

Code: 9A02802

**R09**

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

**UTILIZATION OF ELECTRICAL ENERGY**

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Briefly explain fluorescent lamp with neat diagram.  
(b) With short notes on factory lighting.
- 2 (a) What do you understand by electrical heating? Write down the advantages of electrical heating over other methods of heating.  
(b) Explain the dielectric heating in detail.
- 3 (a) Make a comparison between gas welding and electric arc welding.  
(b) Discuss welding electrodes of various metals.
- 4 Discuss Faraday's laws and applications of electrolysis in detail.
- 5 (a) Explain the speed control of AC motors.  
(b) Explain the type of electric breaking in detail.
- 6 Explain the methods of electric breaking with necessary diagrams.
- 7 (a) Explain the speed-time curve for urban service.  
(b) A train has schedule speed of 60 km/h between the stops which are 6 km apart. Determine the crest speed over the run assuming trapezoidal speed time curve. The train accelerates at 2 km/h/s and retards at 3 km/h/s. Duration of stops is 60 sec.
- 8 (a) Write short notes on adhesive weight.  
(b) What is specific energy consumption? Explain the factors that affect the specific energy consumption.

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