FIRST PREBOARD EXAMINATION
COMPUTER SCIENCE(083)
CLASS-XII

Time allowed: 3 Hours **SET - I**
Maximum Marks: 70

General Instructions:

- **Please check this question paper contains 35 questions.**
- **The paper is divided into 5 Sections- A, B, C, D and E.**
- **Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.**
- **Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.**
- **Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.**
- **Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.**
- **Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.**
- **All programming questions are to be answered using Python Language only.**

SECTION-A		
Q.1.	State True or False:- "When group functions are used , where clause must not be used."	1
Q.2.	In SQL select query ,----------keyword will prevent the entry of duplicate rows ? (a)Unique (b) Distinct (c)Primary key (d)NULL	1
Q.3.	The correct syntax of seek() is: (a) file_object.seek(offset [, reference_point]) (b)seek(offset [, reference_point]) (c) seek(offset, file_object) (d) seek.file_object(offset)	1
Q.4.	In order to check whether the key 2 is present in the dictionary Book, Ramesh uses the following command:- 2 in Book He gets the answer 'True'. Now to check whether the name 'Madras Diaries' exists in the dictionary Library, he uses the following command: 'Madras Diaries' in Library But he gets the answer as 'False'. Select the correct reason for this: A. We cannot use the in function with values. It can be used with keys only. B. We must use the function Library.values() along with the in operator C. We can use the Library.items() function instead of the in operator D. Both b and c above are correct.	1
Q.5.	>>>def Interest(p,c,t=2,r=0.09):	1

	return p*t*r Considering the above defined function which of following function call are legal. 1. Interest(p=1000,c=5) 2. Interest(r=0.05,5000,3) 3. Interest(500,t=2,r=0.05) 4. Interest(c=4,r=0.12,p=5000) i. 1 , 2 and 4 ii. 2 & 3 iii. 1 &4 iv. 3 & 4	
Q.6.	A variable declared outside all the functions in a python program, then mention the statements which are True in the context of the variable. 1. This variable will have global scope. 2. This variable will not be accessible from anywhere in the prog. 3. This variable will have a large lifetime than local variable. 4. This variable will be referred as Local variable. (a) Only 1&2 (b) Only 1 (c) Only 1&3 (d) Only 3	1
Q.7.	Anubha is working with a program where she gave some values to the function. She doesn't know the term to relate these values. Help her by selecting the correct option. a) function value b) arguments or parameters c) return values d) function call	1
Q.8.	Which of the following is not a type conversion function? a) int() b) str() c) input() d) float()	1
Q.9.	For the following python code, what will be the datatype of variables x, y, z given that the code runs without any error? f = open('story.txt') x = f.read(1) y = f.readline() z = f.readlines() a. string, list, list b. None, list, list c. string, string, list d. string, string, string	1
Q.10.	What possible outputs are expected to be displayed on screen at the time of execution of the program from the following code? **import random** **Arr=[10,30,40,50,70,90,100]**	1

	L=random.randrange(1,3) **U=random.randrange(3,6)** **for i in range(L,U+1):** **print(Arr[i],"@",end="")** a) 40 @50 @ (b) 10 @50 @70 @90 @ c) 40 @50 @70 @90 @ (d) 40 @100 @	
Q.11.	Evaluate the following expressions: a) 36 * 3 + 4**2 // 5 -18 b) 10 > 5 and 7 > 12 or not 18 > 3	1
Q.12.	The contents of a text file named 'poem.txt' is as shown below: **welcome students** **this is computer science class** **your are going to use** **text file in your programs** What will be the output of the following code? **fin=open('poem.txt')** **x = ''** **for line in fin:** **words=line.split( )** **for w in words:** **if len(w)>len(x) and w[0] not in "abcmno":** **x = w** **print(x)** a. programs b. science c. computer d. students	1
Q.13.	If a text file is opened in w+ mode, then what is the initial position of file pointer/cursor? a. Beginning of file b. End of the file c. Beginning of the last line of text file d. Undetermined	1
Q.14.	Two devices are in network if A. A process in one device is able to exchange information with a process in another device B. A process is running on both devices C. The processes running of different devices are of same type D. None of the above.	1
Q.15.	The location of a resource on the internet is given by its? A. Protocol B. URL C. E-mail address D. Domain Name	1

Q.16.	If all devices are connected to a central hub, then topology is called a)tree topology b)bus topology c)star topology d)mesh topology	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		
Q.17.	Assertion (A): CSV (Comma Separated Values) is a file format for data storage which looks like a text file. Reason (R): The information is organized with one record on each line and each field is separated by comma.	1
Q.18.	Assertion (A) : Items in dictionaries are unordered. Reason (R) : We may not get back the data in the same order in which we had entered the data initially in the dictionary.	1
	SECTION-B	
Q.19.	(i)Differentiate between WiFi and WiMax in context of wireless communication technologies. (ii) Write disadvantage of bus topology and star topology. OR (i)Differentiate between Domain name and URL. Illustrate with the help of suitable example. (ii) What are Routers?	2
Q.20.	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. **Value=30** **for VAL in range(0,Value)** **if val%4==0:** **print (VAL*4)** **elseif val%5==0:** **print (VAL+=3)** **else:** **print(VAL+10)**	2
Q.21.	Write a function SUMNOS() that accept a list L of numbers and prints all even numbers having 4 or 6 at unit's place and all odd numbers having 3 or 5 at unit's place separately. If L=[21,22,23,24,25,26,27,28,33,34,35,36,37] Output : Even nos: 24 26 34 36 Odd numbers:23 25 33 35	2

	OR Write a function CREATEDICT() that accepts a string and creates the dictionary with each word as key and first and letter of the word as value excluding single letter word If the string is “where there is a will there is a way” Dictionary will be:- { “where”:”we” , ” there”:”te” , ” is”: “is” , “will”:”wl” , ” way”:”wy”}	
Q.22.	What will be the output for the below code snippet? **def div(lst,n):** **for i in range(0,n):** **if lst[i]%5==0:** **lst[i]+=5** **else:** **lst[i]/=2** **lt=[45,20,23,False,54,85,True]** **div(lt,len(lt))** **for i in lt:** **print(i,end='#')**	2

Q.23.	**(i) What will be the output produced by the following code :**
	`a,b,c=(50),(50,),[50]`
	`print(a*2,b*2,c*2)`
	
	Options :
	[a] 100 (50, 50) [50, 50] [b] 50 (100,) [50, 50]
	[c] 100 (100,100) [50, 50] [d] 100 (50, 50) [100, 50]
	
	(ii) Find the output : print('concatenate'.split('at').insert(2,9))
	Options :
	[a] ['conc', 'en', 'e',9] [b] ['conc', 'en', 9,'e']
	[c] None [d] Error
	
	OR
	A list named height stores height of students of a class -8. Write the Python command to import the required module and (using built-in function) to display the average height of the students from the given list.
		2

Q.24.	Ankita has created a table named “PRODUCT” containing columns productname, company, qty, price. After creating the table, she realized that she has forgotten to add a primary	2

	key column in the table. Help her in writing an SQL command to add a primary key column productcode of integer type to the table PRODUCT Thereafter, write the command to decrease the quantity of products with name beginning with “sh” by 10. **OR** While creating the table Student last week, Ms. Sharma forgot to include the column Game_Played. Now write a command to insert the Game_Played column with VARCHAR data type and 30 size into the Student table and it should not be left blank? In Marks column of ‘Student’ table, for Roll number 2, the Ms Sharma entered the marks as 45. However there was a totalling error and the student has got her marks increased by 5. Which MySQL command should she use to change the marks in ‘Student’ table	
Q.25.	Predict the output of the following code: **x,y= [10, 15, 20, 25], []** **def createlist(A,B):** **for i in range (len (A)):** **B. append(i+A.pop (0))** **A.insert(0,i+3)** **print (A,B, sep="&")** **createlist(x,y)**	2
	SECTION-C	
Q.26.	FIND THE OUTPUT OF THE FOLLOWING CODE:- **def Execute(M):** **if M%3==0:** **return M*3** **else:** **return M+10;** **def display(B=4):** **for T in range (B-1,B+2):** **print(Execute(T),"*",end="")** **print()** **display(5)** **display()** **display(3)**	3
Q.27.	Consider the table watches given below and write the output of the SQL queries that follow Table: Watches	3

Watchid	Watch_Name	Price	Type	Qty_Store
W001	Titan	10000	Unisex	100
W002	Timex	15000	Ladies	150
W003	Fastrack	20000	Gents	200
W004	Boat	7000	Unisex	250
W005	Noise	25000	Gents	100

(i) SELECT MAX(PRICE), MIN(PRICE) FROM WATCHES GROUP BY TYPE;
(ii) SELECT COUNT(DISTINCT QTY_STORE) FROM WATCHES;
(iii) SELECT WATCHID, PRICE, TYPE FROM WATCHES WHERE WATCH_NAME LIKE "T%";

Q.28. Write a function to read the content from the file "India.txt", and store the frequency of each word in a dictionary and display the dictionary on the screen. 3

For example, if the Content of the file is:

'India is the fastest growing economy
India is looking for investments around the globe
The whole world is looking at India for a great market'

Output of the function should be:

{'India': 4, 'is': 4, 'the': 4, 'fastest': 1, 'growing': 1, 'economy.': 1, 'looking': 2, 'for': 2, 'investments': 1, 'around': 1, 'globe.': 1, 'The': 1, 'whole': 1, 'world': 1, 'at': 1, 'a': 1, 'great': 1, 'market.': 1 }

OR

Write a function to display alternate lines of the text file Poem.txt.

Q.29. Consider the Table ''Infant'' shown below : 3

Table : Infant

ItemCode	Item	DatePurchase	UnitPrice	Discount
101	Frock	2023-01-23	700	10
102	Cot	2022-09-23	5000	25
103	Soft Toy	2023-06-17	800	10
104	Baby Socks	2021-10-16	100	7
105	Baby Suit	2022-09-20	500	5

Based on the given table, write SQL queries for the following:
(i) To display the details about the Cot and suits.
(ii) To list the names of items and their unit price that have unit price less than 800 and discount more than 5%.

	(iii) To list the names of items and their date of purchase that were purchased after 31st December, 2015.	
Q.30.	A list, Citylist contains following record as list elements: [City, Country,Population] Each of these records are nested together to form a nested list. Write the following user defined functions to perform the specified operations on the stack named CITY. (i) Push_element(Citylist): 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 population is more than 2 crores. (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:** Citylist=[['Delhi' , ' India',28514000], ['Shanghai','China ',25582000], ['Sao Paulo','Brazil ',21650000], ['Cairo' , 'Egypt' , 20076000], ['Mumbai ' , ' India ' , 19980000], ['Beijing' , ' China' , 19618000], ['Osaka' , ' Japan' , 19281000], ['New York' , 'United States',18819000]] **The stack should contain:** ['Shanghai' , 'China '], ['Sao Paulo' , 'Brazil '], ['Cairo' , 'Egypt'] **The output should be:** ['Cairo' , 'Egypt'] ['Sao Paulo' , 'Brazil '] ['Shanghai' , 'China '] Stack Empty	3
	SECTION - D	
Q.31.	Write the SQL commands for the following questions (i) to (iv) based on the relations Car and Customer given below: **Car**	1*4

Ccode	Cname	Make	Colour	Capacity	Charges
201	Triber	Renault	Yellow	7	1000
203	Altroz	Tata	Black	5	1500
208	Innova	Toyota	Silver	8	3000
209	Harrier	Tata	White	6	2000
212	Duster	Renault	Red	6	2500
217	Ertiga	Suzuki	Grey	7	2300

Customer

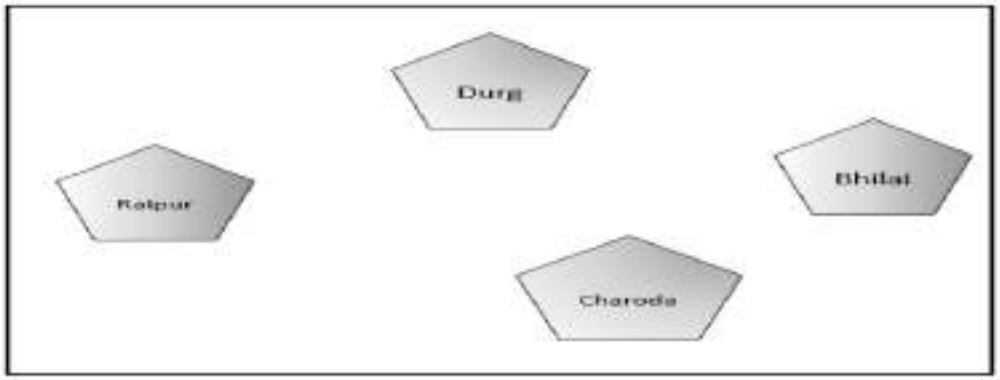
Custcode	Custname	Ccode
101	ARUN	201
102	NAMITA	203
103	NITIN	201
104	MANISH	212

(i) To display the Car Names, customer name and Charges of all the Silver and Grey coloured cars.
(ii) To display the non duplicate car codes in the customer table.
(iii) To display the Minimum and Maximum car charges.
(iv) To reduce the charges by giving discount of 10% in the car charges for existing customers (who are in the customer table).

Q.32. Gautam is a Python programmer working in a university. For the Annual Exhibition Event, he has created a csv file named exhibit.csv, to store the details of exhibits in different categories. The structure of exhibit.csv is : [id, stname, category, selected] Where id is id of exhibit (integer) ,stname is Student Name (string)
Category- is category name of exhibit(string), selected- its value can be 'yes','no','waiting'
write the following user defined functions:
Getdetails() – to accept a record from the user and add it to the file exhibit.csv. The column headings should also be added on top of the csv file.
selectionCount() – to count the number of exhibits that have been selected for next round. 2+2

SECTION-E

Q.33. Dhanvridhhi Investment Pvt. Ltd. has four branches in a Campus in Chattisgarh, named Durg, Bhilai, Raipur and Charoda. The company wants to establish the networking between all the four offices. A rough layout of the same is as follows: 1*5



Approximate distances between these offices as per network survey team are as follows:

PlaceFrom	PlaceTo	Distance
Durg	Bhilai	30m
Bhilai	Charoda	40m
Charoda	Raipur	25m
Durg	Raipur	150m
Bhilai	Raipur	105m
Durg	Charoda	60m

In continuation of the above, the company experts have planned to install the following number of computers in each of their offices:

Office	No.ofcomputers
Durg	40
Bhilai	80
Charoda	200
Raipur	60

(i) Suggest the most suitable place (i.e., Block/Center) to install the server of this organization with a suitable reason.
(ii) Which device will you suggest to be placed/installed in each of these offices to efficiently connect all the computers within these offices?
(iii) Suggest the placement of a Repeater in the network with justification.
(iv) The organization is planning to connect its new office in Delhi, which is more than 1250 km current location. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer.
(v)Which of the following will you suggest to establish the online face-to-face communication between the people in the Chattisgarh offices and Mumbai Head Office?
a)Cable TV b)E-Mail
c)Video Conferencing d) Text Chat

Q.34.	(i) Differentiate between a and w file modes in Python. (ii) Consider a file, BOOKS.DAT, containing records of the following structure: [Bookcode, Bookname, Price, Publication] Write a function, copydetails(), that reads contents from the file BOOKS.DAT and copies the records with Publication as "Dhanpat Rai" and price above 1200 to a new file named DREC.DAT. The function should also return the total number of records copied to the file DREC.DAT. **OR** (i) How are binary files different from CSV files?	2+3

	(ii) A Binary file, ITEM.DAT has the following structure: {ITEM_CODE:[ITEMNAME, PRICE, COMPANY]} Where ITEM_CODE - code number of item, ITEMNAME – name of item PRICE – price of the item, COMPANY – company of item Write a user defined function, findcompany(company, pr), that accepts name of company and price as parameter and displays all the records from the binary file ITEM.DAT, that have the value of COMPANY as company and PRICE above pr.	
Q.35.	(i) The SQL SELECT provides clauses for sorting data and for grouping results. Write the names of clauses for these. (ii) Abhinav wants to write a program in Python to – [a]insert the a record in the table named candidate in MYSQL database, COLLEGE with fields as -CID- integer. C_NAME – string, DOB (Date of birth) – Date, Fee – float, COURSE-String. The values of fields CID, C_NAME, DOB, Fee, COURSE has to be accepted from the user. [b] display records with fee amount above 5000 Note the following to establish connectivity between Python and MySQL: Username – root, Password – RLB, Host - localhost Help Abhinav to write the program in Python. **OR** (i) Avani has created a table named “Doctor”, she wants to increase the OPDCharge by 25% of “Nephro” and “Cardio” department. She wrote a query- UPDATE Nephro,Cardio SET OPDCharge=25% WHERE department IN (‘Nephro’, ‘Cardio’); Help Avani to run the query by removing the errors from the query and write corrected query. (ii) Garima has created table STU-Details with Sno, Name, Stream, AvgMark, Grade. Note the following to establish connectivity between Python and MySQL: Username – root, Password – Admin, Host - localhost Help Garima to write program to do the following:- [a]To display the records of students whose grade is ‘A’ [b] To change the stream of the student with sno 1012 to “Humanities” from “Commerce”	1+4