



**VIT<sup>®</sup>**  
Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

## School of Computer Science and Engineering

Fall Semester 2023-24

Continuous Assessment Test – 2

SLOT: F1+TF1

Programme Name & Branch: M.Tech (Integrated)& MIC, MID

Course Name & code: Cloud Computing Methodologies & CSI3001

Class Number (s): VL2023240104383, VL2023240104161, VL2023240104155,  
VL2023240104380

Faculty Name (s): Dr. GAYATHRI S, Dr. THIRUNAVUKKARASAN M, Dr. JUSTIN  
GOPINATH A, Dr. PRIYANKA N

Exam Duration: 90 Min.

Maximum Marks: 50

Q. No.	Question	Max Marks																								
1.	<p>Let's assume that there are five tasks and three virtual machines in the cluster. The scheduling is such that the highest priority is given to tasks that require more execution time. Then find out how the tasks are scheduled for each virtual machine (M1, M2, M3). Mention each step with the Expected Time to Compute matrix for the type of scheduling</p> <table><tr><td></td><td>T1</td><td>T2</td><td>T3</td><td>T4</td><td>T5</td></tr><tr><td>M1</td><td>120</td><td>35</td><td>80.5</td><td>240</td><td>143</td></tr><tr><td>M2</td><td>60</td><td>20.5</td><td>140</td><td>180.25</td><td>156</td></tr><tr><td>M3</td><td>32</td><td>25</td><td>150</td><td>200</td><td>92.5</td></tr></table> <p>Note: The data given in the table is in units of time</p>		T1	T2	T3	T4	T5	M1	120	35	80.5	240	143	M2	60	20.5	140	180.25	156	M3	32	25	150	200	92.5	10
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2.	<p>Read the conversation below:</p> <p>Person 1: With PaaS, cloud developers can free themselves from needing to provision, configure and manage infrastructure. Instead, we can focus on application code. So I am utilizing a PaaS solution offered by a cloud provider that supports most programming languages</p> <p>Person 2: Oh! Well, I am also using a PaaS solution from a cloud provider that supports all programming languages</p> <p>Person 1: The one I am using makes app deployment hassle-free and fast. But sometimes I face issues like deployment/upgrade failures without any information. Also, Tough-to-analyze logs and have rigid configurations</p>	10																								

	<p>Person 2: The one I am using is pocket-friendly. However, it is unsuitable for resource-intensive applications that need high CPU usage. It is suitable for startups and small businesses with low resource requirements.</p> <p>The conversation is about two similar orchestration services provided by different cloud providers. Identify the two services and make a detailed note of both.</p>	
3.	<p>Design a cloud project by identifying the appropriate cloud environment to host the system. Then, design a user-friendly web or mobile application that allows customers to browse, choose, and buy tickets. (1m)</p> <p>Implement the corresponding features and services for the following problems</p> <p>(a) Secure encryption method for payment processing (3m)</p> <p>(b) Data storage to manage ticket inventory and schedules (3m)</p> <p>(c) To ensure smooth ticket transactions (3m)</p>	10
4.	<p>For an asymmetrical social network, you are given a dataset D where lines consist of (A, B) which means user A follows user B. Write a Map Reduce pseudocode (Map and Reduce separately) that outputs the list of all users U who satisfy the following two conditions simultaneously:</p> <p>i) User U has at least 5 followers (5m)</p> <p>ii) U follows fewer than 3 other users (5m)</p> <p>Also, apply the map-reduce programming framework on each phase with your own sample data set.</p>	10
5.	<p>Elaborate on how to get Twitter's API and explain each process step-by-step. Create a website where users can see and read Tweets from certain locations only using Twitter's API. Also, curate certain Tweets to create a story or narrative on your website, for any purpose, to show a trend, demonstrate user engagement with one of your branded hashtags, and more.</p>	10