

केन्द्रीय विद्यालय संगठन तिनसुकिया संभाग

KENDRIYA VIDYALAYA SANGATHAN TINSUKIA REGION

PRE-BOARD EXAMINATION 2025-26

विषय/Subject :- COMPUTER SCIENCE

विषय कोड (सीबीएसई)/Subject Code(CBSE):- 083

कक्षा/ Class:-बारहवीं-XII

प्रश्न पत्र कोड /Q.P. Code:- QP12ACS01PB25

निर्धारित समय/Time Allowed:- 3 घंटे/Hours

अधिकतम अंक/Maximum Marks :- 70

सामान्य निर्देश/ GENERAL INSTRUCTIONS:-

निम्नलिखित निर्देशों को ध्यानपूर्वक पढ़िए एवं उनका पालन कीजिये :

Read the following instructions carefully and follow them:

- (i) This question paper contains 37 questions.
- (ii) All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
- (iii) The paper is divided into 5 Sections- A, B, C, D and E.
- (iv) Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- (v) Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- (vi) Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- (vii) Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- (viii) Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- (ix) All programming questions are to be answered using Python Language only.
- (x) In case of MCQ, text of the correct answer should also be written.

प्रश्न क्र./ Q. No.	Section- A (1 x 21 = 21 Marks)	अंक/ Marks
1.	State True or False: The Python statement <code>print('Alpha'+1)</code> is example of "TypeError" Error	1
2.	What will be the output of the following Python expression? <code>x = 5</code> <code>y = 10</code> <code>result = (x ** 2 + y) // x * y - x</code> <code>print(result)</code> (A) 0 (B) -5 (C) 65 (D) 265	1
3.	What will be the output : <code>print(16*5/4*2/5-8)</code> a) -3.33 b) 6.0 c) 0.0 d) -13	1
4.	What is the output of following code snippet? <code>country = "GlobalNetwork"</code>	1

	<pre>result = "-".join(country.split("o")).upper() print(result)</pre> (A) GL-BALNETW-RK (B) GL-BA-LNET-W-RK (C) GL-BA-LNET-W-RK (D) GL-BA-LNETWORK	
5.	Identify the output of the following code snippet: <pre>text = "The_quick_brown_fox" index = text.find("quick") result = text[:index].replace("_", "") + text[index:].upper() print(result)</pre> (A) Thequick_brown_fox (B) TheQUICK_BROWN_FOX (C) TheQUICKBROWNFOX (D) TheQUICKBROWN FOX	1
6.	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
7.	Which device is primarily used to amplify and regenerate signals in a network, allowing data to travel longer distances? (A) Switch (B) Router (C) Repeater (D) Bridge	1
8.	What will be the output of following python code- <pre>i = 0 while i < 5: i += 1 if i == 3: continue print(i, end=" ") if i == 4: break</pre> a) 1 2 3 4 5 b) 1 2 4 c) 1 2 3 4 d) 1 2	1
9.	Which SQL command can modify the structure of an existing table, such as adding or removing columns? (A) ALTER TABLE (B) UPDATE TABLE (C) MODIFY TABLE (D) CHANGE TABLE	1
10.	Which communication technique establishes a dedicated communication path between two devices for the entire duration of a transmission, ensuring a continuous and consistent connection?	1
11.	Consider the following statement: <pre>SELECT emp_no, name FROM emp _____ designation;</pre>	1

	Which of the following option will be used to display the employee number and names of similar designations together? (A) FIELD() (B) GROUP BY (C) ORDER BY (D) Both (B) and (C)	
12.	Given the following Tuple Tup= (10, 20, 30, 50) Which of the following statements will result in an error ? (a) print (Tup[0]) (b) Tup.insert (2, 3) (c) print (Tup [1:2]) (d) print (len (Tup))	1
13.	Which aggregate function will return cardinality of the table (a) sum() (b) count() (c) count(*) (d) max()	1
14.	What will be the output of the following code? <pre> a = 15 def update(x): global a a += 2 if x%2==0: a *= x else: a //= x a=a+5 print(a, end="\$") update(5) print(a) </pre> (A) 20\$11 (B) 15\$4 (C) 20\$4 (D) 22\$4	1
15.	Ethernet card is also known as : (A) LIC (B) MAC (C) NIC (D) OIC	1
16.	which datatype occupies memory as per entered string not fixed length? (A) DATE (B) VARCHAR (C) CHAR (D) None of these	1
17.	<pre> fruits = ["apple", "banana", "cherry", "date"] fruits.append("elderberry") fruits.remove(fruits[1]) fruits.insert(2, "fig") print(fruits[1:5]) </pre> a) ['banana', 'cherry', 'date', 'elderberry'] b) ['cherry', 'fig', 'date', 'elderberry'] c) ['apple', 'fig', 'date', 'elderberry'] d) ['cherry', 'date', 'elderberry']	1

18.	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
19.	Which function is used to generate a random float number between 0 and 1? a) random() b) randint() c) uniform() d) choice()	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): The get() method in Python dictionary can be used to safely access a key that may not exist. Reason (R): Using d[key] will raise a KeyError if the key is not present in the dictionary.	1
21.	Assertion (A): A GROUP BY clause in SQL can be used without any aggregate functions. Reasoning (R): The GROUP BY clause is used to group rows that have the same values in specified columns and must always be paired with aggregate functions.	1
	Section- B (2 x 7 = 14 Marks)	
22.	Find the output of following code segment for i in range(1, 6): if i == 3: continue if i == 5: break print(i, end=" ") or Find the output of following code segment x = 5 # int y = 2.0 # float z = "3" # Explicit conversion a = x + int(z) # Implicit conversion b = x + y c = y + float(z) d = x / y + int(z) print(c) print(d)	2
23.	Consider the following Python code snippet: a = [1, 2, 3]	2

	<pre> b = a a.append(4) c = (5, 6, 7) d = c + (8,) </pre> a. Explain the mutability of a and c in the context of this code. b. What will be the values of b and d after the code is executed?	
24.	What possible outcome will be produced when the following code is executed? <pre> import random value=random.randint(0,3) fruit=["APPLE","ORANGE","MANGO","GRAPE"] for i in range(value): print(fruit[i],end='##') </pre> a) APPLE## b) APPLE##ORANGE## c) APPLE## ORANGE##GRAPE## d) ORANGE##MANGO##APPLE## or write python statement to Select a random element from the list ['red', 'green', 'blue', 'yellow']	2
25.	(I) A) Write the SQL command to see the list of tables in a database. OR B) Write the SQL command to insert a new record in the table. (II) A) What constraint should be applied on a table column so that NULL is not allowed in that column, but duplicate values are allowed. OR B) What constraint should be applied on a table column so that duplicate values are not allowed in that column, but NULL is allowed.	2
26.	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
27.	Rewrite the following code in Python after removing all syntax error(s) and underline each correction done in the code . <pre> define fun1(): 30 = num for k range(0,num): if k%4=0 : print(k*4) else: print(k+3) </pre> or predict the output of following code snippet s='WELCOME' l= [10,21,33,44] d={ } for I in range (len(s)): if i%2==0:	2

	<pre> d[L.pop()]=s[i] else d[L.pop()]=s[i+2] for k,v in d.items(): print (k,v,sep="**") </pre>	
28.	Write a Python program to demonstrate implicit type conversion when performing an operation between int and float. OR Write a program to convert a string "45.67" into a float explicitly and perform an addition with an integer.	2
	Section- C (3 x 3 = 9 Marks)	
29.	Write a function COUNT() in Python to read from a text file 'Gratitude.txt' and display the count of the letter 'e' in each line Example: If the file content is as follows: Gratitude is a humble heart's radiant glow, A timeless gift that nurtures and bestows. It's the appreciation for the love we're shown, In moments big and small, it's truly known The COUNT() function should display the output as: Line 1 : 3 Line 2 : 4 Line 3 : 6 Line 4 : 1 OR Write a function Start_with_I() in Python, which should read a text file 'Gratitude.txt' and then display lines starting with 'I'. Example: If the file content is as follows: Gratitude is a humble heart's radiant glow, A timeless gift that nurtures and bestows. It's the appreciation for the love we're shown, In moments big and small, it's truly known Then the output should be It's the appreciation for the love we're shown, In moments big and small, it's truly known.	3
30.	Predict the output of the Python code given below: <pre> def my_city (L,N): for i in range(0,N): if len(L)>4: L[i]=L[i]+L[i] else: L[i]=L[i] sub=['Delhi','Jaipur','Agra','Surat','Mumbai','Bhopal'] my_city(sub,6) print(sub) </pre>	3
31.	Write a function in python, Push(Employee) and Pop(Employee) to add a new Employee and delete a Employee from a List of Employee Names, considering them to act as push and pop operations of the Stack data structure. Or Write the definition for the following user defined functions	3

	(i) push_positive(N): This function takes a list of integers as parameter ‘N’ and pushes all positive integers into a Stack named ‘pos_int’ defined in global scope. (ii) pop_positive(): This function pops the topmost number from the stack ‘pos_int’ defined in global scope and returns it. If the stack is already empty, the function should display “Empty”. (iii) disp_positive(): This function displays all the elements of the stack ‘pos_int’ defined in global scope without deleting them. If the stack is empty, the function should display “None”. For example: If the integers in the list N are: [-3, 7, -5, 9, 0] Then the stack pos_int should store: [7, 9, 0] Disp_pos should display 7,9,0 none																																				
	Section- D (4 x 4 = 16 Marks)																																				
32.	Write the output of the queries (i) to (iv) based on the table, TECH_COURSE given below: Table: TECH_COURSE <table><tr><th>CID</th><th>CNAME</th><th>FEES</th><th>STARTDATE</th><th>TID</th></tr><tr><td>C201</td><td>Animation and VFX</td><td>12000</td><td>2022-07-02</td><td>101</td></tr><tr><td>C202</td><td>CADD</td><td>15000</td><td>2021-11-15</td><td>NULL</td></tr><tr><td>C203</td><td>DCA</td><td>10000</td><td>2020-10-01</td><td>102</td></tr><tr><td>C204</td><td>DDTP</td><td>9000</td><td>2021-09-15</td><td>104</td></tr><tr><td>C205</td><td>Mobile Application Development</td><td>18000</td><td>2022-11-01</td><td>101</td></tr><tr><td>C206</td><td>Digital marketing</td><td>16000</td><td>2022-07-25</td><td>103</td></tr></table> A) Write the following queries: (i) To display the details of the courses with names starting with ‘D’. (ii) To display the fees of courses in descending order. (iii) Display the sum of fees of all the courses for which TID is not null. (iv) To display the course name with fees less than 15000. OR B) Write the output of following queries: (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;	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	4
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33.	Write a program in Python that defines and calls the following user defined functions: a) ADD() – To accept and add data of an employee to a CSV file ‘record.csv’. Each record consists of a list with field elements as empid, name and mobile to store employee id, employee name and employee salary respectively. b) COUNTR() – To count the number of records present in the CSV file named ‘record.csv’.	4																																			
34.	Consider the tables GAMES and PLAYERS given below : Table : GAMES <table><tr><th>GCode</th><th>GameName</th><th>Type</th><th>Number</th><th>PrizeMoney</th></tr></table>	GCode	GameName	Type	Number	PrizeMoney	4																														
GCode	GameName	Type	Number	PrizeMoney																																	

	101	Carrom Board	Indoor	2	5000
	102	Badminton	Outdoor	2	12000
	103	Table Tennis	Indoor	4	Null
	104	Chess	Indoor	2	9000
	105	Lawn Tennis	Outdoor	4	25000
	Table : PLAYERS				
	PCode	Name	GCode		
	1	Nabi Ahmad	101		
	2	Ravi Sahai	108		
	3	Jatin	101		
	4	Nazneen	103		
	Write SQL queries for the following : (i) Display the game type and average number of games played in each type. (ii) Display prize money, name of the game, and name of the players from the tables Games and Players. (iii) Display the types of games without repetition. (iv) Display the name of the game and prize money of those games whose prize money is known. Or display the game name, prize money in descending order.				
35.	Ankita wants to write a program in Python to delete the record of a candidate “Raman” from the table named Placement in MySQL database- Agency: The table Placement in MySQL contains the following attributes : CName – String Dept – String Place – String Salary – integer Note the following to establish connectivity between Python and MySQL : · Username – root · Password – job · Host – localhost Help Ankita to write the program in Python for the above mentioned task.				4
	Section- E (2 x 5 = 10 Marks)				
36.	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.				5
37.	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: 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.				5

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:

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

JUNIOR

SENIOR

ADMIN

HOSTEL

The distance between various building is as follows:

ADMIN TO SENIOR	200 m
ADMIN TO JUNIOR	150 m
ADMIN TO HOSTEL	50 m
SENIOR TO JUNIOR	250 m
SENIOR TO HOSTEL	350 m
JUNIOR TO HOSTEL	350 m

Number of computer in each building is :

SENIOR	130
JUNIOR	80
ADMIN	160
HOSTEL	50