Appendix X: Approved Summative Assessment Question Types and Cognitive Depth

Effective Term 1, AY 2026–2027

Full Compliance Term 3

Applicable to all Liwa Education Schools

Purpose:

To ensure consistency, fairness, and alignment with ADEK directives and Liwa Education's standards of academic challenge, this appendix outlines the permitted question types and corresponding Depth of Knowledge (DoK) levels for all summative assessments across core subjects (Arabic, Islamic, English, Math, Science, UAE Social Studies, and ICT). This framework supports the development of students' higher-order thinking, conceptual mastery, and real-world application of knowledge.

1. Cognitive Rigor and DoK Alignment

All summative assessment items must be designed in line with Norman Webb's Depth of Knowledge (DoK) framework:

DoK Level	Cognitive Demand	Student Expectations
Level 1	Recall and Reproduction	Recall facts, terms, perform simple procedures
Level 2	Skills and Concepts	Apply skills, interpret data, explain relationships

Level 3	Strategic Thinking	Justify, analyze, draw conclusions, revise thinking
Level 4	Extended Thinking	Investigate, synthesize, critique, develop models or solutions

ADEK Expectation: At least 60% of items in summative assessments must be DoK Level 2 and above, with 20% or more at Level 3 and 4 for Grades 6–12.

2. Approved Question Types by DoK Level

Question Type	Examples	Recommended DoK	Guidance
Multiple Choice	Select correct grammar use, identify correct method	Level 1–2	Must go beyond recall (e.g., apply rules or concepts, interpret visuals)
Short Answer / Constructed Response	Explain a process, summarize a text, solve and justify a math problem	Level 2–3	Requires explanation or reasoning, not just a single-word answer
Matching Items	Match terms with definitions, diagrams with functions	Level 1–2	Limit use to no more than 15% of paper
Cloze/Fill in the Blank	Fill vocabulary gaps, equation steps	Level 1	Use only when contextualized (e.g., within a paragraph)

Extended Response / Essay	Analyze character motivation, evaluate experiment outcomes	Level 3–4	Rubrics must align to specific criteria (e.g., coherence, analysis, depth)
Diagram Labeling / Annotation	Label scientific diagrams, historical maps	Level 2	Should include a follow-up explanation question
Scenario-Based Questions	Interpret case study, respond to real-life problem	Level 2–3	Encouraged in Grades 4+; must include multiple steps or judgment
Data Interpretation	Analyze graphs, identify patterns	Level 2–3	Require reasoning, not just data recall
Project-Based Component (Optional)	Design a sustainable product, plan a digital solution	Level 4	Use for STEM, ICT, or interdisciplinary subjects in upper grades

3. Subject-Specific Recommendations

Subject	**DoK Emphasis**
English	Reading: Levels 2–3; Writing: Levels 3–4; Speaking (oral exams): Level 2–3
Math	Problem-solving: Level 2; Reasoning/Justification: Level 3+
Science	Experimental design and analysis: Level 3–4
Arabic (A & B)	Grammar: Level 1–2; Comprehension/Writing: Level 2–4

Islamic Studies	Understanding Hadith/Quran: Level 2; Application/Reflection: Level 3–4
UAE SS	Source analysis, historical reasoning: Level 2–3
ICT	Practical tasks: Level 2; Design/Programming solutions: Level 3–4

4. Design and Balance Guidelines

Grades 1–5:

- At least 50% DoK Level 2 questions.
- Avoid purely recall-based assessments.

Grades 6–12:

- 60% or more at Level 2+.
- Minimum 20% at Level 3–4 (extended thinking required).

All assessments must include:

- Clear instructions and scaffolding where needed
- Rubrics for open-ended responses
- A mix of question types within each assessment

Monitoring & Compliance:

Heads of Department (HoDs), Subject Leads, and School Assessment Coordinators are responsible for verifying alignment with this framework during the paper moderation process.