

**KENDRIYA VIDYALAYA SANGATHAN ::HYDERABAD REGION**  
**SECOND PRE-BOARD EXAMINATION 2023-24**  
**COMPUTER SCIENCE (083)**

**Class: XII**

**Time Allowed: 03:00 Hrs.**

**Max Marks:70**

**General Instructions:**

- (a) Please check this question paper contains 35 questions.
- (b) The paper is divided into 4 Sections- A, B, C, D and E.
- (c) Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- (d) Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- (e) Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- (f) Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
- (g) Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
- (h) All programming questions are to be answered using Python Language only.

Q.No	Question	Marks
<b>SECTION A</b>		
1.	State True or False: Python Keywords cannot be variables.	1
2.	What will be the datatype of d, if d = (15) ? (a) int (b) tuple (c) list (d) string	1
3.	What will be the output of the following expressions: a) 2**3**2 b) (2**3)**2 a) a: 512 b. 64 b) a: 64 b. 512 c) a: 1024 b. 64 d) a: 64 b. 64	1
4.	Table A has 3 rows and 4 columns and Table B has 5 rows and 6 columns. What is the degree and cardinality of Cartesian product of A and B? a) Degree is 15 and Cardinality is 15 b) Degree is 10 and Cardinality is 10 c) Degree is 10 and Cardinality is 15 d) Degree is 15 and Cardinality is 10	1
5.	What will be output of the following code: d1={1:2,3:4,5:6} d2=d1.get(3,5) print(d2) a) 3 b) 4 c) 5 d) Error	1
6.	Consider the given expression: 3 and 5<15 or 3<13 and not 12<2 Which of the following is the correct value of the expression? a) True b) False c) None d) NULL	1
7.	What will be the output of the following code:- s="one two three" s=s.split() print(s) a) ['one', 'two', 'three'] b) ('one', 'two', 'three') c) [one, two, three] d) None	1
8.	Hanu wants to connect 10 computers in her office. What is the type of network? a) LAN b) WAN c) PAN d) FAN	1
9.	Consider the statements given below and then choose the correct output from the given options: s="KVS@CBSE 2023" print(s[-2:2:-2]) a) 22EB@ b) 2023@kvs c) KVS@2023 d) 30 SCS	1
10.	Which of the following MySQL command/clause is used to sort the data in a table a) SORT b) ASCENDING c) ORDER BY d) DROP	1

11.	Which of the following device is responsible for signal boosting a) Repeater      b) Router      c) Switch      d) Modem	1
12.	_____ function returns the current position of file pointer a) tell()      b) seek()      c) first()      d) last()	1
13.	In the URL www.kvsangathan.nic.in , _____ tells the type of website a) www      b) .in      c) kvsangathan      d) .nic	1
14.	Which of the following is not an Aggregate function. a) COUNT      b) MIN      c) MAX      d) DISTINCT	1
15.	What will be the output of the following code: t=(2,3,[4,5,6],7) t[2]=4 print(t) a) (2,3,4,7)      b) (2,3,[4],7)      c) Type error      d) None	1
16.	What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? import random points=[30,50,20,40,45] begin=random.randint(1,3) last=random.randint(2,4) for c in range(begin,last+1): print(points[c],"#",end='') (a) 20#50#30#    (b) 20#40#45    (c) 50#20#40#    (d) both (b) and (c)	1
	<b>Q 17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</b> (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	
17.	Assertion (A): CSV module allows to write a single record into each row in CSV file using write row() function. Reason (R): The write row() function creates header row in csv file by default.	1
18.	Assertion (A):- In Python, statement return [expression] exits a function. Reasoning (R):- Return statement passes back an expression to the caller. A return statement with no arguments is the same as return None.	1
<b>SECTION B</b>		
19.	i)      Expand the following terms: SMTP, URL ii)     Difference between HTML and XML <b>OR</b> i)      What is Band width? ii)     Define baud rate?	2
20.	Rewrite the program after correcting all the errors and underline each correction. n=int(input("Enter number:")) temp==n rev=0 While(n>0) dig=n%10 rev=rev*10+dig n=n//10 if(temp==rev): print(The number is a palindrome!) else: print("The number isn't a palindrome!")	2
21.	Predict output of the following code fragment – L=[12,23,18,9,17]	2

	<pre> for i in range(len(L)):     if(L[i]%3==0):         L[i]=0     else:         L[i]=1 print(L) </pre> <p style="text-align: center;">OR</p> <p>Write the output of the code given below:  book_dict = {"title": "You can win", "copies":15}  book_dict['author'] = "Shiv Khera"  book_dict['genre'] = "Motivation"  print(book_dict.items())</p>	
22.	<p>Mr. Avinash wants to create a table in MySQL for Employee (eid (Primary Key),  ename, salary)</p> <p style="text-align: center;">OR</p> <p>Write any two differences between DELETE and DROP commands</p>	2
23.	<p>Write a python statement for each of the following tasks using built-in functions/  methods only:  i)To add list of elements L2=[11,12,14] to existing list L1=[10,15].  ii)To make the elements in sorted manner.</p> <p style="text-align: center;">OR</p> <p>A list named stu_percentage stores the percentage of students of a class. Write  python command to import the required module and display the most common  percentage from the given list.</p>	2
24.	<p>Find output generated by the following code:</p> <pre> string="aabbcc" count=3 while True:     if string[0]=='a':         string=string[2:]     elif string[-1]=='b':         string=string[:2]     else:         count+=1         break print(string) print(count) </pre>	2
25.	<p>Find output generated by the following code:</p> <pre> def Compy(N1,N2=10):     return N1 &gt; N2 NUM= [10,23,14,54,32] for VAR in range (4,0,-1):     A=NUM[VAR]     B=NUM[VAR-1]     if VAR &gt; len(NUM)//2:         print(Compy(A,B),'#', end=' ')     else:         print(Compy(B),'%',end=' ') </pre>	2
<b>SECTION C</b>		
26.	<p>Write a Python program to count number of words in a given string that start  with vowels.</p>	3

27.	<p>Write the SQL command for the following on the basis of given table.</p> <p>Table: SPORTS</p> <table border="1" data-bbox="288 152 1369 443"> <thead> <tr> <th>StudentNo</th> <th>Class</th> <th>Name</th> <th>Game1</th> <th>Grade1</th> <th>Game2</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>7</td> <td>Sammer</td> <td>Cricket</td> <td>B</td> <td>Swimming</td> <td>A</td> </tr> <tr> <td>11</td> <td>8</td> <td>Sujit</td> <td>Tennis</td> <td>A</td> <td>Skating</td> <td>C</td> </tr> <tr> <td>12</td> <td>7</td> <td>Kamal</td> <td>Swimming</td> <td>B</td> <td>Football</td> <td>B</td> </tr> <tr> <td>13</td> <td>7</td> <td>Venna</td> <td>Tennis</td> <td>C</td> <td>Tennis</td> <td>A</td> </tr> <tr> <td>14</td> <td>9</td> <td>Archana</td> <td>Basketball</td> <td>A</td> <td>Cricket</td> <td>A</td> </tr> <tr> <td>15</td> <td>10</td> <td>Arpit</td> <td>Cricket</td> <td>A</td> <td>Athletics</td> <td>C</td> </tr> </tbody> </table> <p>i) Display the names of the students who have grade 'A' in either Game 1 or Game 2 or both.  ii) Display the number of students having the GRADE1 as 'A' in Game1.  iii) Display number of students in each class group.</p>	StudentNo	Class	Name	Game1	Grade1	Game2	Grade	10	7	Sammer	Cricket	B	Swimming	A	11	8	Sujit	Tennis	A	Skating	C	12	7	Kamal	Swimming	B	Football	B	13	7	Venna	Tennis	C	Tennis	A	14	9	Archana	Basketball	A	Cricket	A	15	10	Arpit	Cricket	A	Athletics	C	3
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15	10	Arpit	Cricket	A	Athletics	C																																													
28.	<p>Write a Python program to read the text file abc.txt and print only the lines that start with 's'</p> <p style="text-align: center;">OR</p> <p>Write a function in Python to read lines from a text file book.txt, to find and display the occurrence of the word 'are'. For example, if the content of the file is:  Books are referred to as a man's best friend. They are very beneficial for mankind and have helped it evolve. Books leave a deep impact on us and are responsible for uplifting our mood.  The output should be 3.</p>	3																																																	
29.	<p>a. Define the term Domain with respect to RDBMS. Give one example to support your answer.  b. What is the syntax of ALTER command in MySQL?  c. How to find referential integrity in MySQL?</p>	3																																																	
30.	<p>Write the following functions in Python:</p> <p>(i) Push (st, expression), where expression is a string containing a valid arithmetic expression with +, -, *, and / operators, and st is a list representing a stack. The function should push all the operators appearing in this expression into the stack st.</p> <p>(ii) Pop(st) to pop all the elements from the stack st and display them. It should also display the message 'Stack Empty' when the stack becomes empty.</p>	3																																																	
<b>SECTION D</b>																																																			
31.	<p>Write the SQL query commands based on following table:</p> <p><b>Table : Book</b></p> <table border="1" data-bbox="288 1615 1315 2051"> <thead> <tr> <th>Book_id</th> <th>Book name</th> <th>Author_name</th> <th>Publis her</th> <th>Price</th> <th>Type</th> <th>Quan tity</th> </tr> </thead> <tbody> <tr> <td>C0001</td> <td>Fast Cook</td> <td>Lata Kapoor</td> <td>EPB</td> <td>355</td> <td>Cookery</td> <td>5</td> </tr> <tr> <td>F0001</td> <td>The Tears</td> <td>William Hopkins</td> <td>First Publ</td> <td>650</td> <td>Fiction</td> <td>20</td> </tr> <tr> <td>T0001</td> <td>My First c++</td> <td>Brain &amp; Brooke</td> <td>FPB</td> <td>350</td> <td>Text</td> <td>10</td> </tr> <tr> <td>T0002</td> <td>C++ Brain works</td> <td>A.W. Rossaine</td> <td>TDH</td> <td>350</td> <td>Text</td> <td>15</td> </tr> <tr> <td>F0002</td> <td>Thunderbo lts</td> <td>Anna Roberts</td> <td>First Publ</td> <td>750</td> <td>Fiction</td> <td>50</td> </tr> </tbody> </table> <p>Write SQL query for (a) to (d)</p>	Book_id	Book name	Author_name	Publis her	Price	Type	Quan tity	C0001	Fast Cook	Lata Kapoor	EPB	355	Cookery	5	F0001	The Tears	William Hopkins	First Publ	650	Fiction	20	T0001	My First c++	Brain & Brooke	FPB	350	Text	10	T0002	C++ Brain works	A.W. Rossaine	TDH	350	Text	15	F0002	Thunderbo lts	Anna Roberts	First Publ	750	Fiction	50	4							
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F0002	Thunderbo lts	Anna Roberts	First Publ	750	Fiction	50																																													

	<p>a. To show book name, Author name and price of books of First Publ Publisher</p> <p>b. To list the names from books of text type</p> <p>c. To Display the names and price from books in ascending order of their prices.</p> <p>d. To increase the price of all books of EPB publishers by 50.</p>	
32.	<p>Anusha of class 12 is writing a program to create a CSV file “user.csv” which will contain user name and password for some entries. She has written the following code.</p> <p>As a programmer, help her to successfully execute the given task.</p> <pre>import _____ # Line 1 def addCsvFile(UserName,PassWord): # to write / add data into the CSV file     f=open(' user.csv','_____') # Line 2     newFileWriter = csv.writer(f)     newFileWriter.writerow([UserName,PassWord])     f.close() #csv file reading code def readCsvFile(): # to read data from CSV file     with open(' user.csv','r') as newFile:         newFileReader = csv._____(newFile) # Line 3         for row in newFileReader:             print (row[0],row[1])         newFile._____ # Line 4 addCsvFile('Arjun','123@456') addCsvFile('Arunima','aru@nima') addCsvFile('Frieda','myname@FRD') readCsvFile()</pre> <p>(a) Name the module he should import in Line 1.</p> <p>(b) In which mode, Anuj should open the file to add data into the file</p> <p>(c) Fill in the blank in Line 3 to read the data from a csv file.</p> <p>(d) Fill in the blank in Line 4 to close the file.</p>	4
<b>SECTION E</b>		
33.	<p>BeHappy Corporation has set up its new centre at Noida, Uttar Pradesh for its office and web-based activities. It has 4 blocks of buildings.</p> <div style="border: 1px solid black; padding: 10px; margin: 20px auto; width: fit-content;"> <p style="text-align: center;"><b>BeHappy Corporation</b></p> <div style="display: flex; justify-content: space-around; align-items: center; height: 150px;"> <div style="border: 1px solid black; padding: 5px; width: 80px; height: 30px; display: flex; align-items: center; justify-content: center;">Block A</div> <div style="border: 1px solid black; padding: 5px; width: 80px; height: 30px; display: flex; align-items: center; justify-content: center;">Block B</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; height: 30px;"> <div style="border: 1px solid black; padding: 5px; width: 80px; height: 30px; display: flex; align-items: center; justify-content: center;">Block C</div> <div style="border: 1px solid black; padding: 5px; width: 80px; height: 30px; display: flex; align-items: center; justify-content: center;">Block D</div> </div> </div>	5

**Distance between the various blocks is as follows:**

A to B	40 m
B to C	120 m
C to D	100 m
A to D	170 m
B to D	150 m
A to C	70m

**Numbers of computers in each block**

Block A	25
Block B	50
Block C	12 5
Block D	10

Suggest the most suitable location to install the main server of this institution to get efficient connectivity

- a. Suggest and draw the cable layout to efficiently connect various blocks of buildings within the Noida centre for connecting the digital devices
- b. Suggest the placement of the following device with justification
  - i.Repeater
  - ii. Hub/Switch
- c. Which kind of network (PAN/LAN/WAN) will be formed if the Noida office is connected to its head office in Mumbai?

34.

A binary file data.dat needs to be created with following data written it in the form of Dictionaries.

EID	ENAME	SALARY
101	KARTHIK	50000
102	PRUDHVI	55000
103	MANASA	60000

Write the following functions in python accommodate the data and manipulate it.

- a) A function insert() that creates the data.dat file in your system and writes the three dictionaries.
- b) A function() read() that reads the data from the binary file and displays the dictionaries whose SALARY is greater than 50000.

OR

- a. What is the difference between w (write) mode and a (append) mode
- b. Write a Program in Python that defines and calls the following user defined functions: (i) 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.

2+3

1+4

	(ii) COUNTR() – To count the number of records present in the CSV file named 'record.csv'	
35.	<p>a. What is the difference between UNIQUE KEY and PRIMARY KEY?</p> <p>b. Arushi has created a table named <b>student</b> in MYSQL database, <b>School</b>:</p> <ul style="list-style-type: none"> <li>• rno(Roll number )- integer</li> <li>• name(Name) - string</li> <li>• clas (Clas) – string</li> <li>• marks – float</li> </ul> <p>Note the following to establish connectivity between Python and MySQL:</p> <ul style="list-style-type: none"> <li>• Username - root • Password - 12345</li> <li>• Host - localhost</li> </ul> <p>ii) Arushi, now wants to add record of student by taking data from user. Help arushi to write the program in Python.</p> <p style="text-align: center;">OR</p> <p>a. Define Alternate Key</p> <p>b. Ravi has created a table named employee in MYSQL database, orgn:</p> <ul style="list-style-type: none"> <li>• eid(Roll number )- integer</li> <li>• ename(Name) - string</li> <li>• DOJ (Date of joining) – Date</li> <li>• Salary – float</li> </ul> <p>Note the following to establish connectivity between Python and MySQL:</p> <ul style="list-style-type: none"> <li>• Username - root • Password - mysql</li> <li>• Host - localhost</li> </ul> <p>Ravi, now wants to display the records of employees whose salary is more than 25000. Help Ravi to write the program in Python.</p>	<p>2+3</p> <p>2+3</p>

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