

FIRST PRE BOARD EXAM (2024-25)
CLASS-XII
SUBJECT- COMPUTER SCIENCE(083)
QP12ACS01PB24

TIME-3:00 HRS

Max Marks-70

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- This question paper contains five sections, Section A to E.
- Section A have 21 questions (1 to 21) carrying 01 mark each.
- Section B has 07 questions (22 to 28) carrying 02 marks each.
- Section C has 03 questions (29 to 31) carrying 03 marks each.
- Section D has 04 questions (32 to 35) carrying 04 marks each.
- Section E has 02 questions (36 to 37) carrying 05 marks each.
- All programming questions are to be answered using Python Language only.
- In case of MCQs, text of the correct answer should also be written.

SECTION A

1.	State True or False “Variable declaration is implicit in Python.”	1
2.	Which of the following is an invalid datatype in Python? (a) Set (b) None (c) Integer (d) Real	1
3.	Given the following dictionaries dict_exam={"Exam": "AISSCE", "Year": 2025} dict_result={"Total": 500, "Pass_Marks": 165} Which statement will merge the contents of both dictionaries? (a) dict_exam.update(dict_result) (b) dict_exam + dict_result (c) dict_exam.add(dict_result) (d) dict_exam.merge(dict_result)	1
4.	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
5.	Select the correct output of the code: a = "Year 2022 at All the best" a = a.split('2') b = a[0] + ". " + a[1] + ". " + a[3] print (b) (a) Year . 0. at All the best (b) Year 0. at All the best (c) Year . 022. at All the best (d) Year . 0. at all the best	1
6.	Which of the following mode in file opening statement results or generates an error if the file does not exist? (a) a+ (b) r+ (c) w+ (d) None of the above	1
7.	Fill in the blank: _____ command is used to remove primary key from the table in SQL.	1

	example to support your answer.																							
26.	<p>(a) Write the full forms of the following: i. SMTP (ii) PPP</p> <p>(b) What is the use of TELNET?</p>	2																						
27.	<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> <p style="text-align: center;">OR</p> <p>Predict the output of the Python code given below:</p> <pre>tuple1 = (11, 22, 33, 44, 55 ,66) list1 =list(tuple1) new_list = [] for i in list1:if i%2==0: new_list.append(i) new_tuple = tuple(new_list) print(new_tuple)</pre>	2																						
28.	<p>Differentiate between count() and count(*) functions in SQL with appropriate example.</p> <p style="text-align: center;">OR</p> <p>Categorize the following commands as DDL or DML:INSERT, UPDATE, ALTER, DROP</p>	2																						
SECTION C																								
29.	<p>(a) Consider the following tables – Bank_Account and Branch:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Table: Bank_Account</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ACode</th> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>A01</td> <td>Amrita</td> <td>Savings</td> </tr> <tr> <td>A02</td> <td>Parthodas</td> <td>Current</td> </tr> <tr> <td>A03</td> <td>Miraben</td> <td>Current</td> </tr> </tbody> </table> </td> <td style="width: 50%; vertical-align: top;"> <p>Table: Branch</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ACode</th> <th>City</th> </tr> </thead> <tbody> <tr> <td>A01</td> <td>Delhi</td> </tr> <tr> <td>A02</td> <td>Mumbai</td> </tr> <tr> <td>A01</td> <td>Nagpur</td> </tr> </tbody> </table> </td> </tr> </table> <p>What will be the output of the following statement? SELECT * FROM Bank_Account NATURAL JOIN Branch;</p> <p>(b) Write the output of the queries (i) to (iv) based on the given table,</p>	<p>Table: Bank_Account</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ACode</th> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>A01</td> <td>Amrita</td> <td>Savings</td> </tr> <tr> <td>A02</td> <td>Parthodas</td> <td>Current</td> </tr> <tr> <td>A03</td> <td>Miraben</td> <td>Current</td> </tr> </tbody> </table>	ACode	Name	Type	A01	Amrita	Savings	A02	Parthodas	Current	A03	Miraben	Current	<p>Table: Branch</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ACode</th> <th>City</th> </tr> </thead> <tbody> <tr> <td>A01</td> <td>Delhi</td> </tr> <tr> <td>A02</td> <td>Mumbai</td> </tr> <tr> <td>A01</td> <td>Nagpur</td> </tr> </tbody> </table>	ACode	City	A01	Delhi	A02	Mumbai	A01	Nagpur	1+2
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		Table: TECH_COURSE					
		CID	CNAME	FEES	STARTDATE	TID	
		C201	Animation and VFX	12000	2022-07-02	101	
		C202	CADD	15000	2021-11-15	NULL	
		C203	DCA	10000	2020-10-01	102	
		C204	DDTP	9000	2021-09-15	104	
		C205	Mobile Application Development	18000	2022-11-01	101	
		C206	Digital marketing	16000	2022-07-25	103	
		i. SELECT DISTINCT TID FROM TECH_COURSE; ii. SELECT TID, COUNT(*), MIN(FEES) FROM TECH_COURSE GROUP BY TID HAVING COUNT(TID)>1; iii. SELECT CNAME FROM TECH_COURSE WHERE FEES>15000 ORDER BY CNAME; iv. SELECT AVG(FEES) FROM TECH_COURSE WHERE FEES BETWEEN 15000 AND 17000;					
30.	<p>Write a method COUNTLINES() in Python to read lines from text file 'TESTFILE.TXT' and display the lines which are not starting with any vowel. Example: If the file content is as follows: An apple a day keeps the doctor away. We all pray for everyone's safety. A marked difference will come in our country. T</p> <p>he COUNTLINES() function should display the output as: The number of lines not starting with any vowel - 1</p> <p style="text-align: center;">OR</p> <p>Write a function ETCOUNT() in Python, which should read each character of a text file "TESTFILE.TXT" and then count and display the count of occurrence of alphabets E and T individually (including small cases e and t too).</p> <p>Example:</p> <p>If the file content is as follows:</p> <p>Today is a pleasant day. It might rain today. It is mentioned on weather sites</p> <p>The ETCOUNT() function should display the output as: E or e: 6 T or t : 9</p>						3
31.	<p>(a) Write the outputs of the SQL queries (i) to (iv) based on the relations Teacher and Placement given below:</p>						2+1

Table : Teacher

T_ID	Name	Age	Department	Date_of_join	Salary	Gender
1	Arunan	34	Computer Sc	2019-01-10	12000	M
2	Saman	31	History	2017-03-24	20000	F
3	Randeep	32	Mathematics	2020-12-12	30000	M
4	Samira	35	History	2018-07-01	40000	F
5	Raman	42	Mathematics	2021-09-05	25000	M
6	Shyam	50	History	2019-06-27	30000	M
7	Shiv	44	Computer Sc	2019-02-25	21000	M
8	Shalakra	33	Mathematics	2018-07-31	20000	F

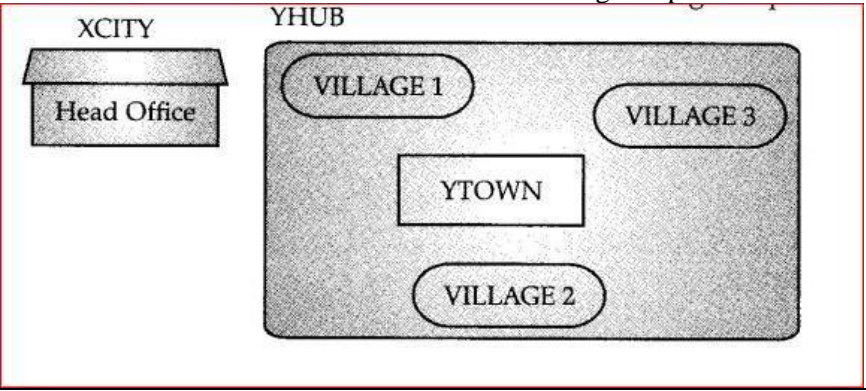
Table : Placement

P_ID	Department	Place
1	History	Ahmedabad
2	Mathematics	Jaipur
3	Computer Sc	Nagpur

- i. `SELECT Department, avg(salary) FROM Teacher GROUP BY Department;`
 - ii. `SELECT MAX(Date_of_Join), MIN(Date_of_Join) FROM Teacher;`
 - iii. `SELECT Name, Salary, T.Department, Place FROM Teacher T, Placement P WHERE T.Department = P.Department AND Salary>20000;`
 - iv. `SELECT Name, Place FROM Teacher T, Placement P WHERE Gender = 'F' AND T.Department=P.Department;`
- (b) Write the command to view all tables in a database.

SECTION D

32.	<p>(a) What will be the output of the following code?</p> <pre>x = 3 def myfunc(): global x x+=2 print(x, end=' ') print(x, end=' ') myfunc() print(x, end=' ')</pre> <p>(b) Consider the code given below</p> <pre>Import _____ as sqltor conn=sqltor.connect(host='localhost',user='john',password='', ,database='test') cursor=_____ query =_____ cursor.execute(query) data=_____ for row in data: print(row)</pre> <p>The above code displays all details of students present in the table Student whose marks are more than and grade is 'B' using Python MySQL connectivity. Complete the missing code</p>	2+2
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	by fill in the blanks.	
33.	(a) differentiate dump() and load() in the context of binaryfile. (b) Write a Program in Python that defines and calls the following user defined functions: i. add() – To accept and add data of a Product to a CSV file ‘Product.csv’.Each record consists of a list with field elements as pid, pname and price to store Product id, Product name and Product price respectively. ii. search()- To display the records of the Product whose price is more than 20000 and product name starting with a vowel.	2+2
34.	Write a program to create a Stack of Students containing 5 records each record structured as [Roll, Name, Percentage of marks].Perform the following: a) Display all the details of the Student who got the highest percentage of marks. b) Insert a new Record to a Stack. c) Remove the student details who scored less than 90% and display Stack.	4
35.	A school wants to store its students' records in digital form. For this they want the following information of each student to be stored: - Student_ID – integer - Student_Name – string - Class – integer - House – string You, as a programmer, have been assigned to do this job for school. 1. Write a function to input the data of a student and append it in a binary file. 2. Write a function to update the data of student whose house is Ashoka and change it to Raman.	2+2
SECTION E		
36.	Intelligent Hub India is a knowledge community aimed to uplift the standard of skills and knowledge in the society. It is planning to setup its training centers in multiple towns and villages of 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 given. As a network consultant, you have to suggest the best network related solution for their issues/problems raised in (a) to (e) keeping in mind the distance between various locations and given parameters. 	5

	<p>Shortest distance between various locations:</p> <table border="1"> <tr><td>VILLAGE 1 To YTOWN</td><td>2 KM</td></tr> <tr><td>VILLAGE 2 To YTOWN</td><td>1.2 KM</td></tr> <tr><td>VILLAGE 3 To YTOWN</td><td>3 KM</td></tr> <tr><td>VILLAGE 1 To VILLAGE 2</td><td>3.5 KM</td></tr> <tr><td>VILLAGE 1 To VILLAGE 3</td><td>4.5 KM</td></tr> <tr><td>VILLAGE 2 To VILLAGE 3</td><td>3.5 KM</td></tr> <tr><td>CITY Head office to YHUB</td><td>30 KM</td></tr> </table>	VILLAGE 1 To YTOWN	2 KM	VILLAGE 2 To YTOWN	1.2 KM	VILLAGE 3 To YTOWN	3 KM	VILLAGE 1 To VILLAGE 2	3.5 KM	VILLAGE 1 To VILLAGE 3	4.5 KM	VILLAGE 2 To VILLAGE 3	3.5 KM	CITY Head office to YHUB	30 KM	<p>Number of computers installed at various locations are as follows:</p> <table border="1"> <tr><td>YTOWN</td><td>100</td></tr> <tr><td>VILLAGE 1</td><td>10</td></tr> <tr><td>VILLAGE 2</td><td>15</td></tr> <tr><td>VILLAGE 3</td><td>15</td></tr> <tr><td>CITY OFFICE</td><td>5</td></tr> </table>	YTOWN	100	VILLAGE 1	10	VILLAGE 2	15	VILLAGE 3	15	CITY OFFICE	5	
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37.	<p>You are working on a project that involves managing <i>inventory</i> records of a store in a MySQL database. Your task is to create a Python program that performs the following operations:</p> <ol style="list-style-type: none"> Connect to the MySQL database: Assume the database is named STOREDB, the user is admin, and the password is admin123. The MySQL is available on a local computer, not a remote computer. Create a table: The table INVENTORY should have the following columns: <ul style="list-style-type: none"> ProductID (INTEGER, Primary Key, Auto Increment) ProductName (VARCHAR(100)) Price (FLOAT(8,2)) PurchaseDate (DATE) Insert data into the table: Insert at least three records with sample data into the INVENTORY table. Retrieve and display all records: Write a Python function that retrieves all records from the INVENTORY table and prints them in a readable format. 	5																									
END																											