```
**Generate exactly <SUB_BATCH_SIZE> questions in the format above.**
```

Listing 33: Question generation coding domain prompt

```
You are generating realistic math questions that a USER would ask an AI ASSISTANT. Create questions based ONLY
       on the specific details in CURRENT FOCUS AREAS.

## CURRENT FOCUS AREAS (STRICT SCOPE - ONLY SOURCE FOR QUESTIONS):
<FOCUSED_BULLETS>

## QUESTIONS ALREADY COVERED IN THIS BATCH (AVOID THESE):
<BATCH_HISTORY>

## CONTEXT REFERENCE (FOR UNDERSTANDING ONLY - DO NOT GENERATE QUESTIONS ABOUT THIS):
<PREVIOUS_SUB_BATCH_PLANS>
<PREVIOUS_BATCH_PLANS>

## CRITICAL RULES:
### 1. CURRENT FOCUS AREAS BULLET TYPE IDENTIFICATION - CHECK FIRST
**BEFORE DOING ANYTHING:** Identify the bullet type in CURRENT FOCUS AREAS:
- **Time Anchor:** bullets (contain "Time Anchor:" in title) -> NO MATHEMATICAL WORK GENERATION
- **Personal Introduction:** bullets (contain "Personal Introduction:" in title) -> NO MATHEMATICAL WORK
       GENERATION
- **Mathematical bullets: (all others) -> MATHEMATICAL WORK GENERATION REQUIRED

### 2. MANDATORY DETAIL COVERAGE & TRACKING
**STEP 1 - MANDATORY EXTRACTION:** Before writing ANY questions, you MUST extract and list EVERY SINGLE detail
       from CURRENT FOCUS AREAS:

**Extract ALL of these categories:**
- **Names:** [list EVERY name mentioned - people, places, institutions, etc.]
- **Numbers:** [list EVERY number, age, percentage, score, quantity, measurement]
[Other categories example]

**STEP 2 - VERIFICATION:** Count total extracted details. You MUST use 100% of them.
**STEP 3 - TRACKING:** As you write each question, mark which specific details it uses.
**STEP 4 - FINAL CHECK:** Before submitting, verify EVERY extracted detail appears in at least one question.

**ABSOLUTE REQUIREMENT:** Every single extracted detail MUST appear in at least one question across the batch.
       NO EXCEPTIONS.
### 3. ABSOLUTE SOURCE RESTRICTION
**ONLY ALLOWED:** Details explicitly written in CURRENT FOCUS AREAS bullet points
**COMPLETELY FORBIDDEN:**
- ANY content from BATCH_HISTORY
- ANY content from CONTEXT REFERENCE sections
- Generic questions about mathematical fields
- Details not explicitly mentioned in current bullets

**CONTEXT REFERENCE RULE:** Use only to understand WHO/WHAT things mean when they appear in CURRENT FOCUS
       AREAS.

### 4. DETAIL USAGE PATTERN (ANTI-REPETITION)
- **First mention:** Use full specific detail from bullet point
- **Subsequent references:** Use pronouns ("it", "that", "my homework")
- **VERIFICATION:** Each specific detail appears ONLY ONCE across all questions

### 5. MANDATORY MATHEMATICAL WORK INCLUSION
**CRITICAL:** When referencing problems, equations, or mathematical work that isn't explicitly provided in
       bullets, you MUST generate and include the complete mathematical content.

**ABSOLUTE EXCEPTIONS - NO MATHEMATICAL WORK GENERATION:**
- **Time Anchor:** bullets - Generate questions about scheduling, deadlines, timing without any MATHEMATICAL
       WORK
- **Personal Introduction:** bullets - Generate questions FROM the person introducing themselves about their
       background, career, goals without any MATHEMATICAL WORK
- **FOR PERSONAL INTRODUCTION BULLETS:** Generate questions FROM the perspective of the person introducing
       themselves
The person in the bullet is the USER asking the questions
These are contextual/personal details, NOT MATHEMATICAL WORK scenarios

**FOR TIME ANCHOR/PERSONAL INTRODUCTION BULLETS:**
- Focus on study scheduling, academic deadlines, learning goals
- Ask about exam preparation, study coordination, academic planning
- NO mathematical equations, NO problem-solving, NO calculations
- Use natural conversation about timing, goals, and academic context

**REQUIRED PATTERNS:**
- **Completely Stuck (40%):** NO work shown, just describe what you're trying to solve
- **Partially Stuck (30%):** Show ONLY initial 2-4 steps where you got stuck
- **Need Verification (20%):** Show ONLY final answer/result
- **Conceptual Confusion (10%):** NO calculations, concept-focused questions

**WORK GENERATION REQUIREMENTS:**
- Match mathematical level mentioned in bullet points
- Include specific numbers, variables, expressions
- Create realistic problems users would encounter
- **NEVER use placeholders like "... (insert work)" - ALWAYS generate actual mathematical work**

### 6. AUTHENTIC USER STYLE
```