Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov/Dec – 2017**

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| **Code :** | **17EE3011** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ENERGY ENGINEERING** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Narrate a brief description on the coalification process, peat and Fossil ferns and also investigate on the various ways to conserve energy with an outline of the energy flow diagram. | CO3 | 12 |
| b. | Present a pie chart to discuss about the region wise installed capacity of electricity in India. | CO2 | 8 |
| (OR) | | | | |
| 2. | a. | Evaluate the installed capacity and capacity utilization of fossil fuels in India. | CO2 | 7 |
| b. | Present the trend in net import of petroleum products and Identify the major Coal Washeries and Refineries of crude oil in the country. | CO1 | 13 |
| 3. | a. | Illustrate the working of solar water heaters operation and its characteristics. | CO1 | 10 |
|  | b. | Summarize on the power extraction from wind energy using betz model. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Plan the various ways of extracting energy from biomass and outline their technologies in detail. | CO2 | 10 |
|  | b. | Analyze on the hot rock resources and present the useful energy generated from the same. | CO3 | 10 |
| 5. |  | Name a device that converts chemical energy into electrical energy, water, and heat through electrochemical reactions with a schematic sketch of the same and also Illustrate the intrinsic differences between a fuel cell and a battery with examples. | CO1 | 20 |
| (OR) | | | | |
| 6. | a. | Narrate on the three major Stationary Source of Air Pollution and present the classification between the primary and secondary pollutants. | CO2 | 10 |
|  | b. | Outline on the effects of chemical criteria pollutants on people, plants and materials. | CO3 | 10 |
| 7. | a. | Examine on the degradation of materials based on the corrosion with the environment. | CO3 | 10 |
|  | b. | List the various means of the occurrence of electro-chemical corrosion in metals and write in detail on wet corrosion. | CO3 | 10 |
| (OR) | | | | |
| 8. |  | Plan the various ways to reduce the pollution due to thermal power plant and present few of their control measures. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Draw the main components of the SCADA system in distribution management systems. | CO2 | 10 |
|  | b. | Summarize on the transmission system of smart grids with relevant diagrams. | CO1 | 5 |
|  | c. | Justify the need of Deregulation in economical sphere. | CO2 | 5 |

ALL THE BEST