

3. Attempt any **two** parts of the following : (10×2=20)
- (a) What are different types of substations ? Discuss typical layout of a substation.
 - (b) What do you mean by power factor ? What are the different causes and disadvantages of low power factor ? Explain any one method for power factor improvement.
 - (c) What is objective of Tariff ? What are different forms of Tariff ? Explain.
4. Attempt any **two** parts of the following : (10×2=20)
- (a) What do you mean by economic operation of power system ? What are different characteristics of steam and hydro-plants ? Explain in detail.
 - (b) What do you mean by economic load scheduling ? Explain economic load scheduling of thermal plants considering transmission losses.
 - (c) Explain in detail the hydro-thermal scheduling.
5. Attempt any **two** parts of the following : (10×2=20)
- (a) What do you mean by Non-conventional energy sources ? Explain role of Private sectors in energy management.
 - (b) Explain the process of conversion of solar heat to electricity. What are different solar energy collectors ? Explain future prospects of solar energy in India.
 - (c) Explain generation of electricity by wind mills. What are different types of generators used in wind energy generation ? Compare them with their advantages and disadvantages.