SET - 1

Roll No. | | | | | | |

Candidates must write the Set No on the title page of the answer book.

SAHODAYA PRE BOARD EXAMINATION – 2025-26

- Please check that this question paper contains 11 printed pages.
- Set number given on the right-hand side of the question paper should be written on the title page of the answer book by the candidate.
- Check that this question paper contains 37 questions.
- Write down the Serial Number of the question in the left side of the margin before attempting it.
- 15 minutes time has been allotted to read this question paper. The question paper will be distributed 15 minutes prior to the commencement of the examination. The students will read the question paper only and will not write any answer on the answer script during the period. Students should not write anything in the question paper.

CLASS – XII

SUBJECT : COMPUTER SCIENCE (083)

Time Allowed: 3 hours **Maximum 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.
- 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.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

Q.No.	SECTION – A (21 × 1 = 21 Marks)	Marks
1.	State if the following statement is True or False: Using the math module, the output of the below statements will be 12: import math result = math.floor(math.sqrt(144)) + math.ceil(2.7) print(result)	**[1]**

2.	Identify the output of the following code snippet: text= "Annualmeetatthecampus" text= text.split('a') y=text[0]+"."+text[1]+"."+text[2]+text[3] print(y) (A) Annu.lmeeta.tthecmpus (B) nnu.lmeet.tthecmpus (C) Annu.lmeet.tthecmpus (D) Annu.lmeet.atthecmpus	**[1]**
3.	Which of the following expression(s) evaluates to True? (A) False or not(True and True) (B) not(True or False) and True (C) True and False or not(False) (D) False and not(True or False)	**[1]**
4.	In SQL, which constraint is used to uniquely identify each record in a database table and cannot contain NULL values?	**[1]**
5.	How many times is the word "Python" printed in the following statement? s = 'I love Python' for ch in s[3:8]: print('Python') (A) 11 times (B) 8 times (C) 3 times (D) 5 times	**[1]**
6.	Write the output of the following Python code : for k in range(10, 4, –3): print(str(k), '-', sep='$')	**[1]**
7.	What will be the output of the following Python statement: print(5 + 3 // 2.0 + (15 % 4)- 2)	**[1]**
8.	Consider the given SQL Query: SELECT department, COUNT(*) FROM employees WHERE COUNT(*) > 5 GROUP BY department; Sunil is executing the query but not getting the correct output. Write the correction.	**[1]**

9.	What will be the output of the following Python code?
	try:
	print("A", end='#')
	k = 5 // 0
	print("B")
	except ValueError:
	print("Value Error", end='*')
	except TypeError:
	print("Type Error", end= '*')
	except ZeroDivisionError:
	print("Hello", end= '*')
	else:
	print("Hi", end= '*')
	finally:
	print("C")
	(A) A#Hello*Hi (B) Hello*Hi*C (C) Hi*C (D) A#Hello*C
		[1]

10.	What will be the output of the following Python code?
	`Dict_Items = {"Name": "Anand", "Age": 17, "Address": "GOA"}`
	`print(Dict_Items.get("Location", "Not Specified"))`
	(A) Anand (B) GOA (C) None (D) Not Specified
		[1]

11.	What possible output is expected to be displayed on the screen at the time of execution of the Python program from the following code:
	`import random`
	`L=[120,530,950,701]`
	`Lower=random.randint(1,2)`
	`Upper=random.randint(2,2)`
	`for K in range(Lower, Upper+1):`
	`print(L[K], end="@")`
	(A) 950@701@ (B) 950@
	(C) 120@530@950@ (D) 120@530@950@701@
		[1]

12.	What will be the output of the following code?
	`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)`
	(A) 50#50 (B) 50#5 (C) 50#30 (D) 5#50#
		[1]

13.	A table needs to restrict Salary column values to more than 50000. The constraint that has to be used is (A) NULL (B) PRIMARY KEY (C) CHECK (D) NOT NULL	**[1]**

14.	What is the output of the expression?
	`a = "Year 2025 at All the best"`
	`print( a.partition('a'))`
	(A) [‘Ye’, ‘a’, ‘r 2025 at All the best’]
	(B) (‘Ye’, ‘a’, ‘r 2025 at All the best’)
	(C) [‘Ye’, ‘r 2025 ’, ‘t All the best’]
	(D) (‘Ye’, ‘r 2025 ’, ‘t All the best’)
		[1]

15. What will be the cardinality of the resultant table for the following query? **[1]**

SELECT * FROM Bank_Account NATURAL JOIN Branch;

Table: Bank_Account

ACode	Name	Type
A01	Amrita	Savings
A02	Parthodas	Current
A03	Miraben	Current

Table: Branch

ACode	City
A01	Delhi
A02	Mumbai
A01	Nagpur

(A) 6 (B) 2 (C) 3 (D) 4

16. Which of the following commands will delete the table from MYSQL database? **[1]**

(A) DELETE TABLE (B) DROP TABLE

(C) REMOVE TABLE (D) ALTER TABLE

17. _____ is a network protocol that allows user to remotely login into another computer but sends data in plain text without encryption. **[1]**

(A) TELNET (B) TCP/IP (C) FTP (D) SMTP

18. Which networking device connects computers in a network by using packet switching to receive and forward data to the destination: **[1]**

(A) Hub (B) Repeater (C) Switch (D) Router

19. What is the full form of XML which defines a set of rules for encoding documents in a format that is both human-readable and machine-readable? **[1]**

(A) eXtensible Markup Language (B) eXecutable Markup Language

(C) eXtra Modern Language (D) eXtended Markup Linguistics

Q.20 and Q.21 are Assertion (A) and Reason (R) based questions. Mark the correct choice as given below:

(A) Both A and R are true and R is the correct explanation of A.

(B) Both A and R are true and R is not the correct explanation of A.

(C) A is true but R is false.

(D) A is false but R is true.

20. **Assertion (A) :** The expression [10, 20, 30].insert(1, 15) in Python changes the original list by adding a new element at a specific position. **[1]**

Reason (R) : The insert() method allows you to add an element at a specified index in a list, shifting the existing elements to the right.

21.	**Assertion (A) :** In SQL, a column with a UNIQUE constraint can contain multiple NULL values. **Reason (R) :** The UNIQUE constraint ensures that all values in the column are different from each other, and NULL is not considered equal to another NULL.	**[1]**
Q.No	**SECTION – B (7 × 2 = 14 Marks)**	**Marks**
22.	(A) Explain the difference between sort() and sorted() in python with suitable examples. **OR** (B) Differentiate between split() and partition() in Python with a suitable example.	**[2]**

23.	The code provided below is a user defined function to count the total numbers between **1 to N,** whose **sum of digits is even**. However, there are syntax and logical errors in the code.
	Rewrite it after removing all the errors. Also, underline all the corrections made.
	`def sumeven(N):`
	`for i in range(1,N+1):`
	`s=0`
	`while i>0:`
	`d=i%10`
	`s+=d`
	`if s%2==0:`
	`c+=1`
	`print(c)`
		[2]

24.	Given the following lists:
	L1 = [5, 10, 15, 10, 20, 10, 25]
	L2 = [12, 14, 6, 8]
	Answer the following using **only built-in functions** in Python:
	(A) (I) Write a statement to insert an element 100 to the end of the list L2.
	(II) Write a statement to delete the elements from 4th position in the list L1.
	OR
	(B) Predict the output of the following Python code:
	`keys = ['p', 'q']`
	`d = {}.fromkeys(keys, {'val': 0})`
	`d['p']['val'] = 9`
	`print(d)`
	`d = {}`
	`for i in range(3):`
	`d.setdefault('nums', []).append(i)`
	`print(d)`
		[2]

25.	(A) Write a function **remove_key()** in Python that accepts a dictionary **student_data** and a key **roll_no** as parameter. If the key, roll_no exists in the dictionary, it should be removed. If it does not exist, print a message saying "Key not found". **OR** (B) Write a function **remove_all_occurrences()** in Python that accepts a list L and a number n as parameter. The function should remove all the occurrences of the number n from the list. If the number n is not found in the list, print "Data unavailable".	**[2]**

26.	Predict the output of the Python code given below :
	`sales = {"Q1": 120000, "Q2": 95000, "Q3": 110000, "Q4": 87000}`
	`bonus = {}`
	`for quarter in sales:`
	`  if sales[quarter] > 100000:`
	`  bonus[quarter] = sales[quarter] + 15000`
	`  else:`
	`  bonus[quarter] = sales[quarter] + 5500`
	`sales_new = sales.update(bonus)`
	`print(sales)`
	`print(sales_new)`
		[2]

27.	(A) Identify commands/functions for the following actions: [1+1=2] (I) To add a new column Salary to an existing table Teacher. (II) To get the total Salary of Teachers from Teacher table. **OR** (B) Differentiate between ALTER and UPDATE commands with a suitable example.	**[2]**
28.	(A) Define the following terms: (I) Wi-Fi Card (II) Ethernet Card **OR** (B) (I) Expand the following terms: URL, VoIP. (II) Write the use of SMTP?	**[2]**

Q.No	SECTION – C (3 × 3 = 9 Marks)	Marks
29.	(A) Write a function **CountEU()** in Python which will read the content of the text file IMP.TXT which will count and return the total occurrences of alphabets E and U (including small case e and u too). **OR** (B) Write and call a Python function **Count()** to read lines from a text file "quotes.txt" and display only those lines which ends with the punctuation marks like '.' or '!' or '?'.	**[3]**
30.	Rohit has created a dictionary containing names and marks as key value pairs respectively of 5 students. Write the following user defined functions to perform the operations on stack named **Student_Exam**: (I) PUSH() : Push the values (marks of the student) of the dictionary into the stack, where the corresponding key (name of the student) starts with the letter 'G'. (II) POP() : Pop and display the content of the stack. If the stack is empty, display the message as "UNDERFLOW". For example: If the sample content of the dictionary is as follows: R={"GEETA":78,"SEETA":92,"GARIMA":60,"MANISHA":85,"GIRIJA":77} The output from the program should be: 77 60 78 UNDERFLOW	**[3]**

31.	(A) Predict the output of the following Python code:
	s1 = "B7-R2XQ"
	s2 = ""
	i = 0
	while i < len(s1):
	if s1[i] >= 'A' and s1[i] <= 'Z':
	s2 = s2 + s1[i].lower()
	elif s1[i] >= '0' and s1[i] <= '9':
	s2 = s2 + str(int(s1[i])+i)
	else:
	s2 = s2 + "*"
	i += 1
	s2 = s2[:6]
	print(s2)
	OR
		[3]

(B)
```
D={'India':'New Delhi', 'China':'Beijing', 'USA':'Washington DC', 'UK':'London'}
for i in D:
    if 'U' in i:
        D[i]+='Ok'
for i in D.values():
    print(i,end=' ')
```

Q.No	SECTION – D (4 × 4 = 16 Marks)	Marks

32. Consider the table WATCHES as given below: **[4]**

WATCHES

Watchid	Watch_Name	Price	Type	Qty_Store
W001	HighTime	10000	Unisex	100
W002	LifeTime	15000	Ladies	150
W003	Wave	20000	Gents	200
W004	HighFashion	7000	Unisex	250
W005	GoldenTime	25000	Gents	100

(A) Write the following queries: -

(I) To display the details of those watches whose name ends with 'Time'.

(II) To display watch's name and price of those watches which have price range in between 5000-15000 (including both the values).

(III) To display total quantity in store of Unisex type watches.

(IV) To display the details of all the watches in descending order of price.

OR

(B) Predict the output of the following: -

(I)
```
SELECT Type, SUM(Price) as Total_Price
FROM WATCHES GROUP BY Type;
```

(II)
```
SELECT * from WATCHES
WHERE Price>10000 AND Qty_Store=100;
```

(III)
```
SELECT MAX(Price), MIN(Price) FROM WATCHES;
```

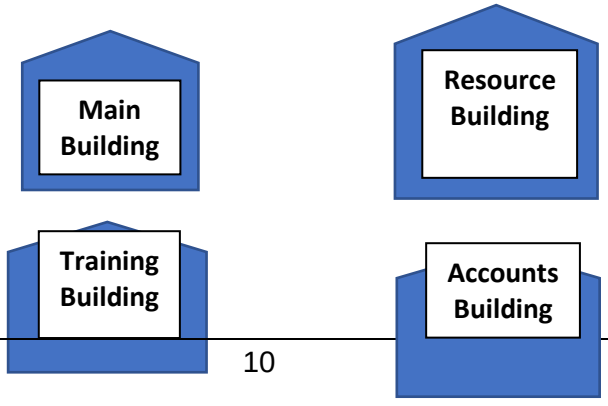
	(IV) SELECT DISTINCT Type FROM WATCHES;	
33.	Swadhin is a salesman working in a shop. To keep track of his sales, he has created a csv file **"SALES.CSV"** to store the details of the products. The structure of the **"SALES.CSV"** is as follows. **[P_NO, P_NAME, PRICE]** Where P_NO is the Product number, P_Name is the Product name and Price is the price of the Product. For efficiently managing the Sales, Swadhin wants to write the following user defined functions. **i) CREATE() –** To accept 10 records from user and store in the csv file. **ii) DISPLAY() –** To display all the records whose price is more than 5000.	**[4]**
34.	John has been entrusted with the management of a Healthcare database. He needs to access some information from DOCTOR and DEPT tables for a survey analysis. Help him to extract the following information by writing the desired SQL queries as mentioned below.	**[4]**

Table: **DOCTOR**

DId	DName	Gender	Age	Salary
D123	Sneha Garg	F	35	85000
D234	Ishan Mehera	M	40	91000
D456	Sankalpa Kaur	F	32	95850
D656	Shailender Gupta	M	42	98750
D234	Yaschika Lamba	F	39	75300
D334	Deepak	M	45	85400

Table: **DEPT**

DId	Department	Charges	OPD_Days
D123	Gynaecology	700	MWF
D234	Cardiology	850	MWF
D456	Gynaecology	700	TTS
D656	Cardiology	850	MWF
D234	ENT	900	TTS
D334	Neurology	950	TTS

	(I) To display DName, Department and Charges from the above table. (II) Display total charges of the doctors according to department wise. (III) Increase the charges of Neurology Department by 10%. (IV) (A) Show the details of the male doctors whose age is between 40 to 50. **OR** (B) To count total number of male and female doctors working in the hospital.	
35.	MySQL database named **SportsDB** has a **Hockey** table, which contains the following attributes: • H_code: Hockey code (Integer) • H_name: Name of Event (String) • Player: Number of player (Integer) • Award: Award amount of the Player (Integer) Consider the following details to establish Python-MySQL connectivity: • Username: admin_user • Password: Hockey2025 • Host: localhost Write a Python program to increase the Award of the Player by 4500 whose H_code is 115 in the **Hockey** table.	**[4]**
Q.No	**SECTION – E (2 × 5 = 10 Marks)**	**Marks**
36.	Sachin, a manager at ABC infotech company, needs to maintain the records of customers. Each record should include: [Cust_ID, Cust_Name, Item, Amount] Write the Python functions to: (I) Input customer data and append it to a binary file named **Customer.dat**. (II) To increase the amount by 15% whose Cust_ID is 200.	**[2+3]**
37.	"**SIKSHYA FOR ALL**" is an educational NGO. It is setting up its new campus at Jalandhar for its web-based activities. The campus has four buildings as shown in the diagram below. As a network expert, you are tasked with proposing the best network solutions for their needs based on the following:  	**[5]**

Centre to Centre distances between various buildings as per architectural drawings (in meters) is as follows:

Main Building to Resource Building	120 m
Main Building to Training Building	40 m
Main Building to Accounts Building	135 m
Resource Building to Training Building	125 m
Resource Building to Accounts Building	45 m
Training Building to Accounts Building	45 m

Expected number of Computers in each building:

Main Building	15
Resource Building	25
Training Building	250
Accounts Building	10

I. Suggest and draw the cable layout of connections between the buildings.

II. Suggest the most suitable place (i.e. building) to house the server of this NGO. Also, provide a suitable reason for your answer.

III. Suggest the placement of the following devices with specification:

(a) Repeater (b) Hub/Switch

IV. The NGO is planning to connect its international office situated in Mumbai. Suggest a wired communication links for a very high-speed connectivity?

V. (A) Suggest an option which will be used to protect unauthorized access in the network?

OR

(B) Which type of network (PAN, LAN, MAN, WAN) will be formed while connecting Main Building to Training Building?

***