

Marine Service Technician

CERTIFICATE OF QUALIFICATION EXAM BREAKDOWN

The following table shows the number of questions per General Area of Competency (GAC) and Competency on the *Marine Service Technician Certificate of Qualification Exam*.

Number of questions on each exam: 120

| Certificate of Qualification GAC/Competency | # |
|---|-----------|
| A. SAFETY | 5 |
| A1. Apply Safe Work Practices | 4 |
| A2. Respond to Workplace Emergencies | 1 |
| B. YARD MANAGEMENT | 4 |
| B1. Apply Professional Boatyard Business Practices | 1 |
| B2. Describe Role of Surveyors and Insurance Adjusters | 2 |
| B3. Manage Projects | 1 |
| C. YARD PRACTICES | 4 |
| C1. Apply Environmental Protection Practices | 1 |
| C2. Secure and Block Vessels | 2 |
| C3. Identify the Consequences of Vessel and Engine Submersion | 1 |
| D. TECHNOLOGY AND DESIGN | 9 |
| D1. Define Trade Terminology and Concepts | 1 |
| D3. Describe Design Basics | 1 |
| D4. Describe Principles of Powering | 2 |
| D5. Describe Wood Vessel Construction | 1 |
| D6. Describe FRP Vessel Construction | 2 |
| D7. Describe Metal Vessel Construction | 2 |
| E. TRADE MATHEMATICS | 5 |
| E1. Apply Trade Math | 4 |
| E2. Perform Measurement Operations | 1 |
| F. TOOLS AND EQUIPMENT | 14 |
| F1. Use Hand Tools | 2 |

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| F2. Use Portable Power Tools | 3 |
| F3. Use Stationary Power Tools | 3 |
| F4. Use Compressed Air Delivery Systems | 2 |
| F5. Use Spray Equipment | 2 |
| F6. Maintain Workplace Electrical Equipment | 2 |
| G. MATERIALS | 16 |
| G1. Select Wood Repair Materials | 2 |
| G2. Select Composite Materials | 3 |
| G3. Use Thermoplastics | 2 |
| G4. Select Marine Metals | 2 |
| G5. Select Fasteners | 2 |
| G6. Use Adhesive and Bedding Compounds | 3 |
| G7. Use Abrasive Materials | 2 |
| H. MARINE METALS | 6 |
| H1. Drill and Cut Metals | 3 |
| H4. Control Corrosion in Metals | 3 |
| I. WOODWORK | 6 |
| I1. Assess Rot and Deterioration Damage | 1 |
| I2. Perform Structural Repairs | 1 |
| I3. Perform Fairing and Cosmetic Operation | 1 |
| I6. Perform Cold Molding | 1 |
| I7. Perform Wood Laminating | 1 |
| I9. Sheath Wood Structure with Composite Materials | 1 |
| J. COMPOSITE | 11 |
| J1. Fabricate FRP Tooling | 1 |
| J2. Repair FRP Structures | 3 |
| J3. Repair Keel Impact Damage | 2 |
| J4. Repair FRP Rudders and Stabilizers | 1 |
| J6. Perform Vacuum Bag Laminating | 1 |
| J8. Maintain Gel Coat Surfaces | 1 |
| J9. Repair Gel Coat Damage | 2 |
| K. MECHANICAL SYSTEMS | 11 |
| K1. Identify Engine and Drivetrain Components | 1 |
| K2. Describe Engine Room Layout and Ventilation | 1 |

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| K3. Remove and Install Engines | 1 |
| K4. Perform Engine Pre-Start Inspection | 1 |
| K5. Service Marine Engine Components | 1 |
| K6. Service Engine Controls, Alarms and Gauges | 1 |
| K7. Service Steering Gear | 1 |
| K8. Service Engine Mounts, Shafting and Alignment | 1 |
| K9. Service Propellers | 1 |
| K10. Install and Service Hydraulic Systems | 1 |
| K11. Service Engine Starting and Charging Systems | 1 |
| L. ELECTRICAL | 8 |
| L1. Calculate Current, Resistance and Voltage | 2 |
| L2. Perform Basic Wiring and Testing Procedures | 2 |
| L3. Install and Service DC Power Supply and Distribution Systems | 3 |
| L4. Install and Service AC Power Supply and Distribution Systems | 1 |
| M. ELECTRONICS | 2 |
| M1. Install Basic Electronics and Networks | 2 |
| N. INSTALLATIONS | 11 |
| N1. Install Hardware and Fittings | 2 |
| N2. Install Thru-Hulls and Underwater Equipment | 3 |
| N3. Install and Service Fresh Water Systems | 2 |
| N4. Install and Service Waste Water Systems | 2 |
| N5. Describe Propane Distribution Systems | 1 |
| N6. Install and Service Heating Systems | 1 |
| O. RIGGING | 2 |
| O1. Install and Service Standing Rigging | 1 |
| O2. Install and Service Running Rigging | 1 |
| P. FINISHING AND PAINTING | 6 |
| P1. Apply Utility Coatings by Brush and Roller | 1 |
| P2. Apply Anti-Fouling Paints | 2 |
| P3. Mark and Mask Waterlines and Stripes | 1 |
| P4. Prep and Prime for Multi-Component Topcoats | 1 |
| P7. Brush-Apply Gloss Paints and Varnishes | 1 |
| Total: | 120 |

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