DEPARTMENT OF GOVERNMENT EXAMINATION

HIGHER SECONDARY SECOND YEAR EXAMINATION - MAY-2022

KEY ANSWERS FOR COMPUTER SCIENCE

Note: 1. **Answers written only in BLACK or BLUE should be evaluated**
2. **Choose the correct answer and write the option code.**
3. **If one of them (option or answer) is wrong then award zero mark only**

PART- I   **Maximum:70 Marks**

Answer all the questions.

15X1=15

Q.No	Option	Answer	Marks
1.	a	Definition	1
2.	d	Selectors	1
3.	c	Namespaces	1
4.	a	Algorithm	1
5.	d	Relational Operator	1
6.	a	else if	1
7.	b	Lamda	1
8.	a	Type Error	1
9.	d	[17,23,41,10,32]	1
10.	c	__del__ ()	1
11.	d	Row	1
12.	d	ORDER BY	1
13.	c	Carriage Return and Line Feed	1
14	c	Boost	1
15.	d	Relational Database System	1

PART- II

Answer any six questions. Question number 24 is compulsory   **6 x 2 = 12**

Q.No	Answer	Marks	
16.	Abstract Data type is a type for objects or classes.		**2**
17.	The process of binding a variable name with an object is called Mapping.		**2**
18.	To search an item in data structure is called as searching. (or) Searching is used to locate specific data in a list. Types 1. Linear Search (or) Sequential Search 2. Binary Search (or) half-interval search	**1** **1**	**2**
19.	1. Interactive mode 2. Script mode	**1** **1**	**2**
20.	<u>Syntax</u> : Tuple_Name=(E1,E2,E3,…En) (or) Tuple_Name=E1,E2,E3,…En		**2**
21.	<u>**Unique constraint**</u> It ensures that no two rows have the same value in the specified columns. / <u>**Primary Key constraint**</u> It helps to uniquely identify a record. Only one field of the table can be set as primary key.		**2**
22.	A CSV file is a human readable text file where each line has a number of fields separated by commas or some other delimiter		**2**
23.	Data Visualization is the graphical representation of information and data. (or) Data Visualization is to communicate information visually.		**2**
24.	<opts>,<args>=getopt.getopt(argv,options,[long_options])		**2**

Answer any six questions. Question number 33 is compulsory   **6 x 3 = 18**

Q.No	Answer	Marks	

25.	<u>Characteristics of an Algorithm :</u>
	
	1. Input
	2. Output
	3. Finiteness
	4. Definiteness
	5. Effectiveness
	6. Correctness
	  7. Simplicity
	  8. Unambiguous
	  9. Feasibility
	  10. Portable
	  11. Independent
	(Any six)
		6x½=3	**3**

26.	**<u>break</u>** The break statement terminates the Loop containing it. **<u>continue</u>** continue statement is used to skip the remaining part of a loop and start with next iteration		**3**
27.	<u>Rules of local variable</u> • A variable with local scope can be accessed only within the function / block that it is created in. • When a variable is created inside the function / block, the variable become local to it. • A local variable only exists while the function is executing.	1 1 1	**3**
28.	• sys.argv is the list of command-line arguments passed to the python program. • argv contains all the items that come along via the command-line input. Its basically an array holding the command-line arguments of the program.	2 1	**3**

29.	The WHERE clause is used to extract only those records that fulfill a specified condition.
	    (or)
	WHERE clause is used to filter the records.
	
	<u>Python Statement</u>
	  cursor.execute("SELECT DISTINCT(Grade) FROM student where Gender='M'")
	      (or)
	Any Suitable Python Statement
		2
		
		1
			3

Q.No	Answer	Marks	
30.	<u>Data Visualization uses</u> • It help users to analyze and interpret the data easily • It makes complex data understandable and usable • Various charts in Data Visualization helps to show relationship in the data for one or more variables.	**1** **1** **1**	**3**

31.	<u>Arithmetic Operator</u>
	    An arithmetic operator is a command operator that takes two operands and performs a calculation on them.
	
	  + (Addition)
	  - (Subtraction)
	  * (Multiplication) (suitable example for any two operators)
	  / (Division)
	  % (Modulus)
	  ** (Exponent)
	  // (Floor Division)
		1
		
		2
			3

32.	SELECT DISTINCT place FROM student ; (or) any suitable SQL Statement		**3**

33.	for i in range(1,6):
	    for j in range(65,65+i):
	        a=chr(j)
	        print(a,end=" ")
	    print('\n')
	      (or)
	Any suitable program
			3

PART – IV

Answer all the questions.   **5 x 5 = 25**

Q.No	Answer	Marks	

34.
(a)
	<u>Parameters</u>
	    Parameters are the variables in a function definition and arguments are the values which are passed to a function definition.
	<u>Parameters without type</u>
	  (requires : b>=0)
	  (returns : a to the power of b)
	  let rec pow a b:=
	    if b=0 then 1
	    else a*pow b(a-1)
		1
		
		1	

	• explanation
	<u>Parameters with type</u>
	    (requires : b>=0)
	    (returns : a to the power of b)
	   let rec pow(a: int) (b:int) : int:=
	       if b=0 then 1
	       else a*pow b(a-1)
	
	        • explanation
		1
		
		1
		
		1
			5

(or)			
(b)	LEGB rule is used to decide the order in which the scopes are to be searched for scope resolution. • Local (L) • Enclosed (E) • Global (G) • Built-in (B) Explanation	1 2 2	5
35. **(a)**	Bubble sort is a simple sorting algorithm. It compares each pair of adjacent elements and swaps them if they are in the unsorted order. This comparison and passed to be continued until no swaps are needed. Pseudo code : 1. Start with the first element i.e, index=0, compare the current element with the next element of the array. 2. If the current element is greater than the next element of the array, swap them. 3. If the current element is less than the next or right side of the element, move to the next element. Go to step 1 and repeat until end of the index is reached. Example	1 2 2	5
(or)			
(b) (i)	SELECT Gender FROM student GROUP BY Gender;	2½	
(ii)	SELECT * FROM student ORDER BY name ; (or) Any suitable SQL statements	2½	5

36. (a)	input() It is used to accept data as input at run time.	**1**	**5**
	Syntax : variable=input("prompt string") suitable example	**1½**	
	print() print() is used to display the result of the program on the screen after execution.	**1**	

	Syntax:
	   print("Strings to be displayed as output")
	   print(variable)
	   print("Strings to be displayed as output" , variable)
	   print("String1", variable,"String2",variable,"String3"………)
	(Any one of the syntax)
	
	   Suitable example
		1 ½	

	(or)	

(b)	plt.xlabel - specifies label for x-axis (i) plt.ylabel - specifies label for y-axis (ii) plt.title - specifies title to the graph (iii) plt.legend() - Invoke the default legend (iv) plt.show() - Display the plot	**1** **1** **1** **1** **1**	**5**

37. (a)	**for Loop :** for loop is the most comfortable loop. It is also an entry check loop. The condition is checked in the beginning and the body of the loop is executed if it is only true otherwise the loop is not executed.	**1**	**5**

	Syntax :
	   for counter_variable in sequence :
	      statement-block1
	   [else:
	      statement-block2]
		2	

	suitable example	**2**	

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		EXCEL	CSV		
(b)		1. It is a binary file that holds information about all the worksheet in a file including both content and formatting.	1.CSV format is a plain text format with a series of values separated by commas.	**2**	**5**
		2. xls files can only be read by applications that have been especially written and read their format, and can only be written in the same way.	2.CSV can be opened with any text editor in windows like notepad, MS Excel, Open office etc.	**1**	
		3. It is a spreadsheet that saves files into the its own proprietary format viz xls or xlsx	3.CSV is a format for saving tabular information into a delimited text file with extension .csv	**1**	
		4. It consumes more memory while importing data	4.Importing CSV files can be much faster and it also consume less memory	**1**	

38.**(a)**	SET Operations • Union • Intersection • Difference • Symmetric difference **Union** - It includes all elements from two or more sets. Suitable examples **Intersection** - It includes the common elements in two sets. Suitable examples **Difference** - It includes all elements that are in first set but not in the second set. Suitable examples **Symmetric difference** - It includes all the elements that are in two sets but not the one that are common to two sets. Suitable examples	**1** **1** **1** **1** **1**	**5**

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38(b)	python	Keyword to execute the python program from command line	**2**	**5**
	filename.py	Name of the python program to execute	**1**	
	-i	input mode	**1**	
	C++ Filename without cpp extension	name of c++ file to be compiled and executed	**1**	