



May 1, 2026

unit-1-problem-solving — Overview

Unit 1 — Table of Contents

Syllabus Coverage

- 1.1 Introduction & Steps for Problem Solving
- 1.2 Algorithm: Definition, Characteristics & Examples
- 1.3 Flowchart: Symbols, Rules & Examples
- 1.4 Flowchart vs Algorithm
- 1.5 Pseudocode
- 1.6 GTU PYQ Practice

Weightage: $\approx 10\%$ (10 marks) | Hours: 5

Topic 1: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 3–4 (reference for further study)

Topic 2: Key Concepts

Key Topics

- Clear step-by-step solution
- Language-independent
- Easy to convert to code

Key Definition

Clear step-by-step solution

Source Coverage

Frames 5–6 (reference for further study)

Topic 3: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 7–8 (reference for further study)

Topic 4: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 9–10 (reference for further study)

Topic 5: Key Concepts

Key Topics

- Easy to understand — language-independent
- Can be directly converted to any programming language
- Helps to detect and fix logical errors before coding

Key Definition

Easy to understand — language-independent

Source Coverage

Frames 11–12 (reference for further study)

Topic 6: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 13–14 (reference for further study)

Topic 7: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 15–17 (reference for further study)

Topic 8: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 18–19 (reference for further study)

Topic 9: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 20–21 (reference for further study)

Topic 10: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 22–23 (reference for further study)

Topic 11: Key Concepts

Key Topics

- Not a real programming language — no strict syntax
- Uses keywords like IF, ELSE, WHILE, FOR, PRINT
- Closer to a programming language than plain English

Key Definition

Not a real programming language — no strict syntax

Source Coverage

Frames 24–25 (reference for further study)

Topic 12: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 26–27 (reference for further study)

Topic 13: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 28–29 (reference for further study)

Topic 14: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 30–32 (reference for further study)

Topic 15: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 33–34 (reference for further study)

Topic 16: Key Concepts

Key Definition

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Source Coverage

Frames 35–36 (reference for further study)

Topic 17: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 37–38 (reference for further study)

Topic 18: Key Concepts

Key Topics

- Provides a visual overview of the solution before coding
- Easier to communicate the logic to others
- Helps in identifying bottlenecks and logical errors

Key Definition

Provides a visual overview of the solution before coding

Source Coverage

Frames 39–40 (reference for further study)

Topic 19: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 41–42 (reference for further study)

Topic 20: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 43–44 (reference for further study)

Topic 21: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 45–47 (reference for further study)

Topic 22: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 48–49 (reference for further study)

Topic 23: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 50–51 (reference for further study)

Topic 24: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 52–53 (reference for further study)

Topic 25: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 54–55 (reference for further study)

Topic 26: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 56–57 (reference for further study)

Topic 27: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 58–60 (reference for further study)

Unit Summary & Revision

Next Steps

- Review all condensed frames above
- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems



May 1, 2026

Syllabus Coverage

- 2.1 Introduction, Features & Applications of Python
- 2.2 Python Installation & Basic Program Structure
- 2.3 Keywords, Identifiers & Variables
- 2.4 Data Types
- 2.5 Operators
- 2.6 Type Conversion
- 2.7 GTU PYQ Practice

Weightage: $\approx 14\%$ | Hours: 6

Topic 1: Key Concepts

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Source Coverage

Frames 3–4 (reference for further study)

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Source Coverage

Frames 5–6 (reference for further study)

Topic 3: Key Concepts

Key Definition

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Source Coverage

Frames 7–8 (reference for further study)

Topic 4: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 9–10 (reference for further study)

Topic 5: Key Concepts

Key Definition

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Source Coverage

Frames 11–12 (reference for further study)

Topic 6: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 13–14 (reference for further study)

Topic 7: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 15–17 (reference for further study)

Topic 8: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 18–19 (reference for further study)

Topic 9: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 20–21 (reference for further study)

Topic 10: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 22–23 (reference for further study)

Topic 11: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 24–25 (reference for further study)

Topic 12: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 26–27 (reference for further study)

Topic 13: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 28–29 (reference for further study)

Topic 14: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 30–32 (reference for further study)

Topic 15: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 33–34 (reference for further study)

Topic 16: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 35–36 (reference for further study)

Topic 17: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 37–38 (reference for further study)

Topic 18: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 39–40 (reference for further study)

Topic 19: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 41–42 (reference for further study)

Topic 20: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 43–44 (reference for further study)

Topic 21: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 45–47 (reference for further study)

Topic 22: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 48–49 (reference for further study)

Topic 23: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 50–51 (reference for further study)

Topic 24: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 52–53 (reference for further study)

Topic 25: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 54–55 (reference for further study)

Topic 26: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 56–57 (reference for further study)

Topic 27: Key Concepts

Key Definition

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Source Coverage

Frames 58–60 (reference for further study)

Unit Summary & Revision

Next Steps

- Review all condensed frames above
- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems



May 1, 2026

unit-3-flow-of-control — Overview

Unit 3 — Contents

Topic 1: Key Concepts

Key Topics

- **Sequential** — Statements execute one after another (default)
- **Selection / Decision** — Execute different code based on a condition
- **Iteration / Loop** — Repeat a block of code multiple times

Key Definition

Sequential — Statements execute one after another (default)

Source Coverage

Frames 3–4 (reference for further study)

Topic 2: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 5–6 (reference for further study)

Topic 3: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 7–8 (reference for further study)

Topic 4: Key Concepts

Key Topics

- Conditions are checked top to bottom
- First True condition executes its block
- else is optional — runs if none match

Key Definition

Conditions are checked top to bottom

Source Coverage

Frames 9–10 (reference for further study)

Topic 5: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 11–12 (reference for further study)

Topic 6: Key Concepts

Key Topics

- `break` — exit the loop immediately
- `continue` — skip to next iteration

Key Definition

`break` — exit the loop immediately

Source Coverage

Frames 13–14 (reference for further study)

Topic 7: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 15–17 (reference for further study)

Topic 8: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 18–19 (reference for further study)

Topic 9: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 20–21 (reference for further study)

Topic 10: Key Concepts

Key Topics

- `break` — exits the loop entirely
- `continue` — skips current iteration, loop continues

Key Definition

`break` — exits the loop entirely

Source Coverage

Frames 22–23 (reference for further study)

Topic 11: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 24–25 (reference for further study)

Topic 12: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 26–27 (reference for further study)

Topic 13: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 28–29 (reference for further study)

Topic 14: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 30–32 (reference for further study)

Topic 15: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 33–34 (reference for further study)

Topic 16: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 35–36 (reference for further study)

Topic 17: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 37–38 (reference for further study)

Topic 18: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 39–40 (reference for further study)

Topic 19: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 41–42 (reference for further study)

Topic 20: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 43–44 (reference for further study)

Topic 21: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 45–47 (reference for further study)

Topic 22: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 48–49 (reference for further study)

Topic 23: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 50–51 (reference for further study)

Topic 24: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 52–53 (reference for further study)

Topic 25: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 54–55 (reference for further study)

Topic 26: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 56–57 (reference for further study)

Topic 27: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 58–60 (reference for further study)

Unit Summary & Revision

Next Steps

- Review all condensed frames above
- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems



May 1, 2026

unit-4-functions — Overview

Unit 4 — Contents

Topic 1: Key Concepts

Key Topics

- Reusability — write once, use many times
- Modularity — break large programs into smaller pieces
- Readability — code is easier to understand

Key Definition

Reusability — write once, use many times

Source Coverage

Frames 3–4 (reference for further study)

Topic 2: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 5–6 (reference for further study)

Topic 3: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 7–8 (reference for further study)

Topic 4: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 9–10 (reference for further study)

Topic 5: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 11–12 (reference for further study)

Topic 6: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 13–14 (reference for further study)

Topic 7: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 15–17 (reference for further study)

Topic 8: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 18–19 (reference for further study)

Topic 9: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 20–21 (reference for further study)

Topic 10: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 22–23 (reference for further study)

Topic 11: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 24–25 (reference for further study)

Topic 12: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 26–27 (reference for further study)

Topic 13: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 28–29 (reference for further study)

Topic 14: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 30–32 (reference for further study)

Topic 15: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 33–34 (reference for further study)

Topic 16: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 35–36 (reference for further study)

Topic 17: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 37–38 (reference for further study)

Topic 18: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 39–40 (reference for further study)

Topic 19: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 41–42 (reference for further study)

Topic 20: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 43–44 (reference for further study)

Topic 21: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 45–47 (reference for further study)

Topic 22: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 48–49 (reference for further study)

Topic 23: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 50–51 (reference for further study)

Topic 24: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 52–53 (reference for further study)

Topic 25: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 54–55 (reference for further study)

Topic 26: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 56–57 (reference for further study)

Topic 27: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 58–60 (reference for further study)

Unit Summary & Revision

Next Steps

- Review all condensed frames above
- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems



May 1, 2026

unit-5-data-structures — Overview

Unit 5 — Contents

Topic 1: Key Concepts

Key Topics

- Ordered — items maintain insertion order
- Mutable — can add, remove, or change items
- Allows duplicates — same value can appear multiple times

Key Definition

Ordered — items maintain insertion order

Source Coverage

Frames 3–4 (reference for further study)

Topic 2: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 5–6 (reference for further study)

Topic 3: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 7–8 (reference for further study)

Topic 4: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 9–10 (reference for further study)

Topic 5: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 11–12 (reference for further study)

Topic 6: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 13–14 (reference for further study)

Topic 7: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 15–17 (reference for further study)

Topic 8: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 18–19 (reference for further study)

Topic 9: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 20–21 (reference for further study)

Topic 10: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 22–23 (reference for further study)

Topic 11: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 24–25 (reference for further study)

Topic 12: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 26–27 (reference for further study)

Topic 13: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 28–29 (reference for further study)

Topic 14: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 30–32 (reference for further study)

Topic 15: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 33–34 (reference for further study)

Topic 16: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 35–36 (reference for further study)

Topic 17: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 37–38 (reference for further study)

Topic 18: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 39–40 (reference for further study)

Topic 19: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 41–42 (reference for further study)

Topic 20: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 43–44 (reference for further study)

Topic 21: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 45–47 (reference for further study)

Topic 22: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 48–49 (reference for further study)

Topic 23: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 50–51 (reference for further study)

Topic 24: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 52–53 (reference for further study)

Topic 25: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 54–55 (reference for further study)

Topic 26: Key Concepts

Key Definition

See materials for detailed content.

Source Coverage

Frames 56–57 (reference for further study)

Topic 27: Key Concepts

Key Definition

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Source Coverage

Frames 58–60 (reference for further study)

Unit Summary & Revision

Next Steps

- Review all condensed frames above
- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems