AMMV26 MARINE DIESEL ENGINES-II

UNIT-1 FUEL PUMPS AND METERING DEVICES

1.1 Jerk and common rail systems, fuel injection systems helical groove and spill valve type fuel pumps, system for burning heavy oil in slow and medium speed Marine engines,
1.2 V.I.T. Super vit & Electronic injection systems.
1.3 Effects of viscosity on liquid fuel combustion.
1.4 Measuring equipment and its working principle.
1.5 Necessity of variable fuel injection system.
1.6 Procedure of application on modern slow speed long stroke engine.
1.7 Necessity for adoption of fuel quality setting system.
1.8 Incorporation of FQSL along with the V.I.T. system on the engine., Governors

UNIT-2 SMANOUVERING SYSTEMS, INDICATOR DIAGRAMS AND POWER CALCULATIONS

2.1 Starting and reversing systems of different Marine diesel engines with safety provisions Including Main Engine auto slowdown and shutdown.
2.2 Restoration of operations.
2.3 Constructional details of indicator instrument, significance of diagram, theoretical knowledge of power calculations, fault detection, simple draw cards and out of phase diagrams,
2.4 Power balancing, performance characteristic curves, test bed and sea trials of diesel engines.

UNIT-3 MEDIUM SPEED ENGINES

3.1 Different types of medium speed marine diesel engines, couplings and reduction gear used in conjunction with medium speed engine, development in exhaust valve design,
3.2 V type engine details, crankcase inspection.,
3.3 Depth gauge and crankshaft defelections.

UNIT-4 FORCES AND STRESSES

4.1 Balancing, overloading, different types of vibration & its effects,
4.2 Forces and stresses acting on various components of I.C. Engine parts.

UNIT-5 TYPE OF ENGINES

5.1 Construction and Operation of Sulzer, B&W, MAN, Piel-stick, Doxford, Main Propulsion diesel engines- Latest development in marine diesel engines
5.2 Camless concept, improvement in design for increased TBO U.M.S. Operation of ships.

References Books:

1. S. H. Henshall, “Medium and High Speed Diesel Engines for Marine Use”, 1st Edition, Institute of Marine Engineers, Mumbai, 1996.
2. A.B. Kane, “Marine Internal Combustion Engines”, 1st Edition, Shroff Publishers & Distributors, Mumbai, 1984.