

EXAMINATION FOR CERTIFICATE OF SECONDARY EDUCATION ORDINARY LEVEL (ECSEOL)

COMPUTER SCIENCE 8010**School Based Assessment (Component 1, Code 8010/1)***Complete task bank for Form 2 and Form 3 with scoring guides*

Based on: ECZ Assessment Schemes for ECSEOL 2026 (Chapter 25: Computer Science) and the CDC Computer Science Syllabi, Secondary Education Ordinary Level, Form 1-4 (2024).

1. Purpose and structure of the SBA

- Construct: Demonstrates proficiency in designing, developing and applying computational solutions to real-world problems, guided by Computer Science principles and prioritising ethics and responsible digital citizenship.
- The SBA is Component 1 of the examination. It is set, administered and scored by the subject teacher at school level in Form 2 and Form 3 and carries 30% of the final result; the Final Examination (Component 2) carries 70%.
- The scheme requires 16 tasks in total: nine in Form 2 and seven in Form 3. Each form is scored out of 100 marks, giving 200 marks. Raw marks (out of 100 per form) are submitted to ECZ each year through the ECZ portal; ECZ applies the weighting.
- A major project starts in Form 2, Term 3 and continues into Form 3, Term 1. In this task bank the project is split into Stage 1 (Task F2.9) and Stage 2 (Task F3.1).
- All tasks are scenario-based and depict real-life situations. They cover the five Elements of Construct and use the task types listed in the scheme: problem-solving exercises, practical tests, coding assignments, portfolio and project assessment, class participation and collaboration, and peer review.
- Candidates must complete both components to be graded; ECZ does not process partial marks. Marks scored in the SBA must not exceed the maximum allowed in the SBA Guidelines.

2. Elements of Construct assessed

EoC	Statement and focus
EoC 1	Recognises computer system components to build and troubleshoot computer systems in everyday life. Identifies computer components, understands their functions and uses this knowledge to assemble and troubleshoot systems.
EoC 2	Analyses computer tools based on their roles in problem solving. Analyses, classifies and distinguishes different computer tools based on how each is used to solve specific problems.
EoC 3	Analyses computing concepts by identifying relationships, principles and underlying structures. Investigates core computing concepts and how they interconnect within digital systems.
EoC 4	Applies computational knowledge to critically evaluate situations and make informed technological decisions based on efficiency, ethics, safety and long-term impact.
EoC 5	Creates and designs systems that solve real-life problems and improve the way of life of citizens. Designs, develops and produces digital solutions that are creative, functional, user-centred and address real societal needs.

3. Summary of SBA tasks

Form 2 (9 tasks, 100 marks)

Task	Title	Term	EoC	Specific competence code(s)	Marks
F2.1	Tracking Class Marks with a Spreadsheet	T1	EoC 2	2.1.1.1	10
F2.2	Number Systems for a Scrolling Message Display	T1	EoC 3	2.2.1.1	10
F2.3	"Know Your Provinces" Quiz in Scratch	T1	EoC 5	2.3.1.1	12
F2.4	A Discount Algorithm for the School Tuck Shop	T2	EoC 3	2.6.1.1	10
F2.5	Networking the School Computer Laboratory	T2	EoC 1	2.4.1.1	10
F2.6	Securing the School Records Computer	T2	EoC 4	2.5.1.1	10
F2.7	Class Test: Styling a Lodge Web Page and Querying a Learner Database	T2	EoC 5	2.7.1.1, 2.8.1.1	12
F2.8	Design Challenge: An AI, IoT or Robotic Solution for the Community	T3	EoC 5	2.9.1.1, 2.10.1.1, 2.11.1.1	12
F2.9	Major Project - Stage 1: Planning and Designing a Computing Solution	T3	EoC 5	2.3.1.1, 2.6.1.1, 2.8.1.1	14
	Total				100

Form 3 (7 tasks, 100 marks)

Task	Title	Term	EoC	Specific competence code(s)	Marks
F3.1	Major Project - Stage 2: Building, Testing and Presenting the Solution	T1	EoC 5	3.5.2.1, 3.6.1.1, 3.7.1.1	16
F3.2	Campaign Materials for the School Environmental Club	T1	EoC 2	3.1.1.1, 3.1.2.1, 3.3.1.1	12
F3.3	Logic Gates for the Solar Borehole Pump	T1	EoC 1	3.2.1.1	12
F3.4	Protecting a Mobile-Money Agent and Customer Data	T2	EoC 4	3.4.1.1	12
F3.5	Python Program for Learner Competency Levels	T2	EoC 5	3.5.1.1, 3.5.2.1	16
F3.6	Normalising the Shop Orders Database and Adding Interactivity	T2	EoC 3, EoC 5	3.7.1.1, 3.6.1.1	14
F3.7	Technology Decisions for a District Health Office	T3	EoC 4	3.11.1.1, 3.8.1.1, 3.9.1.1, 3.10.1.1, 3.12.1.1	18
	Total				100

Note on the scheme: Section 3.1 of the Computer Science chapter states that nine tasks are completed in Form 2 and seven in Form 3, while the term-by-term table in the same chapter adds up to seven in Form 2 and nine in Form 3 (16 in both cases). This task bank follows the written statement (Form 2: nine, Form 3: seven). The total of 16 tasks and 100 marks per form are unaffected, and teachers may reorder tasks within a form if ECZ confirms the other distribution.

4. Coverage of Elements of Construct (marks)

	EoC 1	EoC 2	EoC 3	EoC 4	EoC 5
Form 2 (marks)	10	10	20	10	50
Form 3 (marks)	12	12	7	30	39
Total (200)	22	22	27	40	89

Every EoC is assessed in both forms. EoC 5 carries the largest share because it is the creating (design and development) element and includes the major project.

5. Term plan (suggested)

Term	Form 2	Form 3
Term 1	F2.1 Spreadsheet; F2.2 Number systems; F2.3 Scratch quiz	F3.1 Project Stage 2; F3.2 Presentation, publication and online content; F3.3 Logic gates
Term 2	F2.4 Algorithms; F2.5 Network topologies; F2.6 Cybersecurity; F2.7 CSS and SQL class test	F3.4 Cyber threats and data protection; F3.5 Python program; F3.6 Database normalisation and JavaScript
Term 3	F2.8 AI, IoT or robotics design challenge; F2.9 Project Stage 1	F3.7 Emerging technology decisions

6. Administration and scoring guidelines

- Set the tasks as written or adapt the scenario to the local context, keeping the marks, competences and cognitive demand unchanged. Tasks must remain scenario-based.
- Score each task with the scoring guide. Allocate marks for each marking point shown in brackets; accept any other valid and correct response. For calculations and code, award method marks where reasoning is shown and accuracy marks for correct answers.
- Practical tasks (F2.1, F2.3, F2.5, F2.7, F3.2, F3.3, F3.5) are assessed individually, even where learners prepare materials in groups. Group work is allowed only for practice, F2.8 and the major project, and each learner must still be assessed individually.
- Alternative to practical: schools with limited computers should use shifts, paper-based practical tasks, simulation software, oral explanations, project-based and portfolio assessment as described in the syllabus. Each task states its alternative.
- Projects (F2.9, F3.1) must be supervised and scored at each stage and not accepted only as finished products. Plagiarised work must not be credited.
- Learners should keep a portfolio (offline or cloud-based) holding their code, designs, test records, reflections and project documents as evidence of the marks awarded.
- Record raw marks on the score sheet (Appendix) and enter them on the ECZ portal at the end of each year. Teachers must keep scripts and evidence for moderation. For GCE candidates, ECZ will provide separate guidance.

Mark bands used in this task bank follow the competency levels of the scheme: 70-100% Outstanding, 60-69% Advanced, 50-59% Basic, 40-49% Satisfactory, 0-39% Unsatisfactory.

PART A: FORM 2 SBA TASKS (9 TASKS, 100 MARKS)

Task F2.1: Tracking Class Marks with a Spreadsheet

Form / Term	Form 2, Term 1
Type of task	Practical test (computer laboratory), individual
Element(s) of Construct	EoC 2: Analyses computer tools based on their roles in problem solving
Specific competence(s)	2.1.1.1 Use spreadsheet for data entry and analysis
Syllabus activities assessed	Exploring spreadsheet components; performing arithmetic operations using formulas and functions; filtering and sorting data; performing statistical analysis (COUNTIF, AVERAGE); creating charts.
Key competences	Application Software Skills; Critical Thinking and Problem-Solving
Cognitive level (Revised Bloom)	Applying, Analysing
Marks / Time	10 marks / 60 minutes
Alternative to practical	Learners write the formulas on paper, state the expected results and describe each step (sorting, filtering, charting); or use simulation software.

Scenario

A class teacher at a secondary school in Luapula Province records the end-of-term marks of eight learners in an exercise book. Calculating totals, averages and positions by hand takes two days and errors are common. The head teacher has asked you, as the ICT club secretary, to build a spreadsheet that does the work automatically. The marks (out of 100) are shown below.

Learner	Mathematics	English	Science
Chanda	68	55	72
Mutale	45	60	52
Bwalya	82	74	90
Natasha	38	41	35
Kabwe	59	63	48
Mwansa	71	49	66
Temwani	30	52	44
Thandiwe	90	85	94

Tasks

Ref	Task	Marks
(a)	Create a worksheet with the headings Learner, Mathematics, English and Science in A1:D1 and enter the data for all eight learners. Format the heading row (bold, centred, shaded) and apply borders to the table.	[2]
(b)	Insert two new columns named Total and Average. Use formulas to calculate the total and the average mark of every learner and copy the formulas down the column.	[3]
(c)	Use functions to find (i) the highest and the lowest Mathematics mark, and (ii) the number of learners who scored 50 or more in Mathematics.	[2]
(d)	Sort the learners from the highest to the lowest total. Then filter the learners whose average is below 50 so that the teacher can arrange remedial lessons. State their names.	[2]

Ref	Task	Marks
(e)	Create a column chart comparing the class average of Mathematics, English and Science. Add a chart title and axis labels.	[1]
	Total	[10]

Scoring guide

Ref	Expected response and marking points	Marks
(a)	Correct headings and all 24 marks entered accurately (1). Heading row formatted and borders applied (1).	2
(b)	Total: =SUM(B2:D2) (1). Average: =AVERAGE(B2:D2) (1). Formulas copied for all eight learners (1). Expected results (Total / Average): Chanda 195 / 65.0; Mutale 157 / 52.3; Bwalya 246 / 82.0; Natasha 114 / 38.0; Kabwe 170 / 56.7; Mwansa 186 / 62.0; Temwani 126 / 42.0; Thandiwe 269 / 89.7.	3
(c)	(i) =MAX(B2:B9) gives 90 and =MIN(B2:B9) gives 30 (1). (ii) =COUNTIF(B2:B9,">=50") gives 5 (1).	2
(d)	Sorted order: Thandiwe 269, Bwalya 246, Chanda 195, Mwansa 186, Kabwe 170, Mutale 157, Temwani 126, Natasha 114 (1). Filter (average < 50): Natasha (38.0) and Temwani (42.0) (1).	2
(e)	Correct chart type with title, labelled axes and correct values: Mathematics 60.4, English 59.9, Science 62.6 (1).	1

Accept any other valid and correct response. Award method marks where working or reasoning is shown.

Task F2.2: Number Systems for a Scrolling Message Display

Form / Term	Form 2, Term 1
Type of task	Problem-solving exercise (written), individual
Element(s) of Construct	EoC 3: Analyses computing concepts by identifying relationships, principles and underlying structures
Specific competence(s)	2.2.1.1 Apply number system operations
Syllabus activities assessed	Converting numbers between decimal, binary, octal and hexadecimal; performing binary arithmetic; representing text using ASCII.
Key competences	Critical Thinking and Problem-Solving; Technical Proficiency
Cognitive level (Revised Bloom)	Understanding, Applying
Marks / Time	10 marks / 40 minutes
Alternative to practical	Not applicable; the task is paper-based.

Scenario

The school ICT club is building a small scrolling-message display for the school gate. The controller stores every letter as an ASCII code in binary, and the display address is written in hexadecimal. The club must carry out several number-system conversions and calculations. (The ASCII code of the letter A is 65.)

Tasks

APPENDIX: SBA SCORE SHEET

Learner name: _____ Index/Exam No.: _____ School: _____

Form 2

Task	Title	Max	Learner score	Teacher initials
F2.1	Tracking Class Marks with a Spreadsheet	10		
F2.2	Number Systems for a Scrolling Message Display	10		
F2.3	"Know Your Provinces" Quiz in Scratch	12		
F2.4	A Discount Algorithm for the School Tuck Shop	10		
F2.5	Networking the School Computer Laboratory	10		
F2.6	Securing the School Records Computer	10		
F2.7	Class Test: Styling a Lodge Web Page and Querying a Learner Database	12		
F2.8	Design Challenge: An AI, IoT or Robotic Solution for the Community	12		
F2.9	Major Project - Stage 1: Planning and Designing a Computing Solution	14		
	Total (raw mark out of 100)	100		

Form 3

Task	Title	Max	Learner score	Teacher initials
F3.1	Major Project - Stage 2: Building, Testing and Presenting the Solution	16		
F3.2	Campaign Materials for the School Environmental Club	12		
F3.3	Logic Gates for the Solar Borehole Pump	12		
F3.4	Protecting a Mobile-Money Agent and Customer Data	12		
F3.5	Python Program for Learner Competency Levels	16		
F3.6	Normalising the Shop Orders Database and Adding Interactivity	14		
F3.7	Technology Decisions for a District Health Office	18		
	Total (raw mark out of 100)	100		

Head of Department: _____ Signature: _____ Date: _____