Questions should be framed managing the Engine Department.

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Diesel propulsion up to 1500kW** | | | **Fire** | | | Safety and checks of shore power leads | B |  |
| Operation | | | Prevention | A |  |
| * Airline explosion | A |  | Extinction | B |  | Distribution (AC and DC) | B |  |
| * Combustion | C |  | BA sets | C |  | Distribution boards | C |  |
| * Crankcase explosion | A |  | Hoses, extinguishers | A |  | Load sharing | B |  |
| * Engine maintenance | A |  | Procedures | A |  | Electric shock | A |  |
| * Fuel consumption | C |  | Fixed installations | A |  | Emergency switchboard | B |  |
| * Manoeuvring | B |  | Detection: sensor, system | B |  | Fault detection | B |  |
| * Parameters | B |  | International shore connection | B |  | Electrical equipment in hazardous  areas | C |  |
| * Start–up and warming through | B |  | **Life saving appliances (LSA)** | | |
| * Shutting down | A |  | Launching arrangements | A |  | Electrical safety procedures | A |  |
| Associated systems and equipment | C |  | Inspection | A |  | Isolation | A |  |
| Medium and high speed | | | Frequency of regulatory muster and drills as per NSCV and STCW | A |  | Main switchboard | B |  |
| * Alignment | B |  | Earth fault detection and rectification | C |  |
| * Automation | C |  | Maintenance of LSA | B |  | Protection devices (RCDs) | A |  |
| * Gear boxes | C |  | **Pumping systems (aux machinery systems up to 1500kW)** | | | Blackout | B |  |
| * Diesel cycle | B |  | Single phase and three phase | C |  |
| * Cooling systems and monitoring | B |  | Fire main | C |  | Motor AC: single and three phase | C |  |
| * Lube oil systems and monitoring | A |  | Oily water separator | B |  | **Deck machinery** | | |
| * Engine performance | B |  | Bunkering systems | B |  | Operate | A |  |
| * Protection devices | A |  | Bilge and ballast systems | A |  | Winches and windlasses | C |  |
| * Engine bearings | C |  | Salt water cooling systems | B |  | Routine maintenance | B |  |
| * Timing | C |  | Fresh water cooling systems | C |  | Safe operating procedures | B |  |
| * Turbochargers | C |  | Diesel oil systems | B |  | Protection devices | C |  |
| * Vibration dampers | C |  | Sewage systems | C |  | Fault finding | A |  |
| Diesel alternators | B |  | Keel cooling system, box coolers | C |  | **Automation and control** | | |
| Water treatment (jacket cooling) | | | Purifiers and heaters | C |  | Bridge control | A |  |
| * Testing | C |  | Pumps, types, principles and operation | C |  | Transfer from ER to bridge | A |  |
| * Chemicals | C |  | Measuring devices (Press and Temp) | C |  |
| **Power transmission** | | | Back flooding prevention | A |  | **Machinery records** | | |
| Gear train | B |  | Valve types and servicing | B |  | Oil record book | B |  |
| Clutches | C |  | **Refrigeration systems** | | | Log books | C |  |
| Lubrication and cooling | B |  | Safety and environmental hazards | A |  | Planned maintenance | A |  |
| Fault identification | B |  | Construction and operation | C |  | Certificates and survey | B |  |
| Causes of vibration and undue wear | B |  | Fault finding and trouble shooting | A |  | **Nav Act and maritime law** | | |
| **Propellers and thrusters** | | | **Dry docking and maintenance** | | | *Navigation Act 2012* | B |  |
| Alignment | C |  | Planning and preparing | B |  | *Marine Safety (Domestic commercial Vessel) National Law Act 2012* | A |  |
| Fixed and controllable pitch propeller types of fitting | C |  | Use manufacturers’ manuals | C |  |
| Lock out and isolation procedures | B |  | NSCV | B |  |
| Screw shaft | C |  | Hull inspection and maintenance | B |  | Marine Orders (500 series) | C |  |
| Tail or propeller shaft | C |  | **Confined spaces** | | | MARPOL | B |  |
| Thrusters | | | Risk assessment | A |  | SOLAS | C |  |
| * Azimuth (ASD) and other types | C |  | Ventilation, testing, monitoring | B |  | Safety management systems | C |  |
| **Steering gears and rudders** | | | Entry and closing up | B |  | Certificates of operation | B |  |
| Emergency operation | A |  | **Tanks** | | | **Manage engine room** | | |
| Rudder / bearings | C |  | Safety precautions | A |  | Training of engine-room staff | B |  |
| Gland packing / seals | B |  | Petrol and diesel | B |  | Management and organisation of ER staff | C |  |
| Testing and maintenance | B |  | LPG cylinder storage | B |  |
| **Bunkering fuel and lube oils** | | | LPG: prevention of fires/explosion | A |  | Safe work practices | B |  |
| Plan and prepare vessel | A |  | **Stability** | | | Safe engineering watch | B |  |
| Bunkering procedures | A |  | Common terms | B |  | Leadership and teamwork skills | A |  |
| Pollution prevention | A |  | Free surface effect | C |  |  | | |
| Reporting and managing emergency | A |  | Damage control | B |  |
| Dealing with oil spill and clean up | A |  | **Electrical systems** | | |
| Garbage management | A |  | Definitions and terms | A |  |
| **Air compressors** | | | Colour coding system | C |  |
| Safety devices | | | Personal safety | B |  |
| * Airline | A |  | Batteries | | |
| * Compressor | A |  | * Types | C |  |
| * Receivers | A |  | * Series and parallel | B |  |
| Type | B |  | * Charging | C |  |
| Operation | B |  | * Maintenance | B |  |
| Danger of oil contamination | C |  | * Battery fires/explosion | A |  |
| Service and control air | B |  | Shore power | B |  |
| Automation | C |  |