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| --- | --- | --- | --- |
| Seafarer ID |  | Date and Time |  |
|  | | | |
| Name |  | Exam location |  |
|  |  |  |  |
| Duration |  | Examiner |  |

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| Certificate Type |  | Result |  |
|  |  |  |  |
| Certificate Capacity | Engineer Class 1 (Steam and Motor) | Purpose |  |

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| **Boilers** | | | **Steam Propulsion** (cont) | | | **Refrigeration Systems** (cont) | | |
| Water gauge | | | Turbo electric | C1 |  | Compressors | C1 |  |
| Local | A1 |  | Turbo alternators | | | **Materials** | | |
| Remote | A1 |  | Operation and construction | B1 |  | Properties | C1 |  |
| Manhole doors | A1 |  | Associated Systems & Equipment | B1 |  | Destructive and non-destructive testing | C1 |  |
| Feed check V/Vs | A1 |  | **Water treatment** | | | **Propellers and Thrusters** | | |
| Blowdowns V/Vs | A1 |  | Evaporators | B1 |  | Fixed pitch | | |
| Safety Valves | A1 |  | Distillers | B1 |  | Attachment | B1 |  |
| Operations | | | Ion exchange | B1 |  | Survey | B1 |  |
| Furnace purging | A1 |  | Reverse osmosis | B1 |  | Controllable pitch | | |
| Priming and foaming | B1 |  | Testing | B1 |  | Attachment | B1 |  |
| Raising steam | A2 |  | Chemicals | B1 |  | Operating system | A1 |  |
| Shutting down, lay up | A2 |  | **Feed Systems** | | | Survey | B1 |  |
| Superheater fires | A1 |  | Arrangement | B1 |  | Stern tube bearing | B1 |  |
| Uptake fires | A1 |  | Feed pumps | B1 |  | Screw Shafts | B1 |  |
| Water hammer | A2 |  | Deaerators and heaters | B1 |  | Cross thrusters | | |
| Water testing | A1 |  | Air ejector | B1 |  | Fixed and CP prop | C1 |  |
| Construction arrangement | B1 |  | Ext pumps | B1 |  | Voith Schneider etc | C1 |  |
| Automatic controls | B1 |  | Condenser | B1 |  | DP systems | C1 |  |
| Survey | B1 |  | Water testing | B1 |  | **Dry Docking** | | |
| Combustion | B2 |  | Auto controls | B1 |  | Supply of fire fighting water | A1 |  |
| Associated Systems & Equipment (EA) | B2 |  | Corrosion | C1 |  | Supply of electrical power | C1 |  |
| **Diesel Propulsion** | | | **Steering Gears & Rudders** | | | Stability | A2 |  |
| Operation | | | Emergency Operation | A1 |  | Measurement of weardown, clearances | B1 |  |
| Air line explosion | A1 |  | Construction | B1 |  |
| Combustion | B1 |  | Control | B1 |  | Measurement of alignment | B1 |  |
| Crankcase explosion | A1 |  | Lubrication | B1 |  | Certificates of survey | | |
| Emergency | A1 |  | Survey | B1 |  | Annual | B1 |  |
| Fuel consumption | B1 |  | **Air compressors** | | | Classification | B1 |  |
| Manoeuvring | A1 |  | Safety devices | | | Load line | B1 |  |
| Parameters | B1 |  | Air line | A1 |  | Safety Construction | B1 |  |
| Scavenge fires | A1 |  | Compressor | A1 |  | Safety Equipment | B1 |  |
| Shutting down | A1 |  | Receiver | A1 |  | Ships Structure | | |
| Warming through | A1 |  | Operation | A2 |  | Cavitation | C1 |  |
| Associated Systems & Equipment | B1 |  | Lubrication | B1 |  | Cleaning, protection | C1 |  |
| Slow, medium and high speed | | | Starting air | B1 |  | Corrosion, erosion | C1 |  |
| Alignment | B2 |  | Service and control air | B1 |  | Mechanical damage | C1 |  |
| Automation | B1 |  | Receivers | B1 |  | **Tanks** | | |
| Combustion | B1 |  | Automation | B1 |  | Safety precautions | | |
| Construction | B1 |  | Survey | B1 |  | Entering | A1 |  |
| Diesel electric | B1 |  | **Fire** | | | Pressure Testing | B1 |  |
| Gear boxes and clutches | B2 |  | Prevention | A1 |  | Survey | B1 |  |
| Lubrication | B1 |  | Extinction | | | **Stability** | | |
| Manoeuvring controls | A1 |  | BA sets | A1 |  | Free surface | A1 |  |
| Protection devices | A1 |  | Hoses extinguishers | A1 |  | Damage control | B1 |  |
| Survey | B1 |  | Procedures | A1 |  | **Electricity** | | |
| Thrust bearing | B1 |  | Fixed installations | A1 |  | Emergency generators | | |
| Timing | B1 |  | Detection | | | Construction | C1 |  |
| Turbo chargers | B1 |  | Sensors, systems | B1 |  | Operation | A1 |  |
| Vibration dampers | B1 |  | UMS requirements | B1 |  | Statutory requirements | C1 |  |
| Diesel alternators | B1 |  | Structural fire protection | C1 |  | Testing | A2 |  |
| Water treatment | B1 |  | **Pumping Systems** | | | Fault detection | A2 |  |
| **Steam Propulsion** | | | Fire main | A1 |  | AC generators | | |
| Operation | | | Oily water separator | A1 |  | Construction | C1 |  |
| Emergency | A1 |  | Bunkering | A1 |  | Control equipment | A2 |  |
| Manoeuvring | A1 |  | Bilge and ballast systems | A2 |  | Fault detection | A2 |  |
| Parameters | B1 |  | Salt water system | B2 |  | Operation | A2 |  |
| Shutting down | A1 |  | Fresh water cooling | B2 |  | Protection devices | A1 |  |
| Warming through | A1 |  | Sewage plant | B1 |  | DC Generators | | |
| Turbines | | | Fuel oil and diesel oil systems | B1 |  | As per AC | B2 |  |
| Alignment | B2 |  | Inert gas system | B1 |  | Distribution | | |
| Automation | B1 |  | Lubricating oil system | B1 |  | Distribution boards | B1 |  |
| Flex coupling | B1 |  | Cargo system | C2 |  | Drip proof | B1 |  |
| Gear boxes | B1 |  | Sanitary system | C2 |  | Electric shock | A1 |  |
| Gland steam | B1 |  | Purifiers, clarifiers | B1 |  | Emergency switchboard | B1 |  |
| Impulse, reaction | C1 |  | Heaters | C1 |  | Fault detection | A2 |  |
| Lubrication | B1 |  | Pumps, positive displacement, etc | B1 |  | Flame proof | B1 |  |
| Manoeuvring V/V | B1 |  | **Refrigeration Systems** | | | Intrinsically safe | B1 |  |
| Protection devices | A1 |  | Safety | A1 |  | Isolation | A1 |  |
| Survey | B1 |  | Direct and indirect expansion | C1 |  | Main switchboard | B1 |  |
| Thrust bearing | B1 |  | Air conditioning | C1 |  | Non-earthed and earth neutral | C1 |  |

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| **Electricity** (cont) | | |
| Protection devices | A1 |  |
| Transformers | C1 |  |
| Two wire | C1 |  |
| Motors | | |
| AC: single and three phase | B1 |  |
| Batteries | B1 |  |
| **Deck Machinery** | | |
| Davits and winches | A2 |  |
| Windlass | B1 |  |
| Cranes | C1 |  |
| Derricks | C1 |  |
| Hatches | B1 |  |
| Other | C1 |  |
| **Automation and Control** | | |
| Bridge control | A2 |  |
| UMS | | |
| Fault detection | A2 |  |
| Requirement | C1 |  |
| Transfer from manual to auto | A1 |  |
| Measuring devices | C1 |  |
| Testing | B1 |  |
| Calibration | B1 |  |
| Survey | B1 |  |
| **Machinery Records** | | |
| Oil Record Book | B1 |  |
| Log books | C1 |  |
| Trend recording | C1 |  |
| Official records | C1 |  |
| Combustion analysis | C1 |  |
| Condition monitoring | B1 |  |
| **Maritime Law** | | |
| MARPOL, SOLAS | C1 |  |
| ISM Code | C1 |  |
| Marine Orders | C1 |  |
| ISPS Code | C1 |  |
| Other | C1 |  |
| **Management** | | |
| Training of Engine-room staff | B1 |  |
| Mgt and organization of ER staff / dept | B1 |  |
| **English Language** | | |
| Comprehension of the English language | A1 |  |