



R22 Regulation

Subject code:4P5GC&4E5HC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, May 2025

DEVOPS

(Common to CSE (AI & ML) & CSE(DS))

Maximum Marks: 60

Date: 24.06.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10×1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	What is delivering pipeline DevOps?	1M	1	L1
b)	How does Agile improve software development?	1M	1	L1
c)	What is the main goal of the DevOps lifecycle?	1M	2	L1
d)	How does DevOps improve system resilience?	1M	2	L1
e)	What is a hosted Git server?	1M	3	L1
f)	What is a pull request?	1M	3	L1
g)	What is the primary purpose of a build system?	1M	4	L1
h)	Why is it essential to build by dependency order?	1M	4	L1
i)	What is Selenium primarily used for?	1M	5	L1
j)	What are testing backend integration points?	1M	5	L1

Part-B

Answer All the following questions. (5×10M=50Marks)		Marks	CO	Bloom Tx
2	a) Explain how DevOps and ITIL can be integrated to improve IT service management.	5M	1	L2
	b) Define release management and explain its significance in the DevOps lifecycle.	5M		
OR				
3	a) What is Kanban, and how does it aid in managing workflows in DevOps?	5M	1	L2
	b) What are the main stages of a typical DevOps delivery pipeline?	5M		
4	a) Define software architecture and explain its importance in application development.	5M	2	L2
	b) Describe two important "rules of thumb" for software architecture design.	5M		
OR				
5	a) Explain the concept of Separation of Concerns in software architecture and its significance.	5M	2	L2

	b) What are some best practices for managing database migrations in a DevOps environment?	5M		
6	Briefly explain the evolution of source code management systems from early practices to modern systems.	10M	3	L2
	OR			
7	Explain the role of Docker in the software development lifecycle.	10M	3	L1
8	a) Explain how Jenkins supports automated building and testing of software projects. b) What are Jenkins plugins, and how do they enhance Jenkins' functionality?	5M 5M	4	L3
	OR			
9	a) Define the term "host server"? What factors should be considered when choosing a host server for Jenkins? b) How does Infrastructure as Code (IaC) relate to build servers?	5M 5M	4	L3
10	a) Define Test-Driven Development (TDD) and explain its main principles. b) What is REPL-driven development, and how does it differ from traditional development practices?	5M 5M	5	L1
	OR			
11	a) What is a virtualization stack, and how does it facilitate software deployment? b) What is Ansible, and how does it differ from other configuration management tools?	5M 5M	5	L2