

Seat No. **OCT-NOV 2025 WINTER EXAMINATION****1154 B.Tech. CBCS****Sub. Name: DevOps in Machine Learning****Sub. Code: 109776/56526****Day and Date: Monday ,08-12-2025****Total Marks: 70****Time: 10:30 AM To 01:00 PM**

Instructions:

1. Assume suitable data wherever necessary and mention it boldly
2. Draw neat labelled diagrams wherever necessary
3. Figures to the right indicate full marks
4. Use Sketches/Diagrams wherever necessary

Special Inst.:

- + The question number Q6) is COMPULSORY.
- + Solve ANY 4 QUESTIONS from Q1) to Q5)
- + Read & follow the instructions carefully.
- + Write question numbers properly.

Q1) Attempt ALL of the following questions. (Solve ALL) [15]

- a. Describe DevOps & explain how it improves collaboration between development & operations teams? [8]
- b. Explain how Docker-based containerization helps in ML model deployment. [7]

Q2) Attempt ALL of the following questions. (Solve ALL) [15]

- a. List key components of Jenkins architecture & describe how it helps to manage distributed builds. [8]
- b. Compare & contrast Continuous Integration (CI) & Continuous Deployment (CD), with examples to illustrate their differences. [7]

Q3) Attempt ALL of the following questions. (Solve ALL) [15]

- a. Analyse the similarities & differences between SRE and DevOps [8]
- b. Use an automated build approach & explain how it helps in CI/CD with its benefits & example. [7]

Q4) Attempt ALL of the following questions. (Solve ALL) [15]

- a. Evaluate the differences between virtualization and containerization. [8]
- b. Design a plan outlining the steps required to prepare a software release in a CI/CD environment. [7]

Q5) Attempt ALL of the following questions. (Solve ALL)**[15]**

- a. Identify the core components of MLOps & explain the role of each component in the MLOps lifecycle. **[8]**
- b. Construct Containerization using Docker with architecture & components. **[7]**

Q6) Write a short note. (ANY TWO)**[10]**

- a. Analyse & list important factors considered while deploying ML models in production? **[5]**
- b. Justify the importance of monitoring after deploying ML models. **[5]**
- c. Demonstrate how automation in ML pipelines reduces human intervention. **[5]**

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (1154) B.Tech. CBCS (56526) DevOps in Machine Learning Part 4 SEM 8