KENDRIYA VIDYALAYA SANGATHAN CHANDIGARH REGION

PRE-BOARD -II EXAMINATION - 2024-25

Class: XII **Max Marks:70**
Subject: COMPUTER SCIENCE (083) **Time: 03:00 Hrs**

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	QUESTIONS	marks
1	State True or False : “In Python, tuple is a mutable data type”.	1
2	Select the correct output of the code : S = "text#next" print(S.strip("t")) (A) ext#nex (B) ex#nex (C) text#nex (D) ext#next	1
3	What will be the output : print(16*5/4*2/5-8) a) -3.33 b) 6.0 c) 0.0 d) -13	1
4	Select the correct output of the code : S="Amrit Mahotsav @ 75" A=S.split(" ",2) print(A) (a) ('Amrit', 'Mahotsav', '@', '75') (b) ['Amrit', 'Mahotsav', '@ 75'] (c) ('Amrit', 'Mahotsav', '@ 75') (d) ['Amrit', 'Mahotsav', '@', '75']	1
5	Find the output: A=”MISSISSIPPI” print(A[:4]+’#’+A[-5:-1]) a) MISSI#SIPPI b) MISS#SIPPI	1

	c) MISS#IPPIS d) MISSI#PPIS	
6	What will be the output of the following code ? Tuple1=(10,) Tuple2=Tuple1*2 print(Tuple2) a) 20 b) (20,) c) (10,10) d) Error	1
7	What will be output of the following code: d1={1:2,3:4,5:6} d2=d1.get(3) print(d2) a) 4 b)3 c) 5 d) 6	1
8	Select the output of the code: s = “Bring it on” l = s.split() s_new = “#”.join([l[0].lower(), l[1], l[2].title()]) print(s_new) a) bring#it#ON b) bring#it#on c) Bring#it#On d) bring#it#On	1
9	If a table which has one Primary key and two candidate keys. How many Alternate keys will this table have? (A) 1 (B) 2 (C) 3 (D) 4	1
10	Which of the following modes in Python creates a new file, if file does not exist and overwrites the content, if the file exists ? (a) r+ (b) r (c) w (d) a	1
11	State whether the following statement is True or False: While handling exceptions in python name of the exception has to be compulsorily added with except clause	1
12	What will be the output of the following code? c = 10 def add(): global c c = c + 5 print(c,end='#') add() c=12	1

	print(c,end='%') (A) 15%12# (B) 15%12# (C) 15#12% (D) 12%15#	
13	_____ is used in pattern matching with (% , _) in where clause to put condition	1
14	Fill in the blank : _____ statement of SQL is used to insert new records in a table. (a) ALTER (b) UPDATE (c) INSERT (d) CREATE	1
15	In which datatype the value stored is not padded with spaces to fit the specified length, instead it only take up the space they need to store the data. (A) DATE (B) VARCHAR (C) FLOAT (D) CHAR	1
16	Which aggregate function will return cardinality of the table (a) sum() (b) count() (c) count(*) (d) max()	1
17	Which protocol is a set of rules for transmitting data over the internet, and is the basis for the World Wide Web: (a) pop (b) http (c) ftp (d) smtp	1
18	Ethernet card is also known as : (a) LIC (b) NIC (c) MIC (d) OIC	1
19	Fill in the blank : In _____ switching, before a communication starts, a dedicated path is identified between the sender and the receiver. (a) Packet (b) Graph (c) Circuit (d) Plot	1
	Q20 and Q21 are Assertion(A) and Reason(R) 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	

20	Assertion (A): CSV module allows to write a single record into each row in CSV file using writerow() function. Reason (R): The writerow() function creates header row in csv file by default.	1
21	Assertion (A): A SELECT command in SQL can have both WHERE and HAVING clauses. Reasoning (R): WHERE and HAVING clauses are used to check conditions, therefore, these can be used interchangeably.	1
	SECTION B	
22	(i) How is list is different from tuple in python? (ii) To which data type partition function covert the string.	2
23	Give two examples of each of the following: (I)logical operators (II) Relational operators	2
24	Consider the following list L1 and write Python statement for the following questions: L1=[‘english’,’physics’,’chemistry’,’cs’,’biology’] (i) (A) To insert subject “maths” as last element or (B) To display the list in reverse alphabetical order (ii) (A) To remove the first element of list Or (B) To Find the index position of element ‘cs’	2
25	What possible outcome will be produced when the following code is executed? import random value=random.randint(0,3) fruit=["APPLE","ORANGE","MANGO","GRAPE"] for i in range(value): print(fruit[i],end='##') a) APPLE## b) APPLE##ORANGE## c) APPLE## ORANGE##GRAPE## d) ORANGE##MANGO##APPLE##	2
26	Rewrite the following code in Python after removing all syntax error(s) and underline each correction done in the code . define fun1(): 30 = num for k range(0,num): if k%4=0 : print(k*4) else: print(k+3)	2
27	(i) A) What constraint should be applied on a table column so that duplicate values are not allowed in that column, but NULL is allowed. OR B) What constraint should be applied on a table column so that NULL is not allowed in that column, but duplicate values are allowed	2

	(II) A) Write an SQL command to remove the Primary Key constraint from a table, named MOBILE. M_ID is the primary key of the table. OR B) Write an SQL command to make the column M_ID the Primary Key of an already existing table, named MOBILE.	
28	i) Expand the following : a) SMTP b) VoIP ii) Give one disadvantage of Star topology OR i) What is a web browser ? ii) Define the term Telnet	2
	SECTION C	
29	Write a function in Python to count the number of lines in a text fie 'EXAM.txt' which start with an alphabet 'T' . OR Write a function in Python that count the number of "can" words present in a text file "DETAILS.txt"	3
30	Thushar received a message(string) that has upper case and lower-case alphabet. He want to extract all the upper case letters separately .Help him to do his task by performing the following user defined function in Python: a) Push the upper case alphabets from the string into a STACK b) Pop and display the content of the stack. For example: If the message is "All the Best for your Pre-board Examination" The output should be : E P B A Or Consider a list named Nums which contains random integers. Write the following user defined functions in Python and perform the specified operations on a stack named BigNums. (i) PushBig () : It checks every number from the list Nums and pushes all such numbers which have 5 or more digits into the stack, BigNums. (ii) PopBig () : It pops the numbers from the stack, BigNums and displays them. The function should also display "Stack Empty" when there are no more numbers left in the stack. For example: If the list Nums contains the following data : Nums = [213,10025, 167, 254923, 14, 1297653, 31498, 386 ,92765] Then on execution of PushBig () , the stack BigNums should store : [10025, 254923, 1297653, 31498, 92765] And on execution of PopBig () , the following output should be displayed : 92765 31498 1297653 254923 10025 Stack Empty	3

31	Predict the output of the Python code given below:
	def calculate(str):
	text="
	x=range(len(str)-1)
	for i in x:
		3

```
        if str[i].isupper():
            text+=str[i]
        elif str[i].islower():
            text+=str[i+1]
        else:
            text+='@'
    return text
start='Pre-board Exam'
final=calculate(start)
print(final)
```

OR

Predict the output of the following code :

```
def Total (Num=10):
    Sum=0
    for C in range(1,Num+1):
        if C%2!=0:
            continue
        Sum+=C
    return Sum
print(Total(4),end="$")
print(Total(),end="@")
```

SECTION D

32 Consider the table BOOK as given below — 4

Book_id	Book_name	Author_name	Publisher	Price	Quantity
C0001	Fast Cook	Lata Kapoor	EPB	355	5
F0001	The Tears	William Hopkins	First Publ	650	20
T0001	My First c++	Brain & Brooke	EPB	350	10
T0002	C++ Brain works	A.W. Rossaine	TDH	350	15
F0002	Thunderbolts	Anna Roberts	First Publ	750	50

The table contains many more records than shown here.

(A) Write the following queries:

i. To show book name, Author name and price of books of **"First Publ"** Publisher
ii. To list the names of those books whose name starts with F
iii. To Display the names and price from books in ascending order of their prices.
iv. To increase the price of all books of EPB publishers by 50.

OR

(B) Write the output:

i. Select Publisher, sum(quantity) as total_quantity from book group by Publisher;
ii. Select Book_name, Author Name from book where author like '%Kapoor%';
iii. Select * from book where price between 500 and 1000;
iv. Select count(*) from book;

33 A csv file " record.csv " contains the data . Each record consists of a list with field elements as empid, name and sal to store employee id, employee name and employee salary respectively. 4

Write user defined functions s in Python that defines the following:
(i) ADD() – To accept and add data of an employee to a CSV file 'record.csv'.
(ii) COUNTR() – To count the number of records present in the CSV file named 'record.csv' whose salary is more than 100000.

34 Aman has been entrusted with the management of some Institution's Database. He needs to access some information from FACULTY and COURSES tables for a survey analysis. Help him extract the following information by writing the desired SQL queries as mentioned below. 4

Teacher

T_ID	Name	Age	Department	Date_to_join	Salary	Gender	P_ID
1	Jugal	34	Computer Sc.	10/01/2017	12000	M	3
2	Sharmila	31	History	24/03/2008	20000	F	1
3	Sandeep	32	Mathematics	12/12/2016	30000	M	2
4	Sangeeta	35	History	01/07/2015	40000	M	1
5	Rakesh	42	Mathematics	05/09/2007	25000	M	2
6	Shyam	50	History	27/06/2008	30000	M	1
7	Shiv Om	44	Computer Sc.	25/02/2017	30000	M	3
8	Shalakha	33	Mathematics	31/07/2018	20000	F	2

Posting

P_ID	DEPARTMENT	PLACE
1	History	Agra
2	Mathematics	Raipur
3	Computer Science	Delhi

(i) To list the names and age of female teachers who are in Mathematics department.
(ii) To display the name teachers who are posted in Agra
(iii) To display the max(date_to_join), min(date_to_join) of teachers
(iv)

(A) To display name, bonus, department for each teacher where bonus is 10% of salary

Or

(B) To display the Cartesian Product of these two tables.

<table>
<tr><td>35</td><td>Arushi has created a table named student in MYSQL database, School:
•rno(Roll number)- integer
• name(Name) - string
• clas (Clas) – string
• marks – float
Note the following to establish connectivity between Python and MySQL: • Username - root • Password - 12345 • Host - localhost
i) Arushi, now wants to add record of student by taking data from user. Help arushi to write the program in Python.
ii) Also write code to display the total number of records present in the table.</td><td>4</td></tr>
<tr><td></td><td>SECTION E</td><td></td></tr>
<tr><td>36</td><td>A binary file “STUDENT.DAT” has structure [admission_number, Name, Percentage].
(I) Write a function to input the data of a candidate and append it in a binary file.
(ii)) Write a function to increase the percentage of student to 95% whose admission number is input by the user.</td><td>5</td></tr>
<tr><td>37</td><td>Oxford college, in Delhi is starting up the network between its different wings. There are four Buildings named as SENIOR, JUNIOR, ADMIN and HOSTEL as shown below:

JUNIOR SENIOR ADMIN HOSTEL
The distance between various building is as follows:
<table><tr><td>ADMIN TO SENIOR</td><td>200 m</td></tr><tr><td>ADMIN TO JUNIOR</td><td>150 m</td></tr><tr><td>ADMIN TO HOSTEL</td><td>50 m</td></tr><tr><td>SENIOR TO JUNIOR</td><td>250 m</td></tr><tr><td>SENIOR TO HOSTEL</td><td>350 m</td></tr><tr><td>JUNIOR TO HOSTEL</td><td>350 m</td></tr></table>Number of computer in each building is :
<table><tr><td>SENIOR</td><td>130</td></tr><tr><td>JUNIOR</td><td>80</td></tr><tr><td>ADMIN</td><td>160</td></tr><tr><td>HOSTEL</td><td>50</td></tr></table>
i) Suggest the cable layout of connections between the buildings.
ii) Suggest the most suitable place (i.e., building) to house the server of this college, provide a suitable reason.
iii) Is there a requirement of a repeater in the given cable layout? Why/ Why not?
iv) Suggest the placement of hub/switch with justification.
v) The organisation also has inquiry office in another city about 50-60 km away in hilly region. Suggest the suitable transmission media to interconnect to college and inquiry office out of the following: a. Fibre optic cable b. Microwave c. Radio wave
or
What would be your recommendation for enabling live visual communication between the Admin Office at the Delhi campus and the Mumbai Branch Office from the following options:</td><td>5</td></tr>
</table>

	a) Video Conferencing b) Email c) Telephony d) Instant Messaging	