



Job Ready Assessment Blueprint

Forest Products and Processing



Test Code: 3037 / Version: 01

“Measuring What Matters”

Specific Competencies and Skills Tested in this Assessment:

Safety

- Apply knowledge of personal safety practices, including use of PPEs
- Evaluate geographic and environmental factors related to safety
- Demonstrate safe use of forestry equipment and machinery including appropriate hand signals
- Select correct fire extinguisher for fire type and demonstrate proper use
- Explain the significance of OSHA as it relates to forestry

Logging, Harvesting

- Define harvesting terminology
- Inspect and study harvest area
- Describe correct procedures for operating skidders and loaders, including proper choker setter's technique and dislodging snags
- Identify the parts of a choker
- Demonstrate proper techniques for manually felling a tree
- Determine legal load weight for over-the-road vehicles, including calculating cord volume and securing product for transport



Tree Identification

- Identify tree types using leaves, bark, and buds
- Identify species representative to geographic area

Specific Competencies and Skills continued:

Sawmill Operation

- Explain sawmill procedures, processes, and terms
- Identify various types of saws and their uses
- Scale logs, identify log scale, and explain relationship of log volume to lumber volume
- Identify wood according to species
- Size and dimension rough-cut lumber and grade dimensional lumber
- Identify lumber defects, causes, and effects
- Explain methods of drying lumber

Diesels and Hydraulics

- Identify the parts and functions of a hydraulic system
- Inspect, service, and troubleshoot hydraulic systems, including procedures for checking hydraulic leaks
- Identify engine, hydraulic, and gear oils
- Explain basic diesel engine operation, including fuel types, and troubleshooting

Chain Saws

- Identify parts of a chain saw
- Demonstrate safe transportation, use, and operation of chain saws
- Identify types of chains and explain uses
- Adjust, sharpen, and identify features of a chain saw
- Diagnose and troubleshoot chain saw problems



Specific Competencies and Skills continued:

Silviculture and Forest Management

- Define silviculture and forest management terms
- Describe the various types of forests and their potential uses
- Identify methods of timber harvesting based on forest type
- Explain stand density and stocking
- Estimate cutting ratio to determine and achieve sustained yield

Forest Ecology and Protection

- Identify environmental factors important to a forest community
- Determine tree maturity (biological and economical)
- Identify leaf diseases and their causes
- Explain how plant genetics alters tree performance
- Describe formation of forest soils
- Identify insects detrimental to forests
- Specify integrated pest management strategies
- Explain causes of deformed trees
- Identify firefighting tools and explain principles of forest fire management



Surveying

- Define surveying terminology
- Use maps, GPS, and GIS to locate boundaries and topographical information
- Identify methods of calculating elevation and slope
- Identify and use measuring devices
- Calculate acreage using common forest/surveying measuring techniques

Specific Competencies and Skills continued:

Timber Cruising

- Select and use correct timber measuring tools
- Define common forest measurement units
- Calculate basal area
- Determine board feet
- Apply techniques of timber cruising to determine stand volume
- Apply techniques of log scaling to determine log volume

Wildlife

- Identify types of wildlife commonly found in forest habitats
- Explain animal and human interaction and the impact on forest habitats
- Identify seasonal food sources
- Determine population density based on scientific data



Business Management and Employability Skills

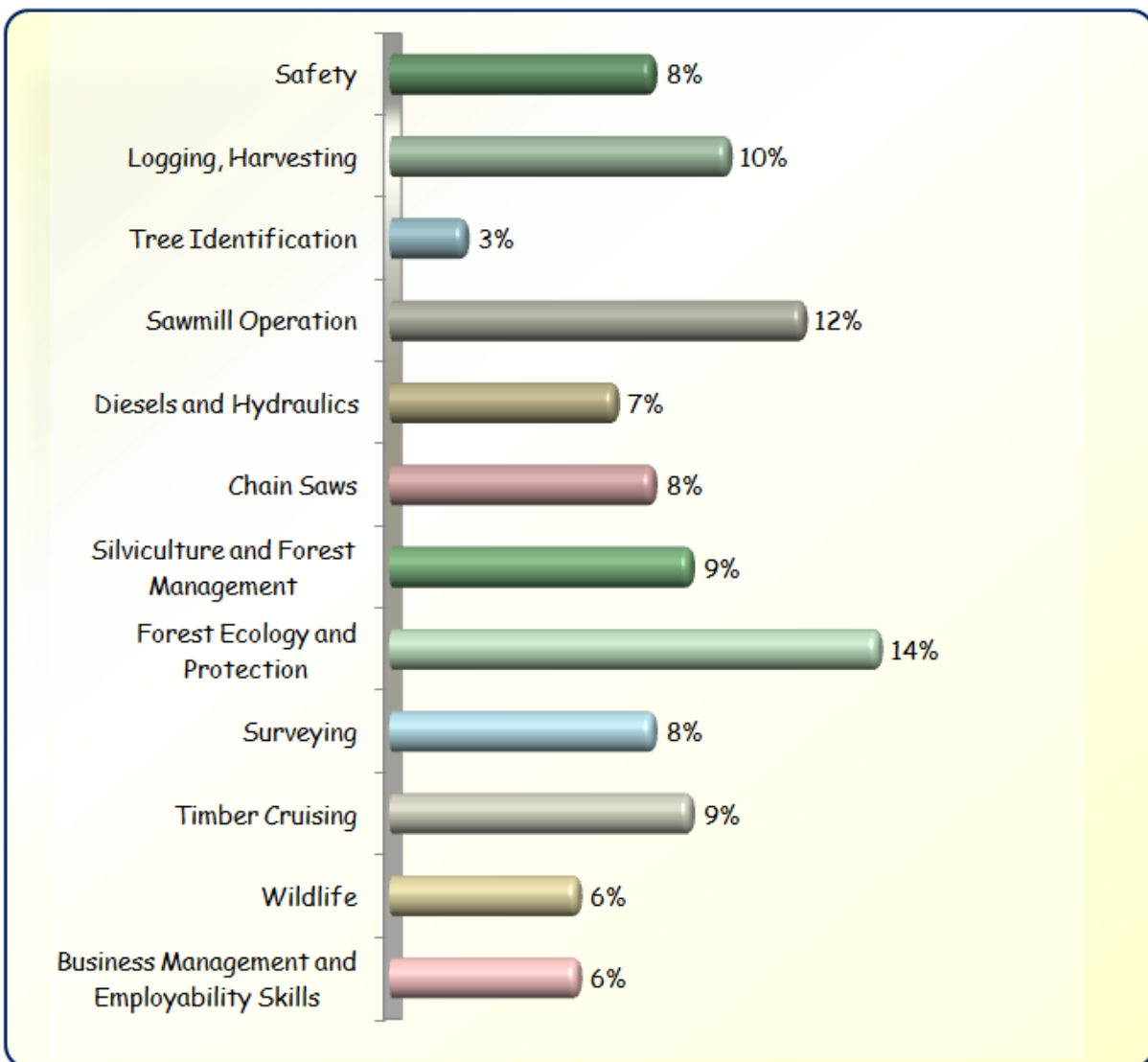
- Define business terms used to successfully operate a forest enterprise
- Explain characteristics of different types of business ownership
- Identify strategies, practices, and issues involved in successful forest enterprises

Written Assessment:

Administration Time: 3 hours

Number of Questions: 189

Areas Covered:



Sample Questions:

Trees that produce cones are called

- A. broadleaf
- B. deciduous
- C. conifers
- D. hardwoods



After processing, hardwood lumber should be

- A. stickered
- B. bundled
- C. covered
- D. waxed

To safely start a chain saw, the saw should be

- A. on the ground
- B. on the tailgate of the truck
- C. drop-started
- D. on the log

The demand by forest trees for more growing space is called

- A. survival
- B. variation
- C. diversity
- D. competition

In forestry, a common unit of linear measurement is the chain which is equal to

- A. 33 feet
- B. 66 feet
- C. 100 feet
- D. 120 feet

Performance Assessment:

Administration Time: 2 hours and 50 minutes

Number of Jobs: 7

Areas Covered:

15% **Manually Fell a Tree**

Prepare the site, use proper felling and safety procedures, and time to complete job 1.

11% **Identify Leaf, Bud, and Bark Specimens**

Identify different types of leaves, buds and bark, identify various specimens of each, and time to complete job 2.

11% **Grade Hardwood or Pine Lumber**

Identify boards by common name, grade the boards, and time to complete job 3.

11% **Scale Hardwood or Pine Logs**

Identify logs by common name, calculate volume in board feet, and time to complete job 4.

12% **Sharpen and Adjust Chain Saw**

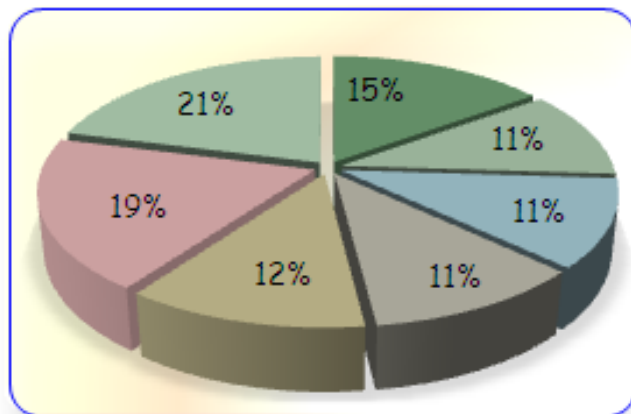
Sharpen and adjust chain saw, safety, and time to complete job 5.

19% **Calculate Acreage**

Locate bearings, pace perimeter, plot acreage on paper, compute acreage, and time to complete job 6.

21% **Plot and Analyze 1/5 Acre**

Calculate saw logs, demonstrate conversion process, identify trees, record correct volume on a per acre basis, and time to complete job 7.



Sample Job: Identify Leaf, Bud, and Bark Specimens

Maximum Time: 20 minutes

Participant Activity: The participant will identify the common names of 30 leaf, bud and/or bark specimens.



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, 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!

