

25BSC205

**UG PROGRAM (4 YEARS HONORS) WITH SINGLE MAJOR
AT THE END OF SECOND SEMESTER
SKILL ENHANCEMENT COURSE**

APPLICATIONS OF ARTIFICIAL INTELLIGENCE (Life Sciences)

**(Applicable to Botany, Zoology, Bio-technology, Micro-biology and other Life Sciences)
(w.e.f. Admitted Batch 2025-26)**

Time: 3 Hours

Max. Marks: 70

SECTION – A

Answer any FIVE questions. Each question carries 4 marks.

(5x4=20)

1. Explain the advantages of using TPU over GPU in AI applications.
2. What is Edge AI? Explain its role in smart surveillance cameras and smart vehicles.
3. Explain the importance of JSON and XML formats in AI applications.
4. What are APIs? Explain their role in AI data collection.
5. Differentiate between Manual Annotation and Automated Annotation.
6. Explain Firebase Studio.
7. State benefits of workflow automation.
8. Explain traffic prediction in networking.

SECTION – B

Answer ALL questions. Each question carries 10 marks.

(5x10=50)

9. (a) Explain different types of processors used in AI systems. Compare CPU, GPU, TPU, and NPU with suitable applications.

(Or)

- (b) Explain the role of AI development platforms in building AI applications. Discuss the features of Orange Data Mining, KNIME, Weka, and RapidMiner.

10. (a) Explain different types of data used in AI. Discuss structured, semi-structured, and unstructured data with suitable examples.

(Or)

- (b) Explain data privacy issues in AI applications. Discuss GDPR, HIPAA, and ethical AI data practices.

11. (a) Explain different methods of data collection used in AI applications. Discuss Manual Input, Sensors, APIs, System Logs, and Web Scraping.

(Or)

- (b) Explain the concepts of Data Cleaning, Validation, and Data Transformation. Discuss their importance in AI model performance.

12. (a) Explain the workflow of Vibe Coding. Discuss the process of selecting suitable AI development platforms for application development.

(Or)

- (b) Describe the importance of choosing the right workflow automation tool. Discuss selection criteria, integration capabilities, and practical use cases.

13. (a) Explain the applications of AI in networking. Discuss AI-based routing, fault management, traffic optimization, and network performance improvement.

(Or)

- (b) Discuss the challenges and limitations of using AI in cybersecurity. Suggest suitable measures to overcome these challenges.
