POWER SYSTEM ENGINEERING

Brief: It deals with :-

- (i) Generation
- (ii) Transmission
- (iii) Distribution

} Main parts of Power systems

- (iv) Utilization of electric power (Utilization & Traction)
- (v) Switchgear & Protection.

(i) **Generation** (at 11KV)

- Thermal Stations
- Hydro-electric "
- Nuclear Power "
- Diesel Electric "
- Gas Turbine "

(ii) **Transmission & Distribution**
(vary from 69KV to 765 KV)

66KV & 33KV are considered subtransmission voltages.

a) Constant of Overhead Transmission lines
b) Characteristics & Performance of Transmission lines
c) Load flow study
d) Overhead line insulators
e) Corona
f) Interference of Power lines with neighbouring Communication circuits

g) Mechanical design of Transmission lines
h) Underground Cables (Insulated)
i) Capacitance of Transmission lines
j) Voltage Control
k) Neutral Grounding
l) Transients in Power systems
m) Symmetrical Components & Fault Calculations
n) Protective relays
o) circuit Breakers
p) Insulation Coordination & overvoltage protection
q) Power system synchronous stability
r) Economic load dispatch
s) Load frequency control
t) Compensation in Power system
u) Power system voltage stabity

Switch gear

Switchgear

Distribution: At voltage less than 33kV

Extra High Voltage: Above 765 kV