



Job Ready Assessment Blueprint

Computer Programming



Test Code: 3023 / Version: 01

“Measuring What Matters”

Specific Competencies and Skills Tested in this Assessment:

Analyze Programming Problems and Flowchart Solutions

- Analyze user requirements
- Determine input and output formats for a program
- Determine the flow of data through network and identify process logic
- Use various logic diagrams to describe flow of data and processing

Design Program Solutions

- Determine if and where data is to be stored
- Design data storage and layout
- Select appropriate programming language
- Specify processing logic
- Explain the importance of a design review
- Define implementation plans for a new system

Code Programs

- Determine the variables for a program
- Prepare and code routines using structured logic
- Demonstrate knowledge of computer language syntax and environment
- Identify and interpret various computer languages
- Explain unit testing

Test Programs

- Design and analyze test plan for use in program testing
- Test programs and evaluate results for accuracy
- Correct programming errors discovered during testing
- Use interactive debugging tools



Specific Competencies and Skills continued:

Convert and Maintain Programs

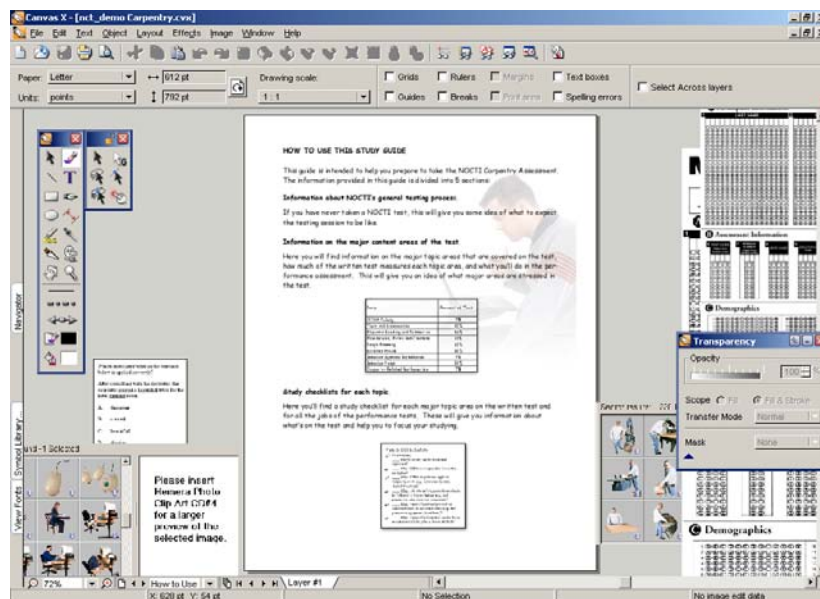
- Change existing programs when requirements change
- Correct program errors
- Update documentation for existing programs
- Provide user instructions on program modifications

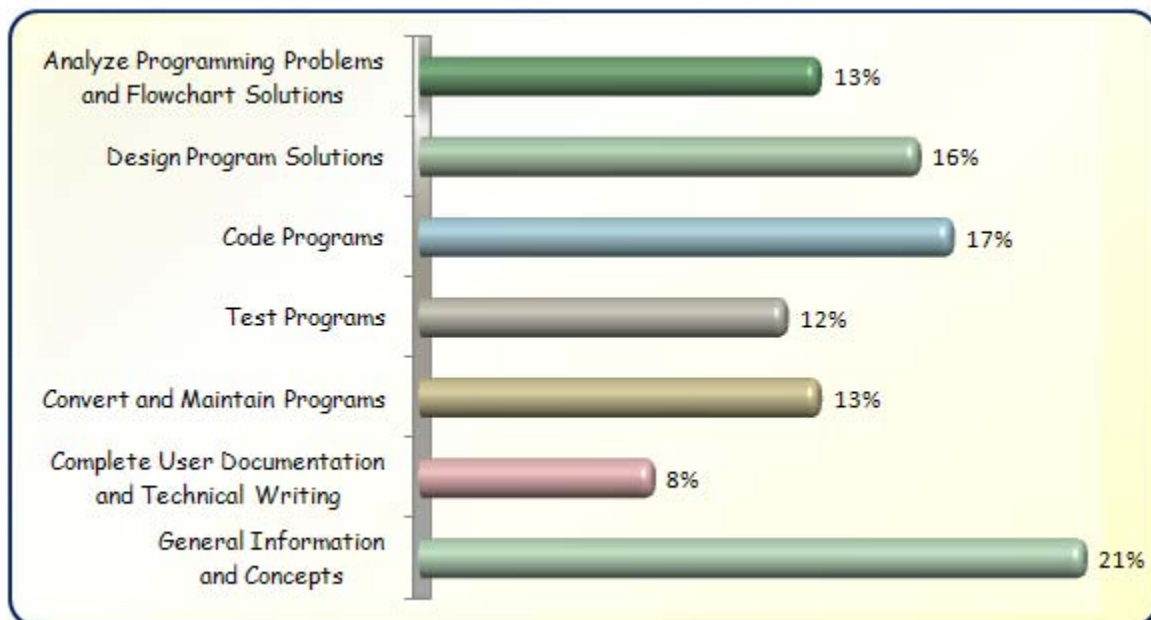
Complete User Documentation and Technical Writing

- Develop documentation narrative
- Define data use and storage
- Develop online help for users

General Information and Concepts

- Exhibit understanding of design concepts
- Describe the processing environment
- Incorporate understanding of human aspects in information systems
- Identify general information technology (IT) definitions
- Review programs for adherence to programming standards
- Exhibit understanding of data hierarchy, access methods, and manipulation
- Exhibit understanding of general programming concepts



Written Assessment:**Administration Time:** 3 hours**Number of Questions:** 129**Areas Covered:**

Sample Questions:

The source document and the input screen design should follow

- A. a right to left format
- B. inverse order
- C. an alphabetical sequence
- D. the same order

In BASIC, once data has been stored in a multi-dimension array, it can be accessed

- A. in the same manner as one-dimension arrays
- B. only through another dimension statement
- C. through two READ statements
- D. through a condition statement

When developing test data, the programmer should

- A. make sure data is in alphabetical sequence
- B. keep the data to the bare minimum to reduce test time
- C. make sure data is in numerical sequence
- D. select data that will check all aspects of the process

When writing program documentation,

- A. use abbreviated words or acronyms when possible
- B. include all user instructions
- C. include detailed program language information
- D. write concise basic code

Two types of programs that create machine codes are

- A. assembler and source
- B. compiler and object
- C. object and interpreter
- D. interpreter and compiler



Performance Assessment:

Administration Time: 3 hours

Number of Jobs: 2

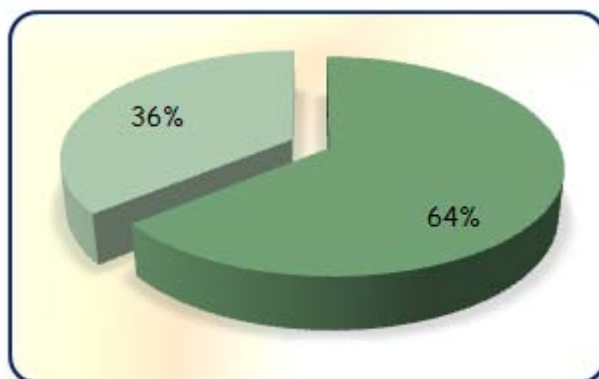
Areas Covered:

64% **Write a Program**

Input and output data, processing regular earnings, overtime, total gross pay, federal withholding tax, net pay, column placement, data, output form, and timeliness of job.

36% **Design Solution Logic**

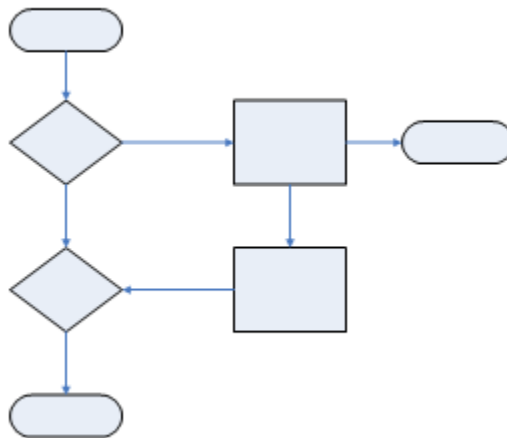
Read input file until end of file, name and date of birth in each record, count number of people in file, calculate age and average age of each person in group, draw a summary line, produce a logic flow diagram, and timeliness of job.



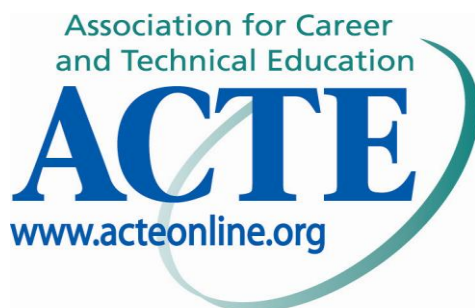
Sample Job: Design Solution Logic

Maximum Time: 30 minutes

Participant Activity: The participant will read the provided programming situation (problem definition), create a flowchart or pseudocode that solves the programming situation (problem definition), and provide a hard copy of the logic flow diagram.



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commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. *Good Luck!*