

**DIRECTORATE OF GOVERNMENT EXAMINATIONS, CHENNAI – 600006
HIGHER SECONDARY SECOND YEAR EXAMINATION – MARCH-2020
COMPUTER SCIENCE MARKING SCHEME – ENGLISH MEDIUM
(NEW SYLLABUS)**

TOTAL MARKS – 70

PART – I

Answer All the Questions

MARKS – 15

Q.NO.	OPTION	ANSWER
1	A	Pure Functions
2	D	Tuple
3	B	Private members
4	D	Time and space
5	D	Integrated Development Learning Environment
6	C	2 4 6 8
7	B	14
8		(error -mere attempt)
9	C	:
10	A	.
11	B	σ
12	A	DROP
13	D	Flat File
14	B	Boost
15	D	Database

PART – II		
Answer any six questions. Question no.24 is compulsory.		6×2=12
16	<p>Pair is a compound data type that holds two other pieces of data.</p> <p align="center">(or)</p> <p>Bundling two values together into one can be consider as a pair.</p> <p align="center">(or)</p> <p>Pair is a compound structure which is made up of list or Tuple.</p> <p>Any One Example</p>	1
17	Namespaces are containers for mapping names of variables to objects.	2
18	<p>An algorithm is a finite set of instructions to accomplish a particular task.</p> <p align="center">(or)</p> <p>It is a step by step procedure for solving a given problem.</p>	2
19	<p>range() generates a list of values starting from start till stop – 1.</p> <p align="center">(or)</p> <p>for loop uses the range() function in the sequence to specify the initial, final and increment values.</p> <p>Syntax: range(start, stop, [step])</p>	1
20	DML,DDL,DCL,TCL,DQL	2
21	<p>Expansion of :</p> <p>(i) SWIG - Simplified Wrapper Interface Generator</p> <p>(ii) MinGW - Minimalist GNU for Windows</p>	1
22	<p>INTEGER PRIMARY KEY</p> <p>If a column of a table is declared as an INTEGER PRIMARY KEY that column will be automatically auto-incremented.</p> <p align="center">(or)</p> <p>Whenever a null is used for this column the null will be automatically converted into an integer which will be one larger than the highest value so far used in that column</p>	2

23	Types of data visualization : (Any Four) <ul style="list-style-type: none"> • Charts • Tables • Graphs • Maps • Infographics • Dashboards 	2
24	Output : a. COMPUTER SCIENCECOMPUTER SCIENCE b. COMPUTE	1 1

PART -III

Answer any six questions. Question No.33 is compulsory.

6×3=18

25	<table border="1"> <thead> <tr> <th data-bbox="359 969 821 1019">Pure function</th> <th data-bbox="821 969 1284 1019">Impure function</th> </tr> </thead> <tbody> <tr> <td data-bbox="359 1019 821 1176">The return value of the pure functions solely depends on its arguments passed.</td> <td data-bbox="821 1019 1284 1176">The return value of the impure functions does not solely depend on its arguments passed.</td> </tr> <tr> <td data-bbox="359 1176 821 1265">They do not have side effects.</td> <td data-bbox="821 1176 1284 1265">They have side effects.</td> </tr> <tr> <td data-bbox="359 1265 821 1422">They do not modify the arguments which are passed to them.</td> <td data-bbox="821 1265 1284 1422">They may modify the arguments which are passed to them.</td> </tr> </tbody> </table>	Pure function	Impure function	The return value of the pure functions solely depends on its arguments passed.	The return value of the impure functions does not solely depend on its arguments passed.	They do not have side effects.	They have side effects.	They do not modify the arguments which are passed to them.	They may modify the arguments which are passed to them.	1 1 1
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26	Asymptotic notations are languages that uses meaningful statements about time and space complexity. <ol style="list-style-type: none"> 1. Big o 2. Big Ω 3. Big Θ 	2								
27	Ternary operator is also known as conditional operator. It evaluate something based on a condition being true or false. Any Suitable Example...	1 2 1								

28	(i) Recursive function is called by some external code.	1				
	(ii) If the base condition is met then the program gives meaningful output and exits.	1				
	(iii) Otherwise, function does some required processing and then calls itself to continue recursion.	1				
29	[1, 3, 9, 27, 81]	3				
30	Commit : save any transaction permanently.	1				
	Rollback : restore the database to last commit state	1				
	Save point : temporarily save a transaction	1				
31	The main difference between the reader() and DictReader() is reader() works with list / tuple while DictReader() works dictionary.	3				
32	<table border="1"> <thead> <tr> <th>fetchone()</th> <th>fetchmany()</th> </tr> </thead> <tbody> <tr> <td>The fetchone() method returns the next row of a query result set or none in case there is no row left</td> <td>The fetchmany() method returns the next number of rows (n) of the result set.</td> </tr> </tbody> </table>	fetchone()	fetchmany()	The fetchone() method returns the next row of a query result set or none in case there is no row left	The fetchmany() method returns the next number of rows (n) of the result set.	3
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33	Welcome to Python Programming / Error Program	3				

PART - IV

Answer the All Questions		5×5=25
34 (a)	Linear Search algorithm: Linear search also called sequential search is a sequential method for finding a particular value in a list.	2
	Pseudo code (i) Traverse the array using for loop (ii) In every iteration, compare the target search key value with the current value of the list. <ul style="list-style-type: none"> • If the values match, display the current index and value of the array • If the values do not match, move on to the next array element. 	2
	(iii) If no match is found, display the search element not found. Any Suitable Example.	1

	(or)													
(b)	<p>Input() function In Python, input() function is used to accept data as input at run time. Syntax : Variable = input("prompt string") Any Suitable Example :</p> <p>Print() function In python, the print() function is used to display result on the screen. Syntax print("String1", variable, "String 2", variable, "String 3",) Any Suitable Example :</p>	<p align="center">1½</p> <p align="center">1</p> <p align="center">1½</p> <p align="center">1</p>												
35 (a) i	<p>Using while loop i=100 while(i<=999): print(i) i=i+2</p> <p align="center">(or)</p> <p>Using for loop for i in range(100, 1000, 2): print(i)</p>	2½												
ii	<p>Output 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5</p>	2½												
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(b)	<table border="1"> <thead> <tr> <th>Function</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>id()</td> <td>Return the "identity" of the object</td> </tr> <tr> <td>chr()</td> <td>Returns the Unicode character for the given ASCII value</td> </tr> <tr> <td>round()</td> <td>Returns the nearest integer to its input</td> </tr> <tr> <td>type()</td> <td>returns the type of object for the given single object</td> </tr> <tr> <td>pow()</td> <td>returns the computation of (a**b)</td> </tr> </tbody> </table>	Function	Description	id()	Return the "identity" of the object	chr()	Returns the Unicode character for the given ASCII value	round()	Returns the nearest integer to its input	type()	returns the type of object for the given single object	pow()	returns the computation of (a**b)	5
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	Data access	Consumes more time	Faster	
	Keys and indexes	Does not use	Keys are used	
	Transaction management	Inefficient, error prone and insecure	Efficient and secure	
	Distributed database	Not supported	Supported	
	Example	Dbase, foxpro	SQL server, Oracle, mysql, MariaDB, SQLite	
38 (a)	CREATE TABLE employee(emp_id integer, emp_name char(20), gender char(1), age integer, salary integer, PRIMARYKEY(emp_id,emp_name));			5
	(or)			
(b)	Features of Python over C++ <ul style="list-style-type: none"> • Python uses Automatic Garbage Collection whereas C++ does not. • C++ is a statically typed language, while Python is a dynamically typed language. • Python runs through an interpreter, while C++ is pre-compiled. • Python code tends to be 5 to 10 times shorter than that written in C++. • In python, there is no need to declare types explicitly where as it should be done in c++. • In python, a function may accept an argument of any type, and return multiple values without any kind of declaration beforehand. Whereas in c++ return statements can return only one value. 			5