CMR INSTITUTE OF TECHNOLOGY

UGC AUTONOMOUS

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**Department of Computer Science and Engineering**

**22CDPC63-Devops**

**III-B.Tech-II Semester MID2-Assignment Questions**

**SET - 1**

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| **S.No** | **Questions** | **BTL** | **COs** | **POs/PSOs** | **Unit** |
| 1 | List the core components of Ansible architecture. | I | 1 | 2,3,6,12/1 | III |
| 2 | Explain the difference between a Docker image and a Docker container. | II | 1 | 2,3,6,12/1 | IV |
| 3 | Describe how Kubernetes Services help in exposing pods to external or internal traffic. | II | 2 | 2,3,6,12/1 | IV |
| 4 | Explain Grafana API and Auto healing in detail.  . | III | 2 | 2,3,6,12/1 | V |
| 5 | Write a Selenium test script snippet that checks if a login form returns an error on invalid credentials. | III | 3 | 2,3,6,12/1 | V |

**SET - 2**

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| **S.No** | **Questions** | **BTL** | **COs** | **POs/PSOs** | **Unit** |
| 1 | Explain the purpose of an inventory file in Ansible and describe the types of inventories it supports | II | 1 | 2,3,6,12/1 | III |
| 2 | Write and define the command for creating a container, start a container and stop a Container? | III | 1 | 2,3,6,12/1 | IV |
| 3 | Write a basic YAML manifest to deploy an Nginx pod in a Kubernetes cluster and expose it using a ClusterIP service. | IV | 2 | 2,3,6,12/1 | IV |
| 4 | What is a Data Source in Grafana? Which types of data sources can Grafana connect to? | III | 2 | 2,3,6,12/1 | V |
| 5 | What is Test-Driven Development (TDD), What are the main steps involved in the TDD process? | II | 3 | 2,3,6,12/1 | V |

**SET - 3**

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| **S.No** | **Questions** | **BTL** | **COs** | **POs/PSOs** | **Unit** |
| 1 | Describe the difference between ad-hoc commands and playbooks in Ansible. | II | 1 | 2,3,6,12/1 | III |
| 2 | Write a simple docker-compose.yml file to set up a web application with an Nginx container and a backend container. | III | 1 | 2,3,6,12/1 | IV |
| 3 | Compare the orchestration approaches of Docker Swarm and Kubernetes, and determine in which scenarios each would be more appropriate.. | IV | 2 | 2,3,6,12/1 | IV |
| 4 | Explain how Prometheus collects metrics from infrastructure components. | III | 2 | 2,3,6,12/1 | V |
| 5 | What is Selenium and what are its main components? Explain the features of Selenium. | II | 3 | 2,3,6,12/1 | V |

**SET - 4**

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| **S.No** | **Questions** | **BTL** | **COs** | **POs/PSOs** | **Unit** |
| 1 | Describe the Roles and modules in Ansible? Give some examples. | III | 1 | 2,3,6,12/1 | III |
| 2 | What is Docker, and what are its primary use cases in software development? | I | 1 | 2,3,6,12/1 | IV |
| 3 | Explain the role of the Kubernetes Master Node and Worker Node. | II | 2 | 2,3,6,12/1 | IV |
| 4 | Explain about PromQL with some example, and define time-series database. | II | 2 | 2,3,6,12/1 | V |
| 5 | What is REPL-driven development, How can REPL-driven development help in writing Selenium tests? | III | 3 | 2,3,6,12/1 | V |

Note: **Set-1 [Roll nos:22R01A0511- 22R01A0539] Set-2[Roll nos:22R01A0541-22R01A0579] Set-3[Rollnos:22R01A0580-22R01A05C3] Set-4[Rollnos:22R01A05C5-22R01A05E6]**