

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 181802****Subject Name: Marine Electrical Technology and Electrical Measurement****Date: 08/05/2012****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is electric propulsion system? List out advantages and disadvantages of electric propulsion systems. **07**
(b) What is transducer? Give classification of transducers in detail. **07**
- Q.2** (a) Write short note on deflection, control and damping devices used in moving coil type instruments. **07**
(b) With a suitable diagram explain the electro-hydraulic steering gear control system. **07**
- OR**
- (b) Explain Electronic control for a steering system with suitable diagram. **07**
- Q.3** (a) Write short note on diesel electric propulsion system. **07**
(b) With a neat diagram explain a supervisory control system for fire detection and suppression. **07**
- OR**
- Q.3** (a) With a neat diagram explain the turbo-electric propulsion system. **07**
(b) What is meant by breakdown maintenance, planned maintenance and condition monitoring? **07**
- Q.4** (a) Describe the constructional detail of an electro dynamometer type wattmeter, derive the expression for torque when the instrument is used on a.c. **07**
(b) Explain the working principal of thermocouple instruments. And also describe contact type, non contact type and bridge type thermo-elements. **07**
- OR**
- Q.4** (a) Describe the working and constructional details of an attraction type moving iron instrument. Also discuss its advantages and disadvantages. **07**
(b) List out various temperature measuring electrical transducers and describe any one detail. **07**
- Q.5** (a) Describe Maxwell's bridge for measurement of self inductance. Also derive equation for balance condition. **07**
(b) Explain in brief (i) CRO (ii) VTVM. **07**
- OR**
- Q.5** (a) Describe Schering bridge for measurement of unknown capacitance. Also derive equation for balance condition **07**
(b) A three-phase 500V motor load has a power factor of 0.4. Two watt-meters are connected to measure the input power. They show the input power to be 30kw. Find the reading of each watt-meter. **07**
