Quiz JSON Schema Specification

Overview

This schema defines the structure for a multi-choice quiz application with comprehensive metadata tracking, dynamic section management, and detailed question specifications. The schema supports educational content with percentage-based topic distribution and extensive question metadata.

Root Schema Structure

Top-Level Properties

Property	Type	Required	Description
metadata	object	✓	Comprehensive quiz information and statistics
questions	array	✓	Array of quiz questions with detailed metadata

Metadata Section

Required Metadata Fields

Field	Type	Format	Description
quiz_name	string	1-200 characters	Full descriptive name of the quiz/examination
total_questions	integer	≥ 1	Total number of questions in the complete quiz
created_date	string	YYYY-MM-DD	Date when this quiz file was created
gen_model_used	string	Min 1 character	AI model used to generate this JSON file
file_description	string	10-500 characters	Detailed description of the quiz content and scope
content_areas	array	Min 1 item	Topic categories with statistics

Optional Metadata Fields

Field	Type	Format	Description
batch_range	string	"number-number"	Range of question batches (e.g., "1-18")
question_id_range	string	"number-number"	Range of question IDs (e.g., "1-450")
sources	array	strings	Reference sources and materials used

Field	Type	Format	Description
special_features	array	strings	Descriptive features and highlights

Content Areas Object Schema

Each content area must include:

Field	Type	Format	Description
name	string	1-100 characters	Name of the content area/topic
weight	string	"number%"	Official exam weight percentage
questions_in_file	integer	≥ 0	Actual questions for this topic in current file
percentage	string	"number.number%"	Actual percentage in this file

Questions Section

Question Object Schema

Each question must include:

Field	Type	Required	Format	Description
id	integer	✓	Sequential from 1	Unique question identifier
section	string	✓	1+ characters	Primary content area name
subsection	string	✓	1-100 characters	Specific subtopic within section
question	string	✓	10-1000 characters	The actual question text
choices	array	✓	Exactly 4 strings	Multiple choice options
correct_answer	string	✓	A, B, C, or D	Letter designation of correct answer
explanation	string	✓	10-500 characters	Detailed answer explanation
source	string	✓	3-100 characters	Reference citation

Choice Array Requirements

- **Length**: Exactly 4 elements
- **Format**: Each choice must be prefixed with letter and parenthesis:
  - "A) [option text]"
  - "B) [option text]"
  - "C) [option text]"
  - "D) [option text]"

Validation Rules & Constraints

Cross-Field Validation

1. **Section Alignment**: Every `questions[].section` must correspond to a `content_areas[].name`

2. **Answer Validation**: `correct_answer` must match an existing choice letter (A-D)

3. **ID Sequencing**: Question IDs should be consecutive integers starting from 1

4. **Percentage Consistency**: `content_areas[].questions_in_file` should sum to approximately `total_questions`

Data Integrity Checks

- All required string fields must be non-empty

- Date format must follow YYYY-MM-DD pattern

- Percentage strings must end with "%" symbol

- Range strings must follow "number-number" pattern

- Choice arrays must contain exactly 4 items with proper letter prefixes

Recommended Practices

- **Content Quality**: Questions should be clear, unambiguous, and appropriate for target audience

- **Distribution**: Actual question counts should approximate the official content area weights

- **Source Attribution**: Include specific references for educational content

- **Metadata Accuracy**: Ensure all statistics and ranges accurately reflect the file contents

Example Structure

```json
{
  "metadata": {
    "quiz_name": "FINRA Series 65 - Uniform Investment Adviser Law Examination",
    "total_questions": 450,
    "batch_range": "1-18",
    "question_id_range": "1-450",
    "created_date": "2025-07-29",
    "gen_model_used": "Grok 4.0",
    "file_description": "Complete Series 65 practice question bank including original 300
    "content_areas": [
      {
        "name": "Economic Factors and Business Information",
        "weight": "15%",
        "questions_in_file": 71,
        "percentage": "15.8%"
      }
    ],
    "sources": [
      "NASAA Series 65 Content Outline 2023",
```

```
      "Achievable Series 65 Practice Questions"
    ],
    "special_features": [
      "Comprehensive coverage of all NASAA content areas",
      "Advanced investment strategies and modern planning concepts"
    ]
  },
  "questions": [
    {
      "id": 1,
      "section": "Economic Factors and Business Information",
      "subsection": "Basic Economic Concepts",
      "question": "What is the primary function of the Federal Reserve?",
      "choices": [
        "A) Regulate stock markets",
        "B) Control monetary policy",
        "C) Supervise investment advisers",
        "D) Enforce securities laws"
      ],
      "correct_answer": "B",
      "explanation": "The Federal Reserve's primary function is to control monetary polic
      "source": "Federal Reserve System Overview"
    }
  ]
}
```

This specification ensures consistent data structure, enables comprehensive quiz management, and supports educational content across different subject areas and examination types.