

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2017

**ENERGY MANAGEMENT**  
(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define energy management.
  - (b) Draw cash flow diagram of a typical production project.
  - (c) Why depreciation is to be considered in project report preparation?
  - (d) Write about 'Pay back method'.
  - (e) Write short notes on Break Even Analysis.
  - (f) What are the qualities of project manager?
  - (g) Enumerate types of budgets.
  - (h) What is energy index?
  - (i) How 'Load profile' helps in energy management?
  - (j) Explain energy production in India.

**PART – B**  
(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 What are managerial objectives of a firm? List out various costs involved in a project.

OR

- 3 Explain applications of Present Worth Factor and Capital Recovery Factor.

**UNIT – II**

- 4 Classify methods of depreciation. Differentiate between them.

OR

- 5 A company purchased a captive power plant on 01-04-2014 for Rs. 2,30,50,000. The depreciation is provided at a rate of 10% per annum. Assume books of accounts are closed at the end of financial year. Prepare machinery account for 3 years using: (i) Fixed installment method. (ii) Diminishing balance method.

**UNIT – III**

- 6 Write detailed notes on general principles of energy management. What are the qualities of an energy manager?

OR

- 7 There are two projects A and B under consideration to select. The capital cost of project A is Rs. 12 Lakhs and of project B is Rs. 10 Lakhs. The net cash flow of project A are 2000, 4000, 10000, 22000, whereas NCI of project B are 1000, 3000, 10000, 20000. Suggest best project considering payback period and NPV methods. Assume annual interest is 10%.

**UNIT – IV**

- 8 What are the objectives of 'Energy auditing'? List out various charts & tools used in energy management. Explain function of each of it.

OR

- 9 Name different types of Energy audits. Explain how energy saving potential be estimated by using energy management taking an industry as an example.

**UNIT – V**

- 10 Describe about 'Energy resources in India'. Present what are the challenges in energy distribution and transmission.

OR

- 11 Discuss on 'Energy policy of India'. Explain economic impact of change in international crude oil prices on India.

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