

Context Engineering Certification MCQs

PIAIC Prompt & Context Engineering Assessment

Total Questions: 40

Difficulty Distribution: 8 Beginner (20%) | 16 Intermediate (40%) | 16 Advanced (40%)

Time Allocation: 60 minutes

QUESTIONS

Question 1 [BEGINNER]

What is Context Engineering?

- a) A method for designing hardware components for AI systems
- b) The practice of designing and building dynamic systems that provide an LLM with the right information, in the right format, at the right time
- c) A programming language specifically designed for AI applications
- d) A technique for compressing large datasets for machine learning

Correct Answer: b

Question 2 [BEGINNER]

According to André Karpathy's analogy, what does the context window represent in an LLM system?

- a) CPU
- b) Hard drive storage
- c) RAM
- d) Graphics processing unit

Correct Answer: c

Question 3 [BEGINNER]

What is the primary use case for Prompt Engineering?

- a) Building complex AI applications
- b) Direct conversations with AI (like ChatGPT)

- c) Creating multi-agent systems
- d) Database optimization

Correct Answer: b

Question 4 [BEGINNER]

How many essential components does every AI agent require?

- a) Four
- b) Five
- c) Six
- d) Seven

Correct Answer: c

Question 5 [BEGINNER]

In the burger analogy, what component represents the "bun"?

- a) Tools
- b) Knowledge
- c) Model
- d) Guardrails

Correct Answer: c

Question 6 [BEGINNER]

What is the nature of interaction in Prompt Engineering?

- a) One-time comprehensive instruction
- b) Back-and-forth conversational interaction
- c) Automated batch processing
- d) Silent background operation

Correct Answer: b

Question 7 [BEGINNER]

What does "Knowledge" represent in AI agent components?

- a) Dynamic conversation history
- b) Static information databases
- c) Real-time processing capability
- d) External system connections

Correct Answer: b

Question 8 [BEGINNER]

Which component enables AI agents to interact with external systems?

- a) Model
- b) Memory
- c) Tools
- d) Audio

Correct Answer: c

Question 9 [INTERMEDIATE]

What is the key difference between Context Engineering and Prompt Engineering in terms of refinement capability?

- a) Context engineering allows real-time refinement while prompt engineering doesn't
- b) Prompt engineering allows iterative refinement while context engineering requires anticipating all scenarios upfront
- c) Both allow equal levels of refinement
- d) Neither allows any form of refinement

Correct Answer: b

Question 10 [INTERMEDIATE]

When building a customer service AI agent, which scenarios must be accounted for in context engineering?

- a) Only billing and refund issues
- b) Only technical support queries

- c) Billing problems, refunds, login issues, escalation protocols, and edge cases
- d) Only frequently asked questions

Correct Answer: c

Question 11 [INTERMEDIATE]

What characterizes the complexity of context-engineered prompts?

- a) Simple conversational queries
- b) Single-line instructions
- c) Large, complex documents with XML tags and markdown, resembling code
- d) Basic question-answer formats

Correct Answer: c

Question 12 [INTERMEDIATE]

Which component is responsible for safety mechanisms and proper behavior in AI agents?

- a) Tools
- b) Model
- c) Memory
- d) Guardrails

Correct Answer: d

Question 13 [INTERMEDIATE]

What does "Memory" represent in AI agent architecture?

- a) Static databases only
- b) Hardware storage capacity
- c) Dynamic conversation history and context retention
- d) Model parameters

Correct Answer: c

Question 14 [INTERMEDIATE]

In the research assistant example, what is the maximum word limit for the trend summary?

- a) 200 words
- b) 250 words
- c) 300 words
- d) 400 words

Correct Answer: c

Question 15 [INTERMEDIATE]

What is the purpose of the "Orchestration" component in AI agents?

- a) Content generation
- b) User interaction
- c) Deployment systems, monitoring, and analytics
- d) Data storage

Correct Answer: c

Question 16 [INTERMEDIATE]

According to the document, what should be included in subtask prioritization?

- a) Only engagement metrics
- b) Only authority metrics
- c) Engagement (views, likes, reposts, citations) and Authority (publication reputation, domain expertise)
- d) Only citation counts

Correct Answer: c

Question 17 [INTERMEDIATE]

What is the recommended approach for handling multiple scenarios in context engineering?

- a) Create separate models for each scenario
- b) Use iterative refinement during runtime
- c) Anticipate all scenarios upfront in comprehensive instruction sets
- d) Handle scenarios as they occur

Correct Answer: c

Question 18 [INTERMEDIATE]

Which JSON field specifies the timeframe for research queries in the example?

- a) query_period
- b) time_range
- c) time_period
- d) date_range

Correct Answer: c

Question 19 [INTERMEDIATE]

What does the document identify as the evolution of prompt engineering?

- a) Machine learning engineering
- b) Context engineering
- c) Data engineering
- d) Software engineering

Correct Answer: b

Question 20 [INTERMEDIATE]

In multi-agent systems, what principle should always be followed regarding context?

- a) Keep context isolated between agents
- b) Always share context between agents
- c) Randomly distribute context
- d) Compress context before sharing

Correct Answer: b

Question 21 [INTERMEDIATE]

What are the four advanced context engineering strategies mentioned?

- a) Writing, Reading, Editing, Deleting
- b) Creating, Updating, Managing, Monitoring
- c) Writing, Selecting, Compressing, Isolating
- d) Planning, Executing, Reviewing, Optimizing

Correct Answer: c

Question 22 [INTERMEDIATE]

What is the priority range specified in the JSON format for subtasks?

- a) 1-5 (1=highest)
- b) 1-10 (1=highest)
- c) 0-10 (10=highest)
- d) 1-100 (100=highest)

Correct Answer: b

Question 23 [INTERMEDIATE]

According to the document, what should be avoided in the final trend summary?

- a) Bullet points
- b) Technical terms
- c) Fluff, background, or personal commentary
- d) Current events

Correct Answer: c

Question 24 [INTERMEDIATE]

What format should start_date and end_date follow in the JSON specification?

- a) MM/DD/YYYY
- b) DD-MM-YYYY
- c) YYYY-MM-DD
- d) YYYY-MM-DDTHH:MM:SSZ (UTC ISO format)

Correct Answer: d

Question 25 [ADVANCED]

In the context of multi-agent architecture decisions, what warning does the document provide?

- a) Agents should never communicate
- b) Actions carry implicit decisions - be careful at decision points in your architecture
- c) All agents should use the same model
- d) Context should never be shared between agents

Correct Answer: b

Question 26 [ADVANCED]

What is the strategic approach to "Compressing Context" in advanced context engineering?

- a) Deleting unnecessary information permanently
- b) Using shorter prompts only
- c) Summarization techniques, key point extraction, hierarchical structure, and token-efficient formatting
- d) Reducing model parameters

Correct Answer: c

Question 27 [ADVANCED]

In the research assistant example, if you needed to split functionality into multiple agents, what would be the logical division?

- a) Agent 1: User interface, Agent 2: Data processing
- b) Agent 1: Search and gather sources, Agent 2: Summarize and synthesize findings
- c) Agent 1: Input validation, Agent 2: Output generation
- d) Agent 1: Planning, Agent 2: Execution

Correct Answer: b

Question 28 [ADVANCED]

What is the significance of "Writing Context" in advanced strategies?

- a) It only improves readability
- b) It allows LLM to save task decomposition notes, intermediate results, decision rationales, and progress tracking for later use

- c) It reduces computational overhead
- d) It simplifies user interactions

Correct Answer: b

Question 29 [ADVANCED]

Which context isolation principle helps maintain security boundaries?

- a) Temporal context separation and security boundary enforcement
- b) Complete context sharing across all systems
- c) Random context distribution
- d) Static context allocation

Correct Answer: a

Question 30 [ADVANCED]

In the source_type specification, which types are explicitly mentioned as valid options?

- a) web, social, academic, news
- b) news|X|Reddit|LinkedIn|newsletter|academic|specialized
- c) online, print, digital, broadcast
- d) primary, secondary, tertiary, quaternary

Correct Answer: b

Question 31 [ADVANCED]

What is the recommended approach for handling "Selecting Context" from external sources?

- a) Random selection from available data
- b) Manual curation by human operators
- c) Database queries based on current task, API calls for real-time data, knowledge base searches, and user preference retrieval
- d) Pre-defined static selections

Correct Answer: c

Question 32 [ADVANCED]

According to the document, what makes context engineering essential for AI applications?

- a) It reduces computational costs
- b) When applications need to handle multiple scenarios autonomously, integrate with external systems, maintain consistency, and process complex workflows
- c) It improves user interface design
- d) It simplifies model training

Correct Answer: b

Question 33 [ADVANCED]

What is the critical consideration mentioned for decision points in multi-agent architecture?

- a) Speed of execution
- b) Resource allocation
- c) Actions carry implicit decisions - requiring careful architecture planning
- d) User experience optimization

Correct Answer: c

Question 34 [ADVANCED]

In context engineering for customer service, what specific guardrail examples are mentioned?

- a) Only content filtering
- b) Prevent inappropriate language, maintain professional tone, ensure regulatory compliance
- c) Only response time limits
- d) Only escalation protocols

Correct Answer: b

Question 35 [ADVANCED]

What is the relationship between context engineering and the "instruction manual" concept?

- a) They are completely separate concepts
- b) Context engineering creates the "instruction manual" that details how all components work together

- c) Instruction manuals replace context engineering
- d) They serve different purposes entirely

Correct Answer: b

Question 36 [ADVANCED]

How should domain_focus be categorized in the JSON specification?

- a) broad|narrow|specific
- b) general|specialized|expert
- c) technology|science|health
- d) primary|secondary|tertiary

Correct Answer: c

Question 37 [ADVANCED]

What is the strategic advantage of isolating context across different environments?

- a) Reduced memory usage only
- b) Task-specific contexts, user-specific information, temporal separation, and security boundaries
- c) Simplified programming only
- d) Faster processing only

Correct Answer: b

Question 38 [ADVANCED]

According to the implementation notes, what represents a "relatively simple single-agent system"?

- a) A system with no external integrations
- b) The research assistant example provided
- c) A system with only basic query processing
- d) A system without memory components

Correct Answer: b

Question 39 [ADVANCED]

What is the key principle for handling information overload through context compression?

- a) Delete all non-essential information
- b) Use summarization techniques, key point extraction, hierarchical information structure, and token-efficient formatting
- c) Reduce context window size
- d) Limit user input length

Correct Answer: b

Question 40 [ADVANCED]

Based on the document's assessment framework, what demonstrates complete understanding of context engineering principles?

- a) Memorizing all six components
- b) Understanding the differences between prompt and context engineering, identifying all six AI agent components with explanations, and applying context engineering to specific scenarios like customer service
- c) Only knowing the technical specifications
- d) Only understanding the theoretical concepts

Correct Answer: b

ANSWER KEY SUMMARY

Beginner Level (Questions 1-8):

1. b | 2. c | 3. b | 4. c | 5. c | 6. b | 7. b | 8. c

Intermediate Level (Questions 9-24): 9. b | 10. c | 11. c | 12. d | 13. c | 14. c | 15. c | 16. c | 17. c | 18. c | 19. b | 20. b | 21. c | 22. b | 23. c | 24. d

Advanced Level (Questions 25-40): 25. b | 26. c | 27. b | 28. b | 29. a | 30. b | 31. c | 32. b | 33. c | 34. b | 35. b | 36. c | 37. b | 38. b | 39. b | 40. b

TOPIC COVERAGE SUMMARY

Core Concepts Covered:

- Context Engineering definition and principles (Questions 1, 2, 19, 35)

- Comparison with Prompt Engineering (Questions 3, 6, 9, 17)
- Six Essential AI Agent Components (Questions 4, 5, 7, 8, 12, 13, 15, 34)
- Practical Applications (Questions 10, 32, 40)
- Advanced Strategies (Questions 21, 26, 28, 29, 31, 37, 39)
- Multi-Agent Systems (Questions 20, 25, 27, 33, 38)
- JSON Specifications & Technical Details (Questions 14, 16, 18, 22, 24, 30, 36)
- Best Practices & Implementation (Questions 11, 23, 39)

Certification Readiness Indicators:

- **Pass Threshold:** 28/40 (70%)
- **Excellence Threshold:** 36/40 (90%)
- **Time Management:** 1.5 minutes per question average