

Indian Maritime University
December 2022 End Semester Examinations

B Sc (NS)
Semester IV
UG21T4405

MARINE ENGINEERING AUTOMATION & CONTROL SYSTEM PAPER-II

Total Marks 70

TIME 3 HRS

Date – 01.12.2022

Pass Marks - 35

Part A – (10 X 01 Mark)

Choose the correct Answer (Question 1-5)

- (1) Which of the following is/are Internal Combustion Engine(s)
(A) Marine Diesel Engine (B) Steam Turbines (C) Steam Engine (D) All of them
- (2) In a ship Fuel oil from shore is directly received in
(A) Service Tank (B) Settling Tank (C) Bunker Tank (D) Any of them
- (3) Slipping clutch is a safety device fitted in
(A) Windlass (B) Boiler (C) Air Compressor (D) Auxiliary Engine
- (4) Main Fire pumps are usually
(A) Screw Pump (B) Gear Pump (C) Centrifugal Pump (D) Any of them
- (5) Thermostatic Expansion valve is used in
(A) Refrigeration System (B) Steering gear (C) Stern tube (D) Deck crane

Answer following questions in one word or sentence (Question No 6-10)

- (6) What is the requirement of Auxiliary Engine on board?
- (7) Cross head lubrication is employed in which type of engines
- (8) Define propeller Pitch
- (9) What is Specific Fuel Consumption
- (10) Which device is used for measurement of hydrocarbon gas content in a sample of given atmosphere.

Part B – Answer all Five (05 X 02 Marks)

- 11) Write the names of any two deck machineries in a container ship?
- 12) What is priming of centrifugal pumps?
- 13) Distinguish between open loop and closed loop control system
- 14) What is single failure criteria in Steering System

15) Write any two desirable properties of refrigerants?

Part C – Answer Any 5 (05 X 10 Marks)

- 16) Describe 5 important components of a two stroke Marine Diesel Engine and state their functions (10M)
- 17) What are the desirable properties of Marine fuel (10M)
- 18) Sketch and describe a two ram electro hydraulic steering gear (10M)
- 19) (a) Describe the process and different methods of scavenge system employed in marine diesel engines (5M)
- (b) Discuss the purpose of turbocharging? (5M)
- 20) Describe the working of a centrifugal Pump and state various onboard applications of centrifugal Pumps
- 21) Describe a suitable Inert Gas system for Cargo tank protection in a VLCC
- 22) Write Short notes on
- (a) Heavy weather Precautions for main propulsion plant (5M)
- (b) Single Duct Airconditioning system (5M)