DIRECTORATE OF GOVERNMENT EXAMINATION, CHENNAI -6
HSE SECOND YEAR EXAMINATION, MARCH / APRIL -2023
COMPUTER SCIENCE ANSWER KEY

NOTE :

1. **Answer written only in BLACK or BLUE ink pen should be evaluated.**
2. **Choose the correct answer and write the option code.**
3. **In one of them (option or answer) is wrong, then award zero mark only.**

Maximum Marks : 70

PART – I

Answer all questions : **15×1=15**

Q.No	OPTION	ANSWER	MARK
1	B	Public members	1
2	C	Operator	1
3	B	Subroutines	1
4	B	3	1
5	D	.	1
6	A	Hierarchical	1
7	B	+	1
8	B	Wrapping	1
9	B	DROP TABLE	1
10	B	MAX( )	1
11	A	Concrete datatype	1
12	D	Recursion	1
13	D	Binary mode	1
14	A	Memorization	1
15	C	{1,3,6,9}	1

PART – II

Answer any Six Questions **Question number 24 is compulsory**. 6×2=12

16	A tuple is a comma-separated sequence of values surrounded with parentheses. Ex: lst:=(10,20) or Any Suitable example	1 1
17	Scope refers to the visibility of variables, parameters and functions in one part of a program to another part of the same program.	2
18	del command is used to remove the entire string variable.	2
19	In python, *for* loop uses the range( ) function in the sequence to specify the initial, final and increment values. **(or)** range( ) generates a list of values starting from **start** till **stop-1** **Syntax :** range(Start, Stop, [step])	1 1
20	class is the main building block in Python.class is a template for the object	2
21	A Data Manipulation Language(DML) is a computer programming language used for adding (inserting), removing(deleting) and modifying(updating) data in a database.	2

22	The default modes of the file reading is **text mode**, while reading from the file the data would be in the format of strings.	2
23	[Any four] Charts, Table, Graphs, Maps, Info graphics, Dashboards	2
24	[1,4,9,16,25,36,49,64,81,100] (or) Error Program	2

PART – III

Answer any Six Questions. **Question number 33 is compulsory** 6×3=18

25	❖ The class template specifies the interfaces to enable an object to be created and operated properly. ❖ An object's attributes and behaviours is controlled by sending functions to the object.	2 1
26	❖ The given problem will be divided into smaller over lapping sub-problems ❖ An optimum solution for the given problem can be achieved by using result of smaller sub problem. ❖ Dynamic algorithms uses memorization.	1 1 1
27	❖ Ternary operator is also known as conditional operator. ❖ It evaluate something based on condition being True or False ❖ **A Suitable example**	1 1 1
28	Syntax of While loop while <condition> : statements block 1 [else : Statements block 2]	3
29	**ceil( )** | **floor( )** Returns the smallest integer greater than or equal to x | Return the largest integer less than or equal to x print(math.ceil(26.7))→ 27 **Syntax (or) A suitable Example** | print(math.floor(26.7)→26 **Syntax (or) A suitable Example**	2 1
30	The main difference between the csv.reader( ) and DictReder ( ) is in simple terms csv.reader and csv.writer work with list/tuple, while csv DictReader and csv.DictWriter work with dictionary.	3
31	❖ **The fetch one ( ) :** method returns the next row of a query result set or None in case there is no row left. ❖ **fetch many () :** Displaying specified number of records is done by using fetch many( ). This method returns the next number of rows (n) of the result set.	3

32	str1 ="COMPUTER" index = len (str1) for i in str1 : print (str1 [0: index]) index - =1 (or) A suitable python program to display the given pattern.	3
33	1. Type the c++ program in notepad and save it as with **.cpp** extension. 2 Type the python program and save it as with **.py** extension. 3. Click the Run Terminal and open the command window 4. Type the command python <program_name.py> -i <c++ program>	3

PART – IV

Answer all the questions.		5×5=25
34 (a)	• List is constructed by placing expressions within square brackets separated by commas. List can store multiple values. Each value can be any type and can even be another list. • Any way of bundling two values together into one can be considered as a pair Lists are a common method to do so. Therefore List can be called as Pairs. • **A Suitable example**	2 2 1
	(OR)	
34 (b)	Linear Search also called sequential search is a sequential method for finding a particular value in a list. Pseudo Code • Traverse the array using for loop. • In every iteration, compare the target search key value with the current value of the list. • If the values match, display the current index an value of the array. • If the values do not match, move on the next array element. • If no match is found, display the search element not found. **A Suitable example**	2 2 1
35 (a)	Python breaks each logical line into a sequence of elementary lexical components known as Tokens. The normal token types are • Identifiers • Keywords • Operators • Delimiters • Literals. **An Explanation with suitable example**	1 1 1 1 1
	(OR)	

35 (b)	i) id () – Returns the " Identity" of an object id (object) – example ii) chr ()- Returns the Unicode character for the given ASCII value. chr(i) example iii) round ( ) – Returns the nearest inreger to its input round (nuber[,ndigits]) - example iv) type ( ) – Returns the type of object for the given single object type (object) - example v) pow ( ) Returns the computation of a^b i.e (a **b) a raised to the power of b pow (a,b) – example	1 1 1 1 1
36 (a)	In Python, a Tuple can be defined inside another Tuple called Nested tuple. In a nested tuple, each Tuple is considered as an element. The for loop will be useful to access all the elements in a nested tuple. **A Suitable Example** (OR)	3 2
36 (b)	The types of relationships : 1. One-to-One Relationship 2. One-to-Many Relationship 3. Many-to-One Relationship 4. Many-to-Many Relationship **Explanation for each**	1 4
37 (a)	**Syntax :** <opts>,<args> =getopt.getopt (argv,options,[Long – options]) argv – Explain Options – Explain Long options – Explain getopt( ) method returns value consisting of two elements. Each of these values are stored separately in two different list (arrays) opts and args. Opts contains list of splitted strings like mode and path. args contains error string. if at all the comment is given with wrong path or mode. args will be an empty list if there is no error. **Example :** opts. args =getopt(argv,"i:",['ifile=']	1 2 1 1
	(OR)	

<table>
<tr><td>37
(b)</td><td colspan="3">Differentiate DBMS and RDBMS (Any Five)
<table>
<tr><th>Basis of comparison</th><th>DBMS</th><th>RDBMS</th></tr>
<tr><td>Expansion</td><td>Database Management System</td><td>Relational Data Base Management system</td></tr>
<tr><td>Data Storage</td><td>Navigational model</td><td>Relational model</td></tr>
<tr><td>Date redundancy</td><td>Exhibit</td><td>Not present</td></tr>
<tr><td>Normalization</td><td>Not performed</td><td>It uses normalization to reduce redundancy</td></tr>
<tr><td>Data access</td><td>Consumes more times</td><td>Faster, compared to DBMS.</td></tr>
<tr><td>Keys and indexes</td><td>Does not use.</td><td>used to establish relationship. Keys are used in RDBMS</td></tr>
<tr><td>Transaction management</td><td>inefficient</td><td>Efficient and secure</td></tr>
<tr><td>Distributed Databases</td><td>Not supported</td><td>Supported by RDBMS</td></tr>
<tr><td>Example</td><td>Dbase, FoxPro</td><td>SQL server, Oracle,mysql,MariaDB,SQLite.</td></tr>
</table></td><td>5</td></tr>
<tr><td>38
(a)</td><td colspan="3">Differences between Histogram and Bar Graph (Any Five)
<table>
<tr><th>Histogram</th><th>Bar Graph</th></tr>
<tr><td>Displays data by way of bars to show the frequency of numerical data</td><td>Data that uses bars to compare different categories of data</td></tr>
<tr><td>Frequency distribution of continuous variables.</td><td>Diagrammatic comparison of discrete variables</td></tr>
<tr><td>Presents numerical data</td><td>Shows categorical data</td></tr>
<tr><td>No gap between the bars</td><td>Proper spacing between the bars.</td></tr>
<tr><td>categorized together, to represent ranges of data</td><td>Items are considered as individual entity.</td></tr>
<tr><td>Width of the rectangular blocks may or may not be same</td><td>Width of the bars are always same</td></tr>
</table></td><td>5</td></tr>
<tr><td></td><td colspan="3">(OR)</td><td></td></tr>
<tr><td>38
(b)</td><td colspan="3">Continue statement is used to skip the remaining part of a loop and start with next iteration. The syntax - Continue
Explanation - continue statement
A suitable example</td><td>2

1
2</td></tr>
</table>