]</p> <p>Write the following user defined functions to perform given operations on the stack named ‘xiia’:</p> <p>(i) pushElement() - To Push an object containing name and mobile number of students who belong to class xii and section ‘a’ to the stack</p> <p>(ii) popElement() - To Pop the objects from the stack and display them. Also, display “Stack Empty” when there are no elements in the stack.</p> <p>For example: If the lists of students details are: [“Rajveer”, “99999999999”, “XI”, “B”] [“Swatantra”, “88888888888”, “XII”, “A”] [“Sajal”, “77777777777”, “VIII”, “A”] [“Yash”, “1010101010”, “XII”, “A”]</p> <p>The stack “xiia” should contain [“Swatantra”, “88888888888”] [“Yash”, “1010101010”]</p> <p>The output should be: [“Yash”, “1010101010”] [“Swatantra”, “88888888888”] Stack Empty</p>	3
31	<p>Predict the output of the Python code given below:</p> <pre>s="Welcome2kv" n = len(s) m="" for i in range(0, n): if (s[i] >= 'a' and s[i] <= 'm'): m = m + s[i].upper() elif (s[i] >= 'n' and s[i] <= 'z'): m = m + s[i-1] elif (s[i].isupper()): m = m + s[i].lower()</pre>	3

	<pre>else: m = m +'#' print(m)</pre> <p style="text-align: center;">OR</p> <p>Predict the output of the following Python code:</p> <pre>wildlife_sanctuary = ["Kaziranga", "Ranthambhore", "Jim Corbett", "Sundarbans", "Periyar", "Gir", "Bandipur"] output = [] for sanctuary in wildlife_sanctuary: if sanctuary[-1] in 'aeiou': output.append(sanctuary[0].upper()) print(output)</pre>																																									
	SECTION D (4 X 4 = 16 Marks)																																									
32	<p>Consider the table SALES as given below:</p> <table><tr><th>Sales_id</th><th>Customer_name</th><th>Product</th><th>Quantity_sold</th><th>price</th></tr><tr><td>S001</td><td>John Doe</td><td>Laptop</td><td>5</td><td>50000</td></tr><tr><td>S002</td><td>Jane Smith</td><td>Smartphone</td><td>10</td><td>30000</td></tr><tr><td>S003</td><td>Michael Lee</td><td>Tablet</td><td>3</td><td>15000</td></tr><tr><td>S004</td><td>Sarah Brown</td><td>Headphone</td><td>7</td><td>2000</td></tr><tr><td>S005</td><td>Emily Davis</td><td>Smartwatch</td><td>8</td><td>8000</td></tr><tr><td>S006</td><td>David</td><td>Smartwatch</td><td>3</td><td>16000</td></tr><tr><td>S007</td><td>Mark</td><td>Tablet</td><td>5</td><td>34000</td></tr></table> <p>A. Write the following queries:</p> <p>I. To display the total quantity sold for each product whose total quantity sold exceeds 10.</p> <p>II. To display the records of SALES table sorted by Product name in descending order.</p> <p>III. To display the distinct Product names from the SALES table.</p> <p>IV. To display the records of customers whose names end with the letter 'e'.</p> <p style="text-align: center;">OR</p> <p>B. Predict the output of the following:</p> <p>I. SELECT * FROM Sales where product='Tablet';</p> <p>II. SELECT sales_id, customer_name FROM Sales WHERE product LIKE 'S%';</p> <p>III. SELECT COUNT(*) FROM Sales WHERE product in ('Laptop', 'Tablet');</p> <p>IV. SELECT AVG(price) FROM Sales where product='Tablet';</p>	Sales_id	Customer_name	Product	Quantity_sold	price	S001	John Doe	Laptop	5	50000	S002	Jane Smith	Smartphone	10	30000	S003	Michael Lee	Tablet	3	15000	S004	Sarah Brown	Headphone	7	2000	S005	Emily Davis	Smartwatch	8	8000	S006	David	Smartwatch	3	16000	S007	Mark	Tablet	5	34000	4
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S005	Emily Davis	Smartwatch	8	8000																																						
S006	David	Smartwatch	3	16000																																						
S007	Mark	Tablet	5	34000																																						
33	<p>Rohan is making a software on “Countries & their Capitals” in which various records are to be stored/retrieved in CAPITAL.CSV data file. It consists some records (Country , Capital). Help him to define and call the following user defined functions with appropriate values:</p> <p>(i) AddNewRec(Country,Capital) – To accept and add the records to a CSV file “CAPITAL.CSV”. Each record consists of a list with elements as Country and Capital to store country name and capital name respectively.</p> <p>(ii)ShowRec() – To display all the records present in the CSV file named ‘CAPITAL.CSV’</p>	4																																								
34	<p>Consider the following tables BOOKS and ISSUED in a database named “LIBRARY”. Write SQL commands for the statements (i) to (iv).</p> <p style="text-align: center;">Table: BOOKS</p> <table><tr><th>BID</th><th>BNAME</th><th>AUNAME</th><th>PRICE</th><th>TYPE</th><th>QTY</th></tr><tr><td>COMP11</td><td>LET US C</td><td>YASHWANT</td><td>350</td><td>COMPUTER</td><td>15</td></tr><tr><td>GEOG33</td><td>INDIA MAP</td><td>RANJEET P</td><td>150</td><td>GEOGRAPHY</td><td>20</td></tr><tr><td>HIST66</td><td>HISTORY</td><td>R BALA</td><td>210</td><td>HISTORY</td><td>25</td></tr></table>	BID	BNAME	AUNAME	PRICE	TYPE	QTY	COMP11	LET US C	YASHWANT	350	COMPUTER	15	GEOG33	INDIA MAP	RANJEET P	150	GEOGRAPHY	20	HIST66	HISTORY	R BALA	210	HISTORY	25	1*4=4																
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	COMP12	MY FIRST C	VINOD DUA	330	COMPUTER	18									
	LITR88	MY DREAMS	ARVIND AD	470	NOBEL	24									
	<div>Table: ISSUED</div> <table><tr><th>BID</th><th>QTY_ISSUED</th></tr><tr><td>HIST66</td><td>10</td></tr><tr><td>COMP11</td><td>5</td></tr><tr><td>LITR88</td><td>15</td></tr></table> <div>(i) Display book name and author name and price of computer type books.</div> <div>(ii) To increase the price of all history books by Rs 50.</div> <div>(iii) Show the details of all books in ascending order of their qty issued.</div> <div>(iv) To display book id, book name and quantity issued for all books which have been issued.</div> <div>OR</div> <div>To display the Cartesian Product of the two tables.</div>						BID	QTY_ISSUED	HIST66	10	COMP11	5	LITR88	15	
BID	QTY_ISSUED														
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35	<div>Rajesh wants to write a program in Python to delete a record of book from the table named Book having book_id as primary key in MYSQL database, LIBRARY. Note the following to establish connectivity between Python and MySQL:</div> <div>a. Username - root</div> <div>b. Password - admin</div> <div>c. Host – localhost</div> <div>The value of book_id has to be accepted from the user. Help him to write the program in Python.</div>						4								
<div>SECTION E (2 X 5 = 10 Marks)</div>															
36	<div>Mr. Ramesh, a manager at a software company, needs to maintain records of employees. Each record should include: Employee_ID, Employee_Name, Department and Salary. Write the Python functions to:</div> <div>I. Input employee data and append it to a binary file.</div> <div>II. Update the salary of employees in the "IT" department to 200000.</div>						<div>2+3</div> <div>= 5</div>								
37	<div>MakeInIndia Corporation, an Uttarakhand based IT training company, is planning to set up training centres in various cities in next 2 years. Their first campus is coming up in Kashipur district. At Kashipur campus, they are planning to have 3 different blocks for App development, Web designing and Movie editing. 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 question nos. (i) to (v), keeping in mind the distances between various blocks/locations and other given parameters.</div> <div><div><div>MUSOORIE CAMPUS</div></div><div><div>KASHIPUR CAMPUS</div><div><div>APP DEVELOPM ENT</div><div>WEB DESIGNING</div><div>MOVIE EDITING</div></div></div></div>						<div>1*5=5</div>								

Distance between various blocks/locations:

Block	Distance
App development to Web designing	28 m
App development to Movie editing	55 m
Web designing to Movie editing	32 m
Kashipur Campus to Mussoorie Campus	232 km

Number of computers

Block	Number of Computers
App development	35
Web designing	50
Movie editing	80

- (i) Suggest the most appropriate block/location to house the SERVER in the Kashipur campus (out of the 3 blocks) to get the best and effective connectivity. Justify your answer.
- (ii) Suggest a device/software to be installed in the Kashipur Campus to take care of data security.
- (iii) Suggest the best wired medium and draw the cable layout (Block to Block) to economically connect various blocks within the Kashipur Campus.
- (iv) Suggest the placement of the following devices with appropriate reasons:
- Switch / Hub
 - Repeater
- (v) Suggest a protocol that shall be needed to share program and database files between Kashipur Campus and Mussoorie Campus.

OR

What is the use of VoIP?