

**ADMISSION-CALL-0761-4007445 / 6541666 / 09425068494**  
**E-MAIL:-[mnpedu@rediffmail.com](mailto:mnpedu@rediffmail.com)**  
**WEBSITE:- [www.maanarmadaedu.org](http://www.maanarmadaedu.org)**

**SYLLABUS**  
**DIPLOMA IN ELECTRICAL ENGINEERING**  
**SEMESTER – VI**

**POWER PLANT ENGINEERING**

**Sub. Code: DEE 601**

**Credits: 02**

**Total Marks: 100**

**Minimum Pass Marks: 40%**

**Internal Assessment: 40 Marks**

**University Examination: 60 Marks**

**Unit 1:**

Energy Resources and their Availability; Types of Power Plants, Selection of the Plants, Electrical Safety.

**Unit 2:**

Schematic Arrangement of Hydroelectric Power Station; Construction and Operation of Different Components of Hydro-Electric Power Plants; Site Selection; Comparison with other Types of Power Plants.

**Unit 3:**

Steam Fundamentals; Schematic Arrangement; Choice of Site; Efficiency of Steam Power Plants; Equipments; Boilers & Steam Generators; Boiler Auxiliaries.

**Unit 4:**

Constant Pressure Gas Turbine Power Plants; Arrangements of Combined Plants: Steam & Gas Turbine Power Plants; Re-Powering Systems: with Gas Production from Coal, Organic Fluids; Parameters Affecting Thermodynamic Efficiency of Combined Cycles.

**Unit 5:**

Principles of Nuclear Energy; Basic Nuclear Reactions; Nuclear Reactors Fission Theory; Steam Supply; Operation and Maintenance; Reactor Safety; Cooling Towers; Water Treatment; Advantages and Limitations; Waste Disposal.

**Unit 6:**

Load Curve; Different Terms and Definitions; Cost of Electrical Energy; Tariffs Methods of Electrical Energy; Performance & Operating Characteristics of Power Plants; Incremental Rate Theory.

**Suggested Readings:**

1. Power station Engineering and Economy, Bernhardt G.A. Skrotzki and William A. Vopat, Tata McGraw Hill.
2. Power Plant Engineering, P.K. Nag, Tata McGraw Hill.
3. Power Plant Technology, M.M. El-Wakil, McGraw Hill.

**Note:**

1. Eight questions are to be set. Students will have to attempt five questions in all.
2. Use of non-programmable scientific calculator is allowed in Examination Hall.

**SYLLABUS  
DIPLOMA IN ELECTRICAL ENGINEERING  
SEMESTER – VI**

**TELEMETRY & TELECONTROL**

**Sub. Code: DEE 602**

**Credits: 02**

**Total Marks: 100**

**Minimum Pass Marks: 40%**

**Internal Assessment: 40 Marks**

**University Examination: 60 Marks**

**Unit 1:**

Functional Blocks of Telemetry System; Methods of Telemetry: Non Electrical, Electrical; Pneumatic, Frequency, Power Line Carrier Communication.

**Unit 2:**

Bits and Symbols; Time Function Pulses; Line and Channel Coding; Modulation Codes.

**Unit 3:**

FDM; IRIG Standard; FM and PM Circuit Block; Receiving Block; PLL

**Unit 4:**

TDM-PAM, PAM /PM and TDM; PCM Systems; PCM Reception, Differential PCM; QAM; Protocols.

**Unit 5:**

Optical Fibers Cable: Sources and Detectors; Transmitter and Receiving Block; Coherent Optical Fiber Communication System.

**Unit 6:**

Analog and Digital Techniques in Telecontrol; Telecontrol Apparatus: Remote Adjustment, Guidance and Regulation; Example of a Telecontrol System.

**Suggested Readings:**

1. Telemetry Principles, D. Patranabis, Tata McGraw Hill.
2. Telecontrol Methods and Applications of Telemetry and Remote Control, Swoboda G., Reinhold Publishing Corporation.

**Note:**

1. Eight questions are to be set. Students will have to attempt five questions in all.
2. Use of non-programmable scientific calculator is allowed in Examination Hall.

**SYLLABUS  
DIPLOMA IN ELECTRICAL ENGINEERING  
SEMESTER – VI**

**UTILIZATION OF POWER**

**Sub. Code: DEE 603**

**Credits: 02**

**Total Marks: 100**

**Minimum Pass Marks: 40%**

**Internal Assessment: 40 Marks**

**University Examination: 60 Marks**

**Unit 1:**

Advantages of Electric Drives; Characteristics of Different Mechanical Loads; Types of Motors Used in Electric Drive; Electric Braking; Plugging; Rheostat Braking; Regenerative Braking; Methods of Power Transfer by Direct Coupling by using Devices: Belt Drive, Gears Pulley Drives.

**Unit 2:**

Nature of Light, Visibility Spectrum Curve of Relative Sensitivity of Human Eye and Wave Length of Light; Definition: Luminous Flux, Solid Angle, Luminous Intensity, Illumination, Luminous Efficiency, Depreciation Factor, Coefficient of Utilization, Space to Height Ratio, Reflection Factor, Glare Shadow, Lux; Laws of Illumination; Different Type of Lamps;.

**Unit 3:**

Advantages of Electric Heating; Heating Methods; Resistance Heating: Direct and Indirect; Electric Ovens and their Temperature Range; Properties of Resistance Heating Elements; Domestic Water Heaters and other Heating Appliances and Thermostat Control Circuit. Induction Heating and Dielectric Heating:.

**Unit 4:**

Advantages of Electric Welding; Welding Method; Principle of Resistance Welding: Type-Spot, Projection Seam and Butt Welding; Welding Equipments Used Principle of Arc Production;.

**Unit 5:**

Need of Electro-Deposition; Laws of Electrolysis; Process of Electro-Deposition: Clearing, Operation, Deposition of Metals, Polishing, Buffing; Equipment and Accessories for Electroplating.

**Unit 6:**

Principle of Air Conditioning; Vapour Pressure; Refrigeration Cycle; Eco-Friendly Refrigerants; Description of Electrical Circuit used in Refrigerator, Air-Conditioner, and Water Cooler

**Unit 7:**

Advantages of Electric Traction; Different Systems of Electric Traction, DC and AC Systems, Diesel Electric System, Conductor Rail System, Current Collector-Pantograph; Electrical Block Diagram of an Electric Locomotive with Description of Various Equipment and Accessories; Types of Motors used for Electric Traction; Starting and Braking of Traction Motors; Introduction to EMU and Metro Railways

**Suggested Readings:**

1. Art and Science of Utilization of Electrical Energy, H Partap, Dhanpat Rai & Sons.
2. Utilization of Electrical Energy, JB Gupta, Kataria Publications.

**Note:**

1. Eight questions are to be set. Students will have to attempt five questions in all.
2. Use of non-programmable scientific calculator is allowed in Examination Hall.

**SYLLABUS  
DIPLOMA IN ELECTRICAL ENGINEERING  
SEMESTER – VI**

**MICROPROCESSOR**

**Sub. Code: DEE 604**

**Credits: 02**

**Total Marks: 100**

**Minimum Pass Marks: 40%**

**Internal Assessment: 40 Marks**

**University Examination: 60 Marks**

**Unit 1:**

Organization of a Microcomputer System and Functions of its Various Blocks;

**Unit 2:**

Concept of Bus and Bus Organization of 8085; Functional Block Diagram of 8085 and Function of Each Block

**Unit 3:**

Memory Organization; Concept of Memory Mapping; Partitioning of Total Memory Space; Address Decoding; Concept of I/O.

**Unit 4:**

Brief Idea of Machine and Assembly Languages; Machines and Mnemonic Codes; Instruction Format and Addressing Modes.

**Unit 5:**

Instruction Cycle, Machine Cycle and T-States; Fetch and Execute Cycle.

**Unit 6:**

Concept of Interrupt; Maskable and Non-Maskable. Servicing Interrupts; Extending Interrupt System.

**Unit 7:**

Concept of Programmed I/O Operations; Sync Data Transfer (Hand Shaking); Interrupt Driven Data Transfer; DMA; Serial Output Data; Serial Input Data.

**Unit 8:**

8255 PPI and 8253 PIT; 8257 DMA Controller; 8279 Programmable.

**Suggested Readings:**

1. Microprocessor Architecture, Programming and Applications with 8080/8085, Ramesh S Gaonker, Willey Eastern Ltd.

2. Microprocessor and Microcontrollers, Dr BP Singh, Galgotia Publications.

**Note:**

3. Eight questions are to be set. Students will have to attempt five questions in all.
4. Use of non-programmable scientific calculator is allowed in Examination Hall.