

KENDRIYA VIDYALAYA SANGATHAN GUWAHATI REGION

HALF YEARLY EXAMINATION 2019-20

CLASS :XII

SUB : COMPUTER SCIENCE

TIME: 3 Hrs.

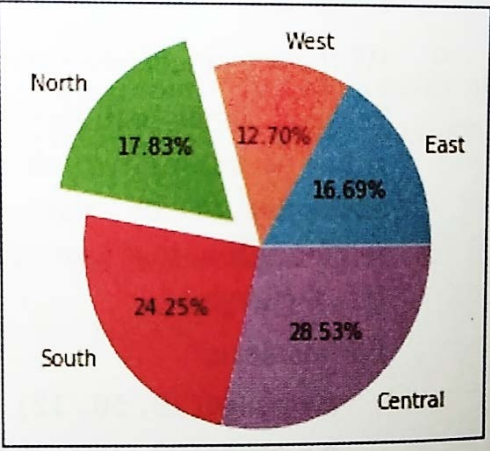
M.M : 70

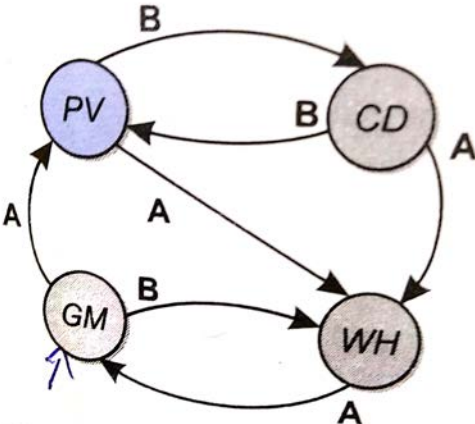
General Instruction: General Instruction: -

All Questions are compulsory. Internal choices are given in some questions.

1. *Programming language used is python. Use appropriate variable names.*
2. *Please check that this question paper contains 3 printed pages.*
3. *Please check that this question paper contains 33 questions.*
4. *Please write down the serial number of the question before attempting it. Indent your code appropriately.*

1.	What are Mutable and Immutable sequences in Python? Define with example?	2		
2.	What are different control flow statements in Python?	2		
3.	Predict the output of following code snippet: Lst = [10,20,30,40,50,60,70,80,90] print(Lst[::-3])	1		
4.	How are dictionaries different from lists? OR How lists are different from tuples when both are sequences?	2		
5.	Predict the output of the following snippet?	3		
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> a) <code>arr = [1,2,3,4,5,6]</code> <code>for i in range(1,6):</code> <code>arr[i-1]=arr[i]</code> <code>for i in range(0,6):</code> <code>print(arr[i], end = ' ')</code> </td> <td style="width: 50%; vertical-align: top;"> b) <code>Nums = [9,18,27,36]</code> <code>for val in Nums:</code> <code>for N in range(1,val%8):</code> <code>print(N, '#', end = ' ')</code> <code>print()</code> </td> </tr> </table>	a) <code>arr = [1,2,3,4,5,6]</code> <code>for i in range(1,6):</code> <code>arr[i-1]=arr[i]</code> <code>for i in range(0,6):</code> <code>print(arr[i], end = ' ')</code>	b) <code>Nums = [9,18,27,36]</code> <code>for val in Nums:</code> <code>for N in range(1,val%8):</code> <code>print(N, '#', end = ' ')</code> <code>print()</code>	
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6.	Find the errors and correct the code: def increment(L) answer = L.append([40]) Return (answer)	2		
7.	Define a function that receives two integer numbers and generates a random number from that range?	2		
8.	What is Python Library? Write down names of any two python libraries?	2		
9.	Differentiate between Python Packages and Modules?	2		
10.	Write down the syntaxes for the functions used for Reading from a file? OR Write down the syntaxes for the functions used for Writing a file?	2		
11.	Write a program in Python to count the number of words in file "poem.txt"?	3		
12.	What is a recursive function?	1		

13.	What is base case? What is recursive case?	2																		
14.	Define a recursive function to calculate the GCD of given numbers P and Q, where P>Q?	2																		
15.	What is Computational Complexity? Differentiate Best and Worst case complexity?	2																		
16.	Define the Logarithmic Complexity? Name any one algorithm with Logarithmic Complexity?	2																		
17.	What are n-D Arrays? How they are different from Python Lists?	1																		
18.	<p>Write a program in Python to plot the following chart? Where: Con = [23.4,17.8,25,34,40] Zones = ['East', 'West', 'North', 'South','Central']</p> <ul style="list-style-type: none"> • Show North zone's value exploded • Show % contribution for each zone • The pie chart should be circular 	3																		
	 <table border="1"> <caption>Pie Chart Data</caption> <thead> <tr> <th>Zone</th> <th>Value</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>23.4</td> <td>17.83%</td> </tr> <tr> <td>West</td> <td>17.8</td> <td>12.70%</td> </tr> <tr> <td>East</td> <td>25</td> <td>16.69%</td> </tr> <tr> <td>South</td> <td>34</td> <td>24.25%</td> </tr> <tr> <td>Central</td> <td>40</td> <td>28.53%</td> </tr> </tbody> </table>	Zone	Value	Percentage	North	23.4	17.83%	West	17.8	12.70%	East	25	16.69%	South	34	24.25%	Central	40	28.53%	
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19.	What are the operations that you can perform on a Linear List Data Structure?	1																		
20.	Write equivalent for loop for the following list comprehension? gen = (i/2 for i in [0, 9, 21, 32]) print(gen)	2																		
21.	Define a function in Python to search an element in a Linear List using Binary Search method?	3																		
22.	Evaluate the following postfix notation of expression using Stack? Show the status of Stack after every step? False, True, Not, OR, True, False, AND, OR	2																		
23.	Give postfix form of the following expression: A * (B + (C + D) * (E + F) / G) * H	2																		
24.	Define any twopython functions out of the following Queue operations: a) Enqueue(Qu, item) b) Dequeue(Qu) c) Peek(Qu) d) Display(Qu)	4																		

25.	List out the major components of a Computer Network (at least four)?	1
26.	Differentiate between Peer-to-Peer and Client-Server Networks?	2
27.	What is Cloud Computing? What are different cloud deployment models?	2
28.	Define the following terms (Any Three): a) Wide Area Network (WAN) b) MAC Address c) Router d) Internet of Things (IoT)	3
29.	What is Modulation? What are two main types of modulation techniques?	1
30.	What is CSMA/CA? How does it work?	2
31.	List out any four protocols with objectives used on networks?	2
32.	Define the following terms (Any Three): a) URL Address b) traceroute or tracert command c) checksum d) HTTPS e) SSL	3
33.	Consider the following network map showing how routers of various networks are connected?  <pre> graph TD PV((PV)) <--> B CD((CD)) GM((GM)) <--> A WH((WH)) PV <--> A GM CD <--> A WH PV --> A WH </pre>	4
	Draw the Routing table and identify the Best route from GM to WH?	