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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 | [ ]  |