

# Electronics & Computer Science

S.E. Sem. III [MARINE]

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## EVALUATION SYSTEM

	Time	Marks
<b>Theory Exam</b>	3 Hrs.	100
<b>Practical Exam</b>	–	–
<b>Oral Exam</b>	–	–
<b>Term Work</b>	–	–

## SYLLABUS

### 1. Thyristors and Their Application

Principle of operation, characteristic, symbol, specification, Thyristor ratings, construction, two transistor analogy of SCR, DIAC and TRIAC characteristic, light dimmer control using DIAC / TRIAC circuits, UJT characteristic, UJT Triggering circuits, half controlled and full controlled rectifier using SCR.

### 2. Diodes, Transistors and Operational amplifier, Oscillators, Transistor power amplifier

Characteristics of Diode, Half, Full and Bridge rectifiers, Zener Diodes, Tunnel Diodes Clipping, Clamping, Transistors configuration, Transistor as a switch, Effect of negative and positive feedback in transistor amplifier Regulated power suppliers. Series regulators, shunt regulator. Operational amplifier block diagram, ideal op-amp characteristics, inverting and non-inverting amplifiers. Conditions of Oscillations, phase shift oscillator, Wien Bridge Oscillator, Crystal Oscillators. Class A, B, C Power Amplifier, efficiency distribution Design Theory, Practical Complimentary Push – pull amplifier.

### 3. Inverters, Choppers, Dual Converters and Cycloconverters

Inverters, Choppers, Dual Converters, Cycloconverters Series and Parallel inverters, different types of choppers, speed control of DC Motor and induction motor using chopper.

### 4. Solid State Control of d.c. and a.c. Motors

Introduction, Advantages of Electronic Control of Devices, D.C. Motor Speed Control, Speed Control of D.C. Shunt Motor using Thyristor Technology, Over-voltage and over current protection of D.C. Motors, An A.C. Motor Control.

### 5. Introduction of Microprocessors

Architecture of Intel 8085 Microprocessor, Instruction Set of 8085 Microprocessor and Simple Program Writing, Interfacing a Microprocessor with Memory and Input / Output Devices, Applications of Microprocessors.

### 6. Operating Systems Concepts

Introduction to OS

Introduction to processes, memory and file systems.

Examples of operating systems like LINUX, UNIX, WINDOWS.

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**References :**

1. Industrial Electronics and Control (*S.K. Bhattacharya / S. Chatterjee*) – Tata McGraw Hill Publishing Company Limited.
2. Electronic in Industry (*Chute & Chute*)
3. Thyristors and their application (*Ramamurthy*)
4. Operating Systems (*D.M. Dhamdhare*)
5. Operating Systems (*Tannanbam*)
6. Industrial Electronics (*James Humphries, Leslie Sheets*) – 4e–Delmar Publications.
7. Industrial Electronics (*Biswanth Paul*) – PHI
8. Industrial Electronics for Technicians (*J.A. Sam Wilson Joseph Rissi*) – Prompt Publishing.
9. Thyristorid Power Control (*Dubey*)
10. Operating Systems (*Godbole*)
11. Operating Systems (*Galvin*)

