

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Regular/Supplementary Examinations October 2025

AI CHATBOTS

(AI&DS, AI&ML, CSE(AI&DS), CSE(AI&ML), CSE(AI), CSE(DATA SCIENCE))

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) What are the major benefits that chatbots bring to modern businesses? [7M]
b) Describe the current landscape of conversational chatbots. Explain the evolution from rule-based systems to AI-driven conversational agents and the technologies that support them. [7M]
(OR)
2. a) Discuss the role of chatbots in enabling a customer-centric approach in financial services. [7M]
b) Describe the significance of the General Data Protection Regulation (GDPR) in chatbot development. [7M]

UNIT-II

3. a) What are the major approaches to chatbot development? [7M]
b) How can a seamless transition between chatbot and human agent improve service quality? [7M]
(OR)
4. a) Describe the working principles of a rules-based chatbot. What are its advantages, limitations, and suitable application scenarios in customer service? [7M]
b) Define and explain the key terminologies used in chatbot development. [7M]

UNIT-III

5. a) Discuss the success metrics used to evaluate chatbot performance. [7M]
b) Compare and contrast chatbots with traditional mobile applications. [7M]
(OR)
6. a) Describe the growth of messenger applications and their impact on chatbot adoption. [7M]
b) Analyze the various risks associated with chatbot services? [7M]

UNIT-IV

7. a) Explain the overall architecture of a chatbot that uses Natural Language Processing (NLP), Natural Language Understanding (NLU), and Natural Language Generation (NLG). [7M]
b) How does Natural Language Generation (NLG) transform structured data or intents into coherent and contextually relevant human language? [7M]

(OR)

8. a) How does Natural Language Understanding (NLU) help a chatbot to interpret user intent, extract entities, and understand contextual meaning? [7M]
b) Discuss the challenges faced in implementing NLP, NLU, and NLG in chatbot systems. [7M]

UNIT-V

9. a) Explain the architecture and key components of the Microsoft Bot Framework. [7M]
b) How can APIs be used to enhance chatbot functionality and data accessibility? [7M]
- (OR)
10. a) Discuss the features and workflow of Google Dialog flow. [7M]
b) How does QnA Maker enable chatbots to provide knowledge-based responses using pre-defined data sources? [7M]
