

Academic Session 2020-2021

Periodic Test -2

Name: _____

Class: 12 Sec:

Date: 09.06.2020

Subject: Computer Science (083)

Time: 2 Hours

Max Marks: 50

General Instructions:

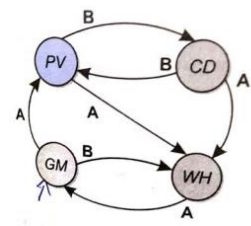
All questions are compulsory.

Question Paper divided into 3 sections A,B and C

Programming Language: Python

<u>Section A</u>			
1.	a.	Sahil wants to transfer data across two continents at very high speed. Write the name of the transmission medium that can be used to do the same. Write the type of network also.	1
	b.	How MAC address is different from IP address?	1
	c.	What is network? Give any two uses of having a network in your school computer lab.	1
2.	a.	Two schools in the same city wanted to transfer e-learning information. Which type of network will be used to implement the same?	1
	b.	List out the major components of a Computer Network (at least four)?	1
	c.	What is Modulation? What are two main types of modulation techniques?	1
3.	a.	What are the operations that you can perform on a Linear List Data Structure?	1
	b.	What is VOIP?	1
	c.	Identify the domain name and URL from the following: http://www.income.in/home.aboutus.html	1
4.	a.	Two students in the same class sitting inside the same room have connected their laptops using Bluetooth for working on a group presentation. What kind of network have they formed?	1
	b.	What is the efficiency of a computer algorithm?	1
	c.	Given the following array or list of values, which search will find the value 18 in the least number of steps? Justify your answer.	1

		3 10 18 22 35	
5.	a.	What is a data structure?	1
	b.	What are the concerns related to IOT?	1
	c.	Consider the code below. What will be the output produced by following code? lst3=[num for num in range(1,50) if num%7==0] print(lst3)	1
		Section -B	
6.	a.	Differentiate between guided and unguided media with examples of each.	2
	b.	Define the following terms: (a) Switch (b) Gateway (c) Router (d)Server	2
	c.	Write the purpose of following commands(any two): (1) whois (2) ipconfig (3) nslookup	2
7.	a.	What is Computational Complexity? Differentiate Best and Worst case complexity?	2
	b.	Define the Logarithmic Complexity? Name any one algorithm with Logarithmic Complexity?	2
	c.	Differentiate between Peer-to-Peer and Client-Server Networks?	2
8.	a.	What is Cloud Computing? What are different cloud deployment models?	2
	b.	On what factors is the quality of an algorithm judged?	2
	c.	What purpose Linear lists data structures are mostly used for?	2
9.	a.	Describe the similarities and differences between Queues and Stacks.	2
	b.	How is linear search different from binary search?	2
	c.	What is a list comprehension? How is it useful?	2
		Section -C	
10.	a.	<p>Consider the following network map showing how routers of various networks are connected?</p> <p>Draw the Routing table and identify the Best route from GM to WH?</p>	2



11.	<p>a. Great studies university is setting up its academic schools at Sunder Nagar and planning to set up a network .The university has 3 academic schools and one administration center as shown in the diagram below:</p> <div data-bbox="407 264 1224 814" data-label="Diagram"> </div> <p>Centre-to-center distance between various buildings:</p> <table border="1" data-bbox="358 873 1101 1115"> <tr> <td>Law School to Business School</td> <td>60m</td> </tr> <tr> <td>Law school to Technology School</td> <td>90 m</td> </tr> <tr> <td>Law school to Admin center</td> <td>115 m</td> </tr> <tr> <td>Business school to Technology School</td> <td>40m</td> </tr> <tr> <td>Business school to Admin Centre</td> <td>45m</td> </tr> <tr> <td>Technology School to Admin Centre</td> <td>25m</td> </tr> </table> <p>Number of computes in each School/Centre</p> <table border="1" data-bbox="358 1192 1101 1354"> <tr> <td>Law school</td> <td>25</td> </tr> <tr> <td>Technology School</td> <td>50</td> </tr> <tr> <td>Admin Centre</td> <td>125</td> </tr> <tr> <td>Business School</td> <td>35</td> </tr> </table> <p>a. Suggest with a suitable reason the most suitable place to install there server of this university. b. Which device will you suggest to be placed/installed in each of these schools/centers to efficiently connect all the computers within these schools/centers? c. The university is planning to connect to its admission office in the closest big city, which is more than 350 km from the university. Which type of network out of LAN,MAN or WAN will be formed? Justify your answer.</p>	Law School to Business School	60m	Law school to Technology School	90 m	Law school to Admin center	115 m	Business school to Technology School	40m	Business school to Admin Centre	45m	Technology School to Admin Centre	25m	Law school	25	Technology School	50	Admin Centre	125	Business School	35	2
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12.	Write an algorithm for Linear Search in Linear List	2																				
13.	Write a function that takes a sorted list and a number as an argument. Search for the number in the sorted list using binary search. (Or)	2																				

		Accept a list containing integers randomly. Accept any number and display the position at which the number is found in the list.	
14.		Write a function that takes a list that is sorted in ascending order and a number as arguments. The function should do the following: a. Insert the number passed as argument in a sorted list. b. Traverse the number from the list.	3