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

Fifth Semester

MR16504– MARINE ELECTRICAL MACHINES – II*(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 function of break magnet in an energy meter.	1	U
2. What is use of signal generators?	1	U
3. What is the effect of armature reaction in case of alternator?	2	U
4. State the conditions of parallel operation of alternators.	3	U
5. Why synchronous Motors are not self starting?	4	U
6. What is a synchronous condenser?	4	U
7. What is the effect of increasing the rotor resistance on starting current and torque?	4	U
8. What is induction Generator?	4	U
9. What is the necessity of starter in three phase induction motor?	5	U
10. Name the method of speed control of cage type induction motor.	5	R

PART B - (5 X16 = 80 Marks)

11. (a) Explain the inductance and capacitance measurement using bridge method. **(16)** **1** **U**
- (OR)**
- (b) (i) Write notes on Location of cable faults. **(8)** **1** **U**
- (ii) Write short notes on CRO. **(8)** **1** **U**
12. (a) When two alternators are running in parallel, discuss the effect of **(16)** **2** **AP**
- (i) Increasing excitation of one alternator
- (ii) Increase fuel to the one of the alternators?

(OR)

- (b) A 100 kVA, 3000V, 50Hz 3 phase star connected alternator has effective armature resistance of 0.2 ohm. A field current of 40A produces a short circuit current of 200A and an open circuit e.m.f of 1100V (line value). Calculate the full load percentage regulation at a Power factor of 0.8 lagging? **(16) 2 AP**
13. (a) (i) Explain the construction and working of a synchronous motor. **(8) 3 U**
 (ii) State the Merits, demerits of synchronous motors over other motors. **(8) 3 U**
- (OR)**
- (b) Explain the effect of increasing excitation at constant load for a synchronous motor? Draw the necessary phasor diagram? **(16) 3 U**
14. (a) (i) Describe briefly the construction of stator and slip ring rotor of a 3-phase induction motor. **(8) 4 U**
 (ii) Deduce and discuss the equivalent circuit of 3-phase induction motor. **(8) 4 U**
- (OR)**
- (b) (i) A 3300V, 10 pole, 50HZ three phase star connected induction motor has slip ring rotor resistance per phase =0.015Ω and standstill reactance per phase =0.25 Ω .If the motor runs at 2.5 percent slip on full load ,find the ratio of maximum torque to full load torque. **(8) 4 AP**
 (ii) Explain how the rotating magnetic field is produced by three-phase currents. **(8) 4 AP**
15. (a) Explain the following methods of speed control scheme of induction motor. **(16) 5 U**
 (i) Cascaded connection.
 (ii) Slip power recovery scheme.
- (OR)**
- (b) Explain the constructional features and principle of operation of a capacitor start and run single phase induction motor. **(16) 5 U**