

Reg. No.

--	--	--	--	--	--	--	--	--	--

B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Seventh Semester

MR16003 – ADVANCED MARINE HEAT ENGINES*(Marine Engineering)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	CO	RBT
1. State the purpose of combining heat engine plants.	1	AP
2. Compare SFC and power to weight ratio of Steam Turbine and Gas Turbine propulsion plant.	1	AN
3. How gaseous fuel combustion differ from liquid fuel combustion?	2	AP
4. What do you understand by the term “Diffusion Combustion”	2	U
5. State the advantages of VGT.	3	U
6. Mention the causes of T/C surging.	3	AP
7. Differentiate open and closed cycle Gas Turbines.	4	AP
8. What are the major pollutants from Gas Turbine engines?	4	U
9. How intelligent engines differ from engines with camshaft ?	5	AP
10. State the advantages of CRDI.	5	U

PART B - (5 X16 = 80 Marks)

11. (a) Compare in all aspects various combination of Marine propulsion plants. **(16)** **1** **AN**

(OR)

- (b) Explain the advantages and disadvantages of using medium speed engines over slow speed engines for marine propulsion. **(16)** **1** **AN**

12. (a) (i) Explain working of Dual fuel engines and state their advantages. (8) 2 AP
- (ii) Write short notes on “Simulation of IC Engine processes”. (8) 2 AP
- (OR)**
- (b) (i) Explain stages of combustion in Diesel engine with the help of pressure – crank angle diagram. (16) 2 AP
13. (a) Describe the causes of scavenge fire, steps to be taken in the event of scavenge fire and methods of preventing the same. (16) 3 AN
- (OR)**
- (b) Explain causes of surging in turbochargers their effect on engine performance and its prevention. (16) 3 AN
14. (a) Discuss advantages and disadvantages of using Gas turbine engines instead of Diesel engines for marine propulsion. (16) 4 AN
- (OR)**
- (b) Discuss working of Marine Gas turbine engine with neat sketches of arrangements of components. (16) 4 AN
15. (a) Describe with sketch working of exhaust gas scrubber used on board ships used for controlling emissions. (16) 5 AP
- (OR)**
- (b) Explain in detail techniques used for reduction of NO_x emission from Diesel engines. (16) 5 AP