MODEL QUESTION PAPER

Computer Science

XII – STANDARD (CBSE)

Time Allowed: 3 hours Maximum Marks: 70

General Instructions:

1. Please check this question paper contains 35 questions.
2. The paper is divided into 4 Sections- A, B, C, D and E.
3. Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
4. Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
5. Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
6. Section D, consists of 3 questions (31 to 33). Each question carries 5 Marks.
7. Section E, consists of 2 questions (34 to 35). Each question carries 4 Marks.
8. All programming questions are to be answered using Python Language only.

TAKSHASHILA UNIVERSITY

SECTION A		
1.	State True or False: "In a Python program, if a break statement is given in a nested loop, it terminates the execution of all loops in one go."	1
2.	In a table in MYSQL database, an attribute A of datatype varchar(20) has the value "Keshav". The attribute B of datatype char(20) has value "Meenakshi". How many characters are occupied by attribute A and attribute B? 1. 20,6 2. 6,20 3. 9,6 4. 6,9	1
3.	What will be the output of the following statement? print (3-2**2**3+99/11) 1. 244 2. 244.0 3. -244.0 4. Error	1
4.	Select the correct output of the code: S =-"Python is fun" L= S.plit() S_new = "-".join([L[0].upper(), L[1], L[2].capitalize()]) Print (S_new) Options: 1. PYTHON-IS-Fun 2. PYTHON-is-Fun 3. Python-is-fun 4. PYTHON-Is -Fun	1

5.	In MYSQL database, if a table, Alpha has degree 5 and cardinality 3, and another table, Beta has degree 3 and cardinality 5, what will be the degree and cardinality of the Cartesian product of Alpha and Beta? 1. 5,3 2. 8,15 3. 3,5 4. 15,8	1
6.	Riya wants to transfer pictures from her mobile phone to her laptop. She uses Bluetooth Technology to connect two devices. Which type of network will be formed in this case? 1. PAN 2. LAN 3. MAN 4. WAN	1
7.	Which of the following will delete key-value pair for key = “Red” from a dictionary D1? 1. delete D1("Red") 2. del D1["Red"] 3. del.D1["Red"] 4. D1.del["Red"]	1
8.	Consider the statements given below and then choose the correct output from the given options: pride="#G20 Presidency" print(pride[-2:2:-2]) Options 1. ndsr 2. ceieP0 3. ceieP 4. Yndsr	1

9.	Which of the following statement(s) would give an error during execution of the following code?
	tup = (20,30,40,50,80,79)
	print(tup) #Statement 1
	print(tup[3]+50) #Statement 2
	print(max(tup)) #Statement 3
	tup[4]=80 #Statement 4
	Options:
	1. Statement 1
	2. Statement 2
	3. Statement 3
	4. Statement 4
		1

TAKSHASHILA UNIVERSITY

10.	What possible outputs(s) will be obtained when the following code is Executed?
	
	import random
	myNumber = random.randint(0,3)
	COLOR = [“YELLOW”, “WHITE”, “BLACK”, “RED”]
	for I in COLOR:
	for J in range(1, myNumber):
	print (I, end=”*”)
	print()
	
	1.
	RED*
	WHITE*
	BLACK*
	RED*
	2.
	YELLOW*
	WHITE*
	BLACK*
	RED*
	3.
	WHITE* WHITE*
	YELLOW* YELLOW*
	BLACK* BLACK*
	RED* RED*
	4.
	YELLOW*
	WHITE*WHITE*
	BLACK* BLACK* BLACK*
	RED* RED* RED* RED* RED*
		1

11.	Fill in the blank: The modem at the sender’s computer end acts as a _____. 1. Model 2. Modulator 3. Demodulator 4. Convertor	1
12.	Consider the code given below: Which of the following statements should be given in the blank for #Missing Statement, if the output produced is 110? Options: 1.global a 2. global b=100 3. global b 4. global a=100	1

TAKSHASHILA UNIVERSITY

13.	State whether the following statement is True or False: An exception may be raised even if the program is syntactically correct	1
14.	Which of the following statements is FALSE about keys in a relational database? 1. Any candidate key is eligible to become a primary key. 2. A primary key uniquely identifies the tuples in a relation. 3. A candidate key that is not a primary key is a foreign key. 4. A foreign key is an attribute whose value is derived from the primary key of another relation.	1
15.	Fill in the blank: In case of _____ switching, before a communication starts, a dedicated path is identified between the sender and the receiver.	1
16.	Which of the following functions changes the position of file pointer and returns its new position? a. flush() b. tell() c. seek() d. offset()	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	
17.	Assertion(A): List is an immutable data type Reasoning(R): When an attempt is made to update the value of an immutable variable, the old variable is destroyed and a new variable is created by the same name in memory	1
18.	Assertion(A): Python standard library consists of number of modules. Reasoning(R): A function in a module is used to simplify the code and avoids repetition.	1
	SECTION B	
19.	(i) Expand the following terms: POP3, URL (ii) Give one difference between XML and HTML.	2
20.	The code given below accepts a number as an argument and Returns the reverse number. Observe the following code carefully and rewrite it after removing all syntax and logical errors. Underline all the corrections made Def RevNumber(num): Rev = 0 Rem = 0	2

TAKSHASHILA UNIVERSITY

	While num> 0: Rem = num % 10 Rev = Rev * 10 + Rem num = num //10 return (Rev) print(Rev)	
21.	Write a function countNow(PLACES)in Python, that takes the dictionary, PLACES as an argument and displays the names (in uppercase) of the places whose names are longer than 5 characters. For example, Consider the following dictionary PLACES={1:"Delhi",2:"London",3:"Paris",4:"New York", 5:"Doha"} The output should be: LONDON NEW YORK OR Write a function, lenWords(STRING, that takes a string as an argument and returns a tuple containing length of each word of a string. For example, if the string is " Come let us have some fun", the tuple will have (4, 3, 2, 4, 4, 3)	1 1

22.	Predict the output of the following code:
	
	S = "LOST"
	L = [10,21,33, 4]
	D = {}
	
	for I in range(len(S)):
	if I %2 ==0:
	D[L.pop()] == S[I]
	else:
	D[L.pop()] == I=3
	
	for K,V in D.items():
	print(K,V,sep="*")
		2

23.	Write the Python statement for each of the following tasks using BUILT -IN functions/methods only: (i) To insert an element 200 at the third position, in the list L1. (ii) To check whether a string named, message ends with a full stop / period or not.	2

TAKSHASHILA UNIVERSITY

24.	Ms. Shalini has just created a table named " Employee " containing columns Ename, Department and Salary. After creating the table, she realized that she has forgotten to add a primary key column in the table. Help her in writing an SQL command to add a primary key column EmpId of integer type to the table Employee. Thereafter, write the command to insert the following record in the table: EmpId-999 Ename-Shweta Department:Production Salary:26900	2
25.	Predict the output of the following code: Def Changer (P, Q=10): P = P/Q Q = P%Q Return P A=200 B=20 A=Changer (A, B) Print (A, B, sep='$') B=Changer(B) Print (A, B, sep='$', end='###')	2
	SECTION C	

26	Write the python program for adding two numbers. And give the sample output for the same program.
	
	Text1 = "IND-23"
	Text2 = ""
	I = 0
	while I < len(Text1):
	if Text1[I] >= "0" and Text1 <= "9":
	Val =int (Text1[I])
	Val = Val+1
	Text2 =Text2 + str(Val)
	else if Text1[I] >= "A" and Text1 <= "Z":
	Text2 =Text2 + Text1[I+1]
	else:
	Text2 =Text2 +"*"
	I+=1
	print(Text2)
		3

27	Write SQL queries for following: i) Write the query for creating table. ii) Write the query for inserting data into the table. iii) Write the query for count the rows in the table.	3

TAKSHASHILA UNIVERSITY

<table>
<tr><td>28</td><td>Write a function in Python to read a text file, Alpha.txt and displays those lines which begin with the word ‘You’.

OR

Write a function, vowelCount()in Python that counts and displays the number of vow els in the text file named Poem.txt.</td><td>3</td></tr>
<tr><td>29</td><td>Consider the table Personal given below:
Table: Personal

<table>
<tr><th>P_ID</th><th>Name</th><th>Desig</th><th>Salary</th><th>Allowance</th></tr>
<tr><td>P01</td><td>Rohit</td><td>Manager</td><td>89000</td><td>4800</td></tr>
<tr><td>P02</td><td>Kashish</td><td>Clerk</td><td>NULL</td><td>1600</td></tr>
<tr><td>P03</td><td>Mahesh</td><td>Superviser</td><td>48000</td><td>NULL</td></tr>
<tr><td>P04</td><td>Salil</td><td>Clerk</td><td>31000</td><td>1900</td></tr>
<tr><td>P05</td><td>Ravina</td><td>Superviser</td><td>NULL</td><td>2100</td></tr>
</table>

Based on the given table, write SQL queries for the following:
(i) Increase the salary by 5% of personals whose allowance is known.
(ii) Display Name and Total Salary (sum of Salary and Allowance) of all personals. The column heading ‘Total Salary’ should also be displayed.
(iii) Delete the record of Supervisors who have salary greater than 25000</td><td>3</td></tr>
<tr><td>30</td><td>A list, NList contains following record as list elements:
[City, Country, distance from Delhi]
Each of these records are nested together to form a nested list. Write the following user defined functions in Python to perform the specified operations on the stack named travel.
(i) Push_element(NList:
It takes the nested list as an argument and pushes a list object containing name of the city and country, which are not in India and distance is less than 3500 km from Delhi.
(ii) Pop_element(): It pops the objects from the stack and displays them. Also, the function should display “Stack Empty” when there are no elements in the stack.

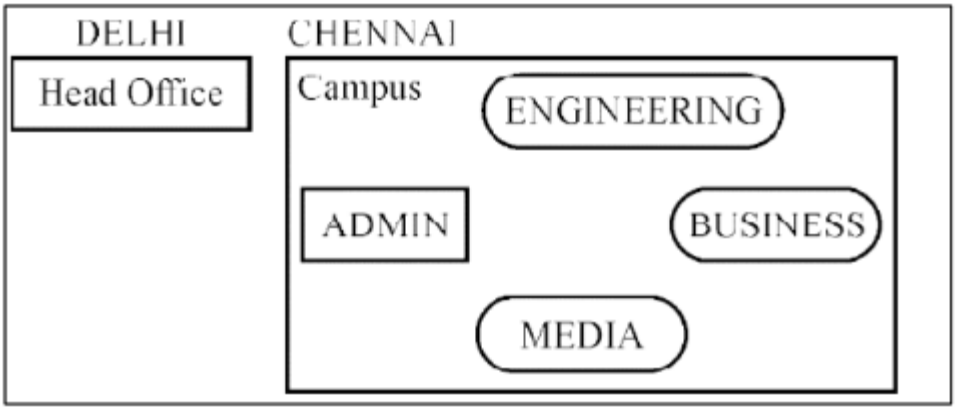
For example: If the nested list contains the following data:
NList=[["New York", "U.S.A.", 11734],
["Naypyidaw", "Myanmar", 3219],
["Dubai", "UAE", 2194],
["London", "England", 6693],
["Gangtok", "India", 1580],
["Columbo", "Sri Lanka", 3405]]
The stack should contain:
['Naypyidaw', 'Myanmar'],
['Dubai', 'UAE'],
['Columbo', 'Sri Lanka']
The output should be:
['Columbo', 'Sri Lanka']</td><td>3</td></tr>
</table>

TAKSHSHILA UNIVERSITY

['Dubai', 'UAE']
['Naypyidaw', 'Myanmar']
Stack Empty

SECTION D

31 Meticulous EduServe is an educational organization. It is planning to setup its India campus at Chennai with its head office at Delhi. The Chennai campus has 4 main buildings – ADMIN, ENGINEERING, BUSINESS and MEDIA. 5



Block to Block distances (in Mtrs.)

From	To	Distance
ADMIN	ENGINEERING	55 m
ADMIN	BUSINESS	90 m
ADMIN	MEDIA	50 m
ENGINEERING	BUSINESS	55 m
ENGINEERING	MEDIA	50 m
BUSINESS	MEDIA	45 m
DELHI HEAD OFFICE	CHENNAI CAMPUS	2175 km

Number of computers in each of the blocks/Center is as follows:
ADMIN = 110
ENGINEERING = 75
BUSINESS = 40
MEDIA = 12
DELHI HEAD = 20

a) Suggest and draw the cable layout to efficiently connect various blocks of buildings within the CHENNAI campus for connecting the digital devices.
b) Which network device will be used to connect computers in each block to form a local area network?
c) Which block, in Chennai Campus should be made the server? Justify your answer.
d) Which fast and very effective wireless transmission medium should preferably be used to connect the head office at DELHI with the campus in CHENNAI?
e) Suggest a device/software to be installed in the CHENNAI Campus to take care of data security

TAKSHSHILA UNIVERSITY

32 (i) Differentiate between r+ and w+ file modes in Python. 5

(ii) Consider a file, SPORT.DAT, containing records of the following structure:

[SportName, TeamName, No_Players]

Write a function, copyData(), that reads contents from the file SPORT.DAT and copies the records with Sport name as "Basket Ball" to the file named BASKET.DAT. The function should return the total number of records copied to the file BASKET.DAT.

OR (Option for part (ii) only)

A Binary file, CINEMA.DAT has the following structure:
{MNO:[MNAME, MTYPE]}
Where
MNO – Movie Number
MNAME – Movie Name
MTYPE is Movie Type
Write a user defined function, findType(mtype), that accepts mtype as parameter and displays all the records from the binary file CINEMA.DAT, that have the value of Movie Type as mtype.

33 (i) Define the term Domain with respect to RDBMS. Give one example to support your answer. 5

(ii) Kabir wants to write a program in Python to insert the following record in the table named Student in MYSQL database,

SCHOOL:

- rno(Roll number)- integer
- name(Name) - string
- DOB (Date of birth) – Date
- Fee – float

Note the following to establish connectivity between Python and MySQL:

- Username - root
- Password – tiger
- Host - localhost

The values of fields rno, name, DOB and fee has to be accepted from the user. Help Kabir to write the program in Python.

SECTION E

34 Consider the tables PRODUCT and BRAND given below: 4

Table: PRODUCT

PCode	PName	UPrise	Rating	BID
P01	Shampoo	120	6	M03
P02	Toothpaste	54	8	M02
P03	Soap	25	7	M03
P04	Toothpaste	65	4	M04
P05	Soap	38	5	M05
P06	Shampoo	245	6	M05

Table: BRAND

BID	BName

TAKSHASHILA UNIVERSITY

	M02 Dant Kanti M03 Medimix M04 Pepsodent M05 Dove Write SQL queries for the following: (i) Display product name and brand name from the tables PRODUCT and BRAND. (ii) Display the structure of the table PRODUCT. (iii) Display the average rating of Medimix and Dove brands (iv) Display the name, price, and rating of products in descending order of rating.	
35	Vedansh is a Python programmer working in a school. For the Annual Sports Event, he has created a csv file named Result.csv, to store the results of students in different sports events. The structure of Result.csv is: [St_Id, St_Name, Game_Name, Result] Where St_Id is Student ID (integer) ST_name is Student Name (string) Game_Name is name of game in which student is participating(string) Result is result of the game whose value can be either 'Won', 'Lost' or 'Tie' For efficiently maintaining data of the event, Vedansh wants to write the following user defined functions: Accept() – to accept a record from the user and add it to the file Result.csv. The column headings should also be added on top of the csv file. wonCount() – to count the number of students who have won any event. As a Python expert, help him complete the task.	4

TAKSHASHILA UNIVERSITY