M. Tech. Electrical Power Systems (C.B.C.S. & Old Pattern) Sem-I

PEPS11 / EP101 - Energy Management & Auditing

P. Pages : 1 **GUG/S/19/10969**

Time : Three Hours * 3 9 1 9 * Max. Marks : 70

Notes : 1. All questions carry equal marks.
2. Attempt **any five** questions.
3. Assume suitable data wherever necessary.
4. Use of non-programmable calculator is permitted.

1. a) Write down the salient features of energy conservation Act – 2001. **7**

b) A solution of common salt in water is prepared by adding 20 kg of salt to 100 kg of water to make a liquid density 1323 kg/m^3. Calculate the concentration of salt in this solution as a – **7**

i) Weight fraction ii) Weight / volume fraction
iii) Mole fraction iv) Molar concentration

2. a) What is energy audit? Explain different types of energy audit. **7**

b) Explain in details benchmarking & energy performance. **7**

3. a) Explain techniques for energy consumption & production. **7**

b) How to select energy efficient motors (EEM) **7**

4. a) What are the benefits of waste heat recovery. **7**

b) What are the calculations required for economic insulation thickness. **7**

5. a) Explain the procedure for calculating the installed load efficacy & installed load efficacy Ratio (ILER) of general lighting installation in an interior. **7**

b) What is the purpose of material & energy balance. **7**

6. a) What are the different losses in transmission & distribution sector? **7**

b) Explain "CUSUM" chart is drawn with example. **7**

7. a) Explain the concept of "power demand monitoring" & how you apply it in a domestic sector. **7**

b) Write a "Detailed Note" on "European Agreement" on low voltage electric motor. **7**

8. a) Explain key features of IS12615 & IEEMA standards. **7**

b) Differentiate between Non – conventional energy sources & Renewable energy sources. **7**

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