

I.D. No. 24517

B.Tech. 7th Semester F. Scheme (Civil Engineering-XI)

Examination, May-2014

ENERGY PLANNING AND MANAGEMENT

Paper-CE-409-F

Time allowed : 3 hours]

[Maximum marks : 100

- Note :** (i) *Question No. 1 is compulsory.*
(ii) *Attempt one question from each section.*
(iii) *All questions carry equal marks.*
(iv) *Attempt five questions in all.*
(v) *Assume missing data, if any, suitably.*

1. (a) Which type of procedures should we adopt to ensure efficient conservation of energy resources ?
(b) List the major elements which are commonly evaluated in energy policy planning.
(c) What you understand by energy storage systems. Explain briefly.
(d) Illustrate the energy accounting of any given process or system.
(e) Explain the terms "operational cost" and "capital cost" in-terms of Energy Economics. $5 \times 4 = 20$

Section-A

2. (a) Define planning. Differentiate between isolated and integrated planning. Also describe rural energy planning.

3. (a) Explain conventional and non-conventional sources of energy in detail. 10
- (b) Define the terms "Energy Conservation" and "Energy savings". Differentiate between these two. 10

Section-B

4. (a) Explain the mitigation measures required to reduce the effect of developmental project on air environment. 10
- (b) How the Impact activities affect the aquatic environment? 10
5. (a) What do you mean by environmental degradation? Explain in detail. Also describe the different strategies to control it. 10
- (b) Describe in detail the impact assessment of different power plants on the ecosystem. 10

Section-C

6. (a) Describe the various techniques of energy storage and conservation. 10
- (b) Draw an illustrative flow block-diagram which may describe energy policy, energy economics, energy forms and energy balance. Give also a brief summary of the diagram. 10

Section-D

8. (a) Explain the concept of automatic control in detail. 10
- (b) Describe the applications of microprocessors in power system. 10
9. (a) Describe the following :
- (i) Power and frequency control
- (ii) Voltage and reactive power control 10
- (b) Describe the methods to measure pressure, flow temperature and humidity. 10