

Roll No.

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**Candidates must write the Set No. on the title page of the Answer Sheet.**

**DAV PUBLIC SCHOOLS, ODISHA ZONE**  
**HALF YEARLY EXAMINATION (2023-24)**

- 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 35 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 this period.

**CLASS-XII**

**SUB: COMPUTER SCIENCE (083)**

**Time Allowed: 3 Hours****Maximum Marks : 70****General Instructions:**

- **Please check this question paper contains 35 questions.**
- **The paper is divided into 5 Sections- A, B, C, D and E.**
- **Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.**
- **Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.**
- **Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.**
- **Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.**
- **Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.**
- **All programming questions are to be answered using Python Language only.**
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<b>Section-A</b>		
1	State True or False. “A keyword can be used as an identifier name.”	1
2	Suppose , <code>str1 = "welcome"</code> All the following expressions produce the same result except one. Identify it.  (a) <code>str1[::-6]</code> (b) <code>str1[::-1][::-6]</code> (c) <code>str1[::-6]</code> (d) <code>str1[0] + str1[-1]</code>	1

3	<p>Given the following dictionaries</p> <pre>dict_exam={"Exam":"SSCE", "Year":2023} dict_result={"Total":600, "Pass_Marks":198}</pre> <p>Which statement will merge the contents of both dictionaries?</p> <p>(a) dict_exam.update(dict_result)      (b) dict_exam + dict_result (c) dict_exam.add(dict_result)      (d) dict_exam.merge(dict_result)</p>	1
4	<p>What will be the output of the following statement: ((-33 // 13)*(35 % -2) * 15 / 3)</p> <p>(a) 10.0      (b) -15.0      (c) 15.0      (d) -10.0</p>	1
5	<p>What is the output of the following code?</p> <pre>L1=[61,90,37,98,20] L2=[] L1.sort() L2.append(L1.pop()) print(L1+L2)</pre> <p>(a) [20, 37, 61]      (b) [61,90,37,98,20, 98] (c) [20, 37, 61, [90, 98]]      (d) [20, 37, 61, 90, 98]</p>	1
6	<p>A List is declared as L = ['ONE', 'TWO', 'THREE']. What will be the output of the statement ?      print(max(L))</p> <p>(a) 'ONE'      (b) 'THREE'      (c) 'TWO'      (d) 5</p>	1
7	<p>Consider the following function headers. Identify the correct statement: -</p> <p>(a) def calcu(a=1,b=2,c):      (b) def calcu (a=1,b,c=3): (c) def calcu (a=1,b=2,c=3):      (d) def calcu (a=1,b,c):</p>	1
8	<p>What will be the output of the following code :</p> <pre>def calculate(a,b):     return a+b , a-b res = calculate(7,7) print(res)</pre> <p>(a) (14, 0)      (b) [14, 0]      (c) 14      (d) 0</p>	1
9	<p>To print the 4th line from a text file, which of the following statement is true?</p> <p>(a) dt = f.readlines(); print(dt[3])      (b) dt=f.read(4); print(dt[3]) (c) dt=f.readline(4); print(dt[3])      (d) All of these</p>	1
10	<p>A text file student.txt is stored in the storage device. Identify the correct option out of the following options to open the file in read mode.</p> <p>i. myfile = open('student.txt','rb') ii. myfile = open('student.txt','w')</p>	1

	<p>iii. myfile = open('student.txt','r')</p> <p>iv. myfile = open('student.txt')</p> <p>(a) only i                                  (b) both i and iv</p> <p>(c) both iii and iv                        (d) both i and iii</p>	
11	<p>Which of the following statement(s) is/are incorrect in the context of binary files?</p> <p>(a) Information is stored in the same format in which the information is held in memory.</p> <p>(b) No character translation takes place</p> <p>(c) Every line ends with a new line character</p> <p>(d) pickle module is used for reading and writing</p>	1
12	<p>Which of the following can be used to read the next line from a file object fobj ?</p> <p>(a)fobj.read(2)                        (b)fobj.readline()</p> <p>(c)fobj.read()                         (d)fobj.readline(2)</p>	1
13	<p>Which statement is used to change the file pointer to an offset value from the beginning of a file with file object Fp ?</p> <p>(a) Fp.seek (offset, 1)                    (b) Fp.seek (offset, 0)</p> <p>(c) Fp.seek (offset, 2)                    (d) None of these</p>	1
14	<p>Assume that, a binary file Employee.dat contains the record of 10 employees. If you want to add another employee information E, into the file as 11<sup>th</sup> record, which of the following statement is correct?</p> <p>(a) with open('Employee.dat','w') as ob:</p> <p>        pickle.dump(E,ob)</p> <p>(b) with open('Employee.dat','wb') as ob:</p> <p>        pickle.dump(E,ob)</p> <p>(c) with open('Employee.dat','ab') as ob:</p> <p>        pickle.dump(E,ob)</p> <p>(d) with open('Employee.dat','wb+') as ob:</p> <p>        pickle.dump(E,ob)</p>	1
15	<p>Predict the output of the following Python code.</p> <pre>V = list() V.append('Cha') V.append('Bala') V1 = V.pop() V2 = V.pop() V3 = V.pop() print(V1, V2, V3)</pre> <p>(a) ['Cha', 'Bala']                        (b) ChaBala</p> <p>(c) 'Cha' 'Bala'                            (d) IndexError: pop from empty list</p>	1

16	<p>Choose correct output for the following sequence of operations. push(5), push(8), pop(), push(2), push(5), pop(), push(1), pop()</p> <p>(a) 85251            (b) 85521 (c) 2551            (d) 521</p>	1
<p>Q17 and Q18 are <b>ASSERTION</b> and <b>REASONING</b> based questions. Mark the correct choice as:</p> <p>(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.</p>		
17	<p><b>Assertion (A):</b> The local and global variables declared with the same name in the function are treated same by the Python interpreter.</p> <p><b>Reason (R):</b> The variable declared within the function block is treated to be local variable whereas, the variable declared outside the function block will be referred to as global variable.</p>	1
18	<p><b>Assertion (A):</b> Python provides a built-in module called csv module to enable reading and writing operation in csv file.</p> <p><b>Reason (R):</b> It uses mainly the classes csv.writer and csv.reader. The csv.writer class creates a writer object, whereas the csv.reader class returns a reader object.</p>	1
<p><b>Section-B</b></p>		
19	<p>Find the value of the following statements if a="Chandrayan-3"</p> <p>i) print((a[2:3]*3).upper())            ii) print(list(a[-5:-1]).pop(1))</p> <p style="text-align: center;"><b>OR</b></p> <p>Find the value of the following statements if a="Moon Mission"</p> <p>i) print(a[0:4]+a[-4:]*2)            ii) print(list(a[-5:-1]).pop(2))</p>	1+1=2
20	<p>Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.</p> <pre>define Tot(Number)     Sum = 0     for C in range(1, Number + 1) :         Sum += C     RETURN Sum print(Tot[3])</pre> <p style="text-align: center;"><b>OR</b></p> <p>Rao has written a code to input a number and find out its square root. His code is having errors. Rewrite the correct code and underline the corrections made.</p>	2

	<pre>def Check():     n = int(input("Enter a number "))     for k in range (1,n//2)         if k*k = n:             print("Square root = ",k)             break     if k == n/2-1:         print("Not a perfect square ‘)  Check()</pre>	
21	<p>Write a program rotates the elements of a list so that the element at the first index moves to the second index, the element in second index moves to the third index and so on. The element in the last index moves to the first index.</p> <p>For an Example :</p> <p>enter the list = ["c++","python","java"] New list = [' java', ' c++', ' python ']</p> <p style="text-align: center;"><b>OR</b></p> <p>A dictionary D1 has values in the form of list of numbers. Write a program to create a new dictionary D2 having same key as D1 but values as the sum of the list elements.</p> <p>For example: if D1={'A':[1,2,3],'B':[4,5,6]}</p> <p>Then D2 is {'A':6,'B':15}</p>	2
22	<p>Find and write the output of the following Python code:</p> <pre>def display(str):     m=' ‘     for i in range(0,len(str)):         if(str[i].isupper()):             m=m+str[i].lower()         elif str[i].islower():             m=m+str[i].upper()         else:             if i%2==0:                 m=m+str[i-1]             else:                 m=m+'#'     print(m) display('Worldcup@2023')</pre>	2
23	<p>If the content of the file “<b>smile.txt</b>” is,</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p><b>Smiling is infectious,</b> <b>You catch it like the flu.</b> <b>When someone smiled at me today,</b> <b>I started smiling too.</b></p> </div> <p>(i) Find the output of the following code.</p>	1+1=2

	<pre> file=open("smile.txt") file.seek(5) contents=file.read(7) print(contents) print(file.tell()) file.close() </pre> <p>(ii) To move a file pointer <b>F</b>, 10 bytes ahead from the current position of file, statement used is _____.</p>	
24	<p>Suppose the content of a text file <b>Notes.txt</b> is :</p> <p>“The way to get started is to quit talking and begin doing”</p> <p>What will be the output of the following Python code?</p> <pre> F = open("Notes.txt") F.seek(29) S = F.read() print(S) </pre> <p style="text-align: center;"><b>OR</b></p> <p>Suppose the content of a text file <b>file.txt</b> is :</p> <p>“The way to get started is to quit talking and begin doing”</p> <p>What will be the output of the following Python code?</p> <pre> F = open("file.txt") F.seek(29) S = F.read() K=S.split() print(K[1:3]) </pre>	2
25	<p>Write a function in Python PUSH (Lst), where Lst is a list of numbers. From this list push all even numbers which end with the digit 6 into a stack implemented by using a list.</p> <p>For example if Lst= [11,33,66,92,16,45,56,26]</p> <p>Resultant stack will be= [66, 16, 56, 26]</p>	2
<b>Section-C</b>		
26	<p>Predict the output of following code fragment:</p> <pre> fruit={ } f1=['Apple', 'Banana', 'Apple', 'Banana', 'Banana'] for index in f1:     if index in fruit:         fruit[index]+=1     else:         fruit[index]=1 print(len(fruit)) print(fruit) </pre>	3

27	<p>Find output of the following code:-</p> <p>(i) <code>print("ringa ringa roses".find('ga')+len("roses"))</code></p> <p>(ii) <code>print('Chandrayan-3'.partition('a'))</code></p> <p>(iii) <code>print(dict.fromkeys('Aditya','L1'))</code></p>	1x3=3				
28	<p>Define a function SHOW () that takes a sentence as its parameter and calculate the number of upper cases, lower case, digit, and special characters present in the sentence. Store them into a dictionary in the following way. <b>Return the resultant dictionary.</b></p> <p>D={"UPPER CASE":_____, "LOWER CASE":_____, "DIGIT":_____, "SPECIAL CHARACTER":_____}</p> <p>Suppose the following input is supplied to the program:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>Python Programming Skills of 3.10</b></p> </div> <p>Then the output should be:</p> <p style="text-align: center;">UPPER CASE 3 LOWER CASE 22 DIGIT 3 SPECIAL CHARACTER 5</p> <p style="text-align: center;"><b>OR</b></p> <p>Define a function CHECK () that takes a list of city names as its parameter and then,</p> <p>i) Display the names of all the cities which start with 'A'.</p> <p>ii) Count and display the number of cities not starting with 'A'.</p> <p>For example:</p> <p>If input is- ['Ahmedabad', 'Mumbai', 'Amritsar', 'Bhubaneswar', 'Ajmer']</p> <p>Then the output should be-</p> <p style="text-align: center;">Names of the cities which start with A = Ahmedabad Amritsar Ajmer Total number of cities not starting with A = 2</p>	3				
29	<p>Answer the following questions based on the stack is given below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><b>English</b></td> </tr> <tr> <td style="text-align: center;"><b>Physics</b></td> </tr> <tr> <td style="text-align: center;"><b>Computer Sc</b></td> </tr> <tr> <td style="text-align: center;"><b>Chemistry</b></td> </tr> </table>	<b>English</b>	<b>Physics</b>	<b>Computer Sc</b>	<b>Chemistry</b>	1x3=3
<b>English</b>						
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<b>Chemistry</b>						

	<p>(i) PEEK operation will result _____ subject.</p> <p>(ii) Draw the stack after PUSH of 'Biology' and then 'PE' subjects.</p> <p>(iii) POP operation on the resultant stack after the above operations will give _____ subject.</p>	
30	<p>Rishi has created a dictionary containing countries and continent name as key:value pairs of 6 countries. Write a program, with separate user defined functions to perform the following operations:</p> <ul style="list-style-type: none"> <li>• <b>PUSH ()</b>: - Push the keys (name of the country) of the dictionary into a stack, where country belongs to continent "ASIA".</li> <li>• <b>POP ()</b>: - Pop and display the content of the stack.</li> </ul> <p>For example:</p> <p>If the sample content of the dictionary is as follows:</p> <pre>R={"UK":"EUROPE", "INDIA":"ASIA", "CHINA":"ASIA", "EGYPT":"AFRICA", "CUBA":"AMERICA", "JAPAN":"ASIA"}</pre> <p>The output from the program should be:</p> <p>JAPAN CHINA INDIA</p>	3
<b>Section-D</b>		
31	<p>Consider the code given below and fill in the blanks.</p> <pre>try:     num1= int(input (" Enter the first number"))     num2=int(input("Enter the second number"))     quotient=(num1/num2)     print ("Both the numbers entered were correct") except _____: # Statement 1     print (" Please enter only numbers") except _____: # Statement 2     print(" Denominator should not be zero") else:     print(" Great .. you are a good programmer")     _____: # Statement 3     print(" JOB OVER... GO GET SOME REST")</pre> <p>i) Write Statement 1 to handle errors if numbers are not input  ii) Write Statement 2 to handle errors if Denominator is zero  iii) Write Statement 3 which gets executed irrespective of exception is there or not there.  iv) What will be the output if the above code will be executed and the input will be given 15 and 0?</p>	1x4=4
32	<p>Write a method Words() in Python to read lines from a text file STORY.TXT, count and print the total number of words in each line . Also print at last, the average word length of the file.</p>	4



	<p>For example: If the content of the file is</p> <p>India is the fastest growing economy.  India is looking for more investments around the globe.  The whole world is looking at India as a great market.</p> <p>The output should be:  The no.of words in line1=6  The no.of words in line2=9  The no.of words in line3=11  Total words in file = 26</p>	
<b>Section-E</b>		
33	<p>Answer the following questions after going through the following function definition:</p> <pre>def my_func(var1=100, var2=200):      #Statement-1     var1+=10                          #Statement-2     var2 = var2 - 10                  #Statement-3     return var1+var2                  #Statement-4 p,q,r,s=50,20,30,45.5                #Statement-5 print(my_func(p), my_func(), sep="@") #Statement-6 print(my_func(q,r), my_func(s), sep="@") #Statement-7</pre> <p>(i) my_func() may be termed as a void function or a fruitful function?  (ii) Identify the scope of all identifiers used in the above code fragment.  (iii) Name the formal parameters used in the above code fragment.  (iv) Find output of Statement-6.  (v) Find output of Statement-7.</p>	1x5=5
34	<p>(i) What is meant by Serialization? Write any one point of difference between <b>ab</b> mode and <b>wb</b> mode in a Binary file.</p> <p>(ii) A binary file "EMP.dat" has structure [EmpNo, Name, Salary, Gender, Designation].  Write the function SEARCH() to search and display the details of all those employees whose salary is in the range of 50,000 to 80,000.</p> <p style="text-align: center;"><b>OR</b></p> <p style="text-align: center;"><b>(Option for part (ii) only)</b></p> <p>A Binary file '<b>PRIZE.dat</b>' has the following structure:  <b>[Name, Class, Rank]</b></p>	2+3=5

	<p>The file <b>PRIZE.dat</b> contains the data of all the prize winners of Class-XII students. Write a function <b>Prize_Winner()</b> in python, to display all the names along with the class and rank, who have secured Rank as 1 (one).</p>	
35	<p>Surekha Chand is a programmer, who has recently been given a task to write a Python functions CSVOpen() and CSVRead() to write some book records (Title, Author, Price) to a csv file BOOKS.CSV and then read and display only those records where the field Title starts with 'R'. She has succeeded in writing partial code and has missed out certain statements. As a Python programmer help her to complete the code.</p> <pre> import csv def CSVOpen():     with open( _____, ____, newline="") as csvf:    #Statement -1         cw=_____                                     #Statement -2         _____                                     #Statement -3         cw.writerow(['Rapunzel','Jack',300])         cw.writerow(['Barbie','Doll',900])         cw.writerow(['Johnny','Jane',280]) def CSVRead():     try:         with open('books.csv','r') as csvf:             cr=_____                                #Statement -4             for r in cr:                 if _____:                          #Statement -5                     print(r)     except:         print('File Not Found') CSVOpen() CSVRead() </pre> <p>i) Complete the Statement -1 to open the file.</p> <p>ii) Which statement will be used to create a csv writer object in Statement-2.</p> <p>iii) Choose the correct option for Statement-3 to write the names of the column headings in the CSV file, BOOKS.csv.</p> <p>iv) Which statement will be used to read the csv file in Statement-4.</p> <p>v) Fill in the appropriate statement to check the field Title starting with 'R' for Statement-5 in the above program.</p> <p style="text-align: center;"><b>OR</b></p>	1x5=5

Anis of class 12 has written the following code to create a CSV file “mydata.csv” which will contain user name and password for some users. As a programmer, help him to complete the program.

```
import _____ # Line 1
def addCsvFile(Username,PassWord): # to write / add data into the CSV file
    f=open(' mydata.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('mydata.csv','r') as newFile:
        newFileReader = csv._____(newFile) # Line 3
        for row in newFileReader:
            print (row[0],row[1])
        newFile._____ # Line 4
addCsvFile(“Aman”,”123@456”)
addCsvFile(“Anis”,”aru@nima”)
addCsvFile(“Raju”,”myname@FRD”)
readCsvFile() #Line 5
```

- (i) Name the module he should import in Line 1 and in which mode, Aman should open the file to add data into the file.
- (ii) Fill in the blank in Line 2 to open the file in the mode of.
- (iii) Fill in the blank in Line 3 to read the data from a csv file.
- (iv) Fill in the blank in Line 4 to close the file.
- (v) Write the output he will obtain while executing Line 5.

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