KENDRIYA VIDYALAYA SANGATHAN HYDERABAD REGION
FIRST PRE-BOARD EXAMINATION 2024-25

CLASS: **XII** TIME:**03 HOURS**
SUBJECT: **COMPUTER SCIENCE** set 1 **M**AX. 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.

	SECTION-A	
1	Which of the following data type in Python supports concatenation? (A) int (B) float (C) bool (D) str	1
2	Identify the output of the following code snippet: text = "PYTHONROCKS" text = text.replace('RO', '#') print(text) (A) PY#CKS (B) PY#KS (C) PYTHON#CKS (D) PYTH#KS	1
3	Evaluate the following expression print(10 + 3 * 2**3 // 4 - 5 or 7 and 9) (A) 9 (B) 11 (C) 15 (D) 7	1
4	Consider the following statements and choose the correct output from the given options: EXAM="COMPUTER SCIENCE" print(EXAM[:12:-2]) (A) EN (B) CI (C)SCIENCE (D) ENCE	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 be the degree and cardinality of the Cartesian product of Alpha and Beta? A. 5,3 B. 8, 15 C. 3, 5 D. 15, 8	1
6	Which of the following is not a Tuple in Python? (A) (1, 2, 3) (B) (“One”, “Two”, “Three”) (C) (10) (D) (“One”,)	1
7	A Dictionary d={'sprint':'autumn','autumn':'fall','fall':'spring'} is created. Which of the following statement prints output as **fall** (A) d['autumn'] (B) d.'autumn' (C) d['sprint'] (D) d. 'sprint'	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]) A. ndsr B. ceieP0 C. ceieP D. yndsr	1
9	_____ is a non-key attribute, whose values are derived from the primary key of some other table. (A) Primary Key (B) Candidate Key (C) Foreign Key (D) Alternate Key	1

10	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
11	With respect to exception handling, how many **except** blocks a try block can have? (A) 1 (B) >=0 (C) 2 (D) no such block exists.	1
12	Which of the following function header is correct? A. def fun(a=1,b): B. def fun(a=1,b,c=2): C. def fun(a=1,b=1,c=2): D. def fun(a=1,b=1,c=2,d):	1
13	Which of the following commands is not a DDL command? (A) DROP (B) DELETE (C) CREATE (D) ALTER	1
14	Which SQL statement correctly retrieves the names of employees who earn more than the average salary? A. SELECT name FROM employees WHERE salary > AVG(salary); B. SELECT name FROM employees HAVING salary > AVG(salary); C. SELECT name FROM employees WHERE salary > (SELECT AVG(salary) FROM employees); D. SELECT name, AVG(salary) FROM employees GROUP BY name;	1
15	Suggest the suitable command to remove the pre-existing database named Clients. (A) delete database Clients (B) drop Clients (C) drop database Clients (D) Alter table drop Clients	1
16	Which SQL aggregate function is used to count the number of unique values in a column? A. COUNT(*) B. COUNT(DISTINCT Col Name) C. DISTINCT(COUNT Col Name) D. COUNT(UNIQUE Col Name)	1
17	The _____ is a protocol used to send emails from a client to a server. A. POP3 B. IMAP C. SMTP D. HTTP	1
18	A network device that connects dissimilar networks is-------- a) Modem b) Switch c) Bridge d) Gateway	1
19	_____ command is used to add a new column in a table in SQL (A) update (B) remove (C) alter (D)drop	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 4 (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): Default arguments in Python functions must be defined after all required arguments. Reasoning (R): Default arguments provide a fall back value when no argument is provided.	1
21	Assertion (A): An SQL SELECT statement can have both WHERE and ORDER BY clauses. Reasoning (R): WHERE filters data, and ORDER BY sorts it.	1

SECTION-B		
22	Your Vidyalaya decided to conduct Solo singing competition. CCA in charge wants to store the admission numbers of the participants. Help your CCA in charge in choosing the correct/suitable data structure (data type) in Python for the following. a) To store all the admission numbers of the registered candidates. May get changed any time till completion of registration process. b) To store the admission numbers of all the winners which never gets changed.	2
23	Give two examples of each of the following: A. Logical operators B. Membership operators	2
24	(a)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) (b) 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)	2
25	Identify the correct output(s) of the following code. Also write the possible values for variable R. import random signal= ['RED','YELLOW','GREEN'] for k in range (2, 0,-1): R=random.randrange(k) print((signal[R], end='#') (A) YELLOW # RED # (B) RED # GREEN # (C) GREEN # RED # (D) YELLOW # GREEN #	2
26	Rahul has written a code to input a number and return its reverse. His code is having errors. Rewrite the correct code and underline the corrections made. defreverse() n=int(input("Enternumber::") rev=0 while(num>0): r=num%10 rev=rev*10+r num=num//10 return rev	2
27	Satheesh has created a database "school" and table "student" and help him to write SQL queries for the following A) i). To view all the databases. . OR ii). To view the structure of the table student. B) i). To add the new column PhoneNo of datatype integer to the table student OR ii). To find the cardinality of the table student.	2

28	(A) Define the term web hosting? (OR) (B) Expand the following terms and mention their purpose i. POP ii. VoIP	2
	SECTION-C	
29	Write a Python function that counts and displays the number of words in a text file called "Article.txt". **OR** Write a Python function that reads a text file "Logs.txt" and displays all the lines that contain the word "success".	3
30	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. • 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. • 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. OR (B) • Write the definition of a user-defined function `push_odd(N)` which accepts a list of integers in a parameter `N` and pushes all those integers which are odd from the list `N` into a Stack named `OddNumbers`. • Write function pop_odd() to pop the topmost number from the stack and returns it. If the stack is already empty, the function should display "Empty". • Write function Disp_odd() to display all element of the stack without deleting them. If the stack is empty, the function should display 'None'.	3

31	(a)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="*"*)
	(OR)
	Predict the output of the following code:
	line=[4,9,12,6,20]
	for I in line:
	for j in range(1,I%5):
	print(j,’#’,end=””)
	print()
		3

SECTION-D

32 Consider the following table DOCTOR given below and write the output of the SQL Queries that follows : **4**

D_ID	D_NAME	D_DEPT	GENDER	EXPERIENCE
101	JOSEPH	ENT	MALE	10
104	GUPTA	MEDICINE	MALE	12
106	SUMAN	ORTHO	FEMALE	7
111	HANEEF	ENT	MALE	12
123	DEEPTI	CARDIOLOGY	FEMALE	6
132	VEENA	SKIN	FEMALE	12

i) SELECT D_NAME FROM DOCTOR WHERE GENDER='MALE 'AND EXPERIENCE=12 ;

ii) SELECT DISTINCT(D_DEPT) FROM DOCTOR ;

iii) SELECT D_NAME , EXPERIENCE FROM DOCTOR ORDER BY EXPERIENCE ;

iv) SELECT COUNT(*) FROM DOCTOR WHERE GENDER='MALE';

OR

i) Write a query to how many doctors in each department

ii) Write a query to display the names of doctors who have more 10 Years experience.

iii) Write a query to display the details of Female Doctors.

Write a query to change Dr.SUMAN department to ENT

33 A CSV file "WeatherData.csv" contains the data collected from various weather stations. Each record in the file includes the following data: **4**

- Name of the city
- Average temperature (in Celsius)
- Humidity percentage
- Rainfall (in millimeters)

For example, a sample record in the file might look like: ['Rainford', 32, 75, 120]

Write the following Python functions to perform the specified operations on this file:

1. Read all the data from the file in the form of a list and display all those records where the average temperature is above 30 degrees Celsius.

Calculate and display the average rainfall across all records in the file.

34 Consider the following tables STUDENT and ST-HOUSE. **4**

Table : STUDENT

lass	Sec	Rno	Sname	House
	A	1	ROHAN	H03
2	C	5	PALLAVI	H04
	D	12	KIRAN	H03
1	A	6	SAMPATH	H02

Table : ST-HOUSE

Hid	Hname	HMaster
H01	GANGA	VACHASPATH
H02	YAMUNA	MADHURI
H03	NARMADA	MURALI
H04	KAVERI	SRIHARI

	Write SQL Queries for the following. i) Display class, section and name of all students belong to NARMADA house. ii) Display the number of students present in the student table. iii) Display names of students in the descending order of names. iv) a) Remove all students of section A **(OR)** b) Write SQL query to add a new column to ST-HOUSE table named Hmember of Varchar type with size 20.	
35	Raman has created table named NATIONALSPORTS in MYSQL database, SPORTS : Each record contains the following fields: · GameID(Game number)- integer · Gamename(Name of game) - string · DOG(Date of Game) – Date · Venue(Venue of game) – decimal Note the following to establish connectivity between Python and MySQL: · Username - root · Password – KVR@321 · Host – localhost Raman , now wants to display all records of venue “Hyderabad”. Help him to write the python program.	4
	SECTION-E	
36	Mayank is a manager working in a retail agency. He needs to manage the records of various customers. For this, he wants the following information of each candidate to be stored: - Customer_ID – integer - Customer_Name – string - Address – string - Receipt no-integer You, as a programmer of the company, have been assigned to do this job for Mayank. (i) Write a function to input the data of a customers and append it in a binary file. (ii) Write a function to update the data of customers whose receipt no is 101 and change their address to "Secunderabad". (iii)Write a function to read the data from the binary file and display the data of all those candidates who are not belong to Secunderabad.	**5**
37	CITY CABLE NETWORK has set up its new centre at HYDERABAD for its office and web based activities. It has four buildings as shown in the diagram below: 	5

Number of Computers

Block A	25
Block B	50
Block C	125
Block D	10

Center to center distances

Black A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

(i)	Which type of network is this a)LAN b)PAN c)WAN d)TAN	1
(ii)	Suggest a cable layout of connections between the blocks.	1
(iii)	Suggest the most suitable place (i.e. block) to house the server of this organisation with a suitable reason.	1
(iv)	Suggest the placement of the following devices with justification ▪ Repeater ▪ Hub/Switch	1
(v)	A)The organization is planning to link its front office situated in a far city in a hilly region where cable connection is not feasible, suggest a way to connect it with reasonably high speed? OR B)To protect the network from unauthorized access which device/software should be installed ?	1

------All The Best-----