H   Roll No. 2294038

TCS–451

B. TECH. (CSE)
(FOURTH SEMESTER)
MID SEMESTER
EXAMINATION, March, 2024

VIRTUALIZATION AND CLOUD COMPUTING

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) Founded in 2008, Nearmap is a location-intelligence company that uses aerial camera technology to help organizations in Australia, New Zealand, the United States, and Canada track changes in their

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environments. Evaluate System Virtual Machine in above mentioned organization.

(CO1)

OR

(b) Navan is a travel and expense software company that simplifies booking, viewing, and managing business travel and expenses for thousands of companies around the world. Evaluate Process virtual machines with suitable diagram in above mentioned organization.   (CO1)

2. (a) Flywire is a global payments enablement and software company that combines its proprietary global payments network, next-gen payments platform, and vertical-specific software to deliver the most important and complex payments to global clients. Evaluate Virtual Machine Language in above mentioned organization.   (CO2)

OR

(b) Prime Video is a subscription-based, on-demand over-the-top streaming service,

offered as part of a Prime subscription or as a stand-alone service. Launched in 2006, it has over 200 million customers. Evaluate High level VN architecture in above mentioned organization.   (CO2)

3. (a) Mediastream is a company that helps media and large companies to use streaming technologies easily. The company has been in the market for more than 15 years, with customers throughout Latin America, part of Europe and the U.S. Evaluate Resource virtualization in above mentioned organization.   (CO3)

OR

(b) Gilead Sciences Inc. (Gilead) modernized its data infrastructure and improved its operational performance through a data mesh framework built on AWS, reducing data search times by over 50 percent. Evaluate Memory Virtualization in above mentioned organization.   (CO3)

4. (a) Neeva, an ad-free search engine, uses Karpenter and Amazon EC2 Spot Instances to maintain cost optimization and reduce the time spent waiting on infrastructure management by 10-400 hours per week. Evaluate I/O Virtualization with suitable diagram in above mentioned organization. (CO2)

OR

   (b) Merck KGaA, Darmstadt, Germany improves its time to data insights with a connected data and analytics platform on AWS, helping data teams access secure, custom environments faster. Evaluate para virtualization with suitable diagram in above mentioned organization. (CO3)

5. (a) Mircom, a global designer, manufacturer, and distributor of intelligent building solutions, wanted to modernize its Open Graphic Navigator (OpenGN)—a single-site digital twin and on-premises Internet of Things (IoT) software platform.

   Evaluate Microsoft Hyper-V with suitable diagram in above-mentioned organization.

   (CO3)

OR

(b) Fatshark, a Swedish video game developer, wanted to build its most complex game yet-Warhammer 40,000 : Darktide. To build on the success of the studio's Warhammer : Vermintide series, the combat-focused cooperative multiplayer game must offer ultralow latency to over 100,000 concurrent players. Evaluate VMware with suitable diagram in above mentioned organization.

(CO1)