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Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (EE) (2013 Batch E-III) (Sem.-3)**ENERGY EFFICIENT MACHINES**

Subject Code : MTEE-301A

M.Code : 72238

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q.1 a) Brief about methods of determining energy cost .What are feature of two part tariff system ?
- b) What are possible ways of energy conservation options in sugar industry? Explain
- Q.2 What are type of energy auditing? Explain the procedure for detailed energy auditing and its reporting format.
- Q.3 Write mathematical formulas used for improvement in energy efficiency. Also, show through the characteristics curves for the impact of electrical parameters to save energy.
- Q.4 What are causes of harmonics generation ? Explain various methods for elimination of harmonics for loss reduction.
- Q.5 What do you mean by constant load torques electric motor operation? Write applications of constant load torque motor with justification for the purpose.
- Q.6 Discuss the principle and operation of adjustable frequency power supply to polyphase induction motor. What are advantages and disadvantages of frequency adjustable drive ?
- Q.7 An 8 pole, 50 Hz, 3-phase induction motor develops a maximum torque of 150 N-m at 650 rpm .The rotor resistance is 0.5Ω per phase. Find torque at 4% slip. Neglect the stator impedance.
- Q.8. Write short notes on :
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|-------------------------------------|----------------------------|
| a) Energy efficient motor standards | b) Loss segregation method |
| c) Saving and payback analysis | d) Over motoring. |

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

