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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EE2036** | **Duration :** | **3hrs** |
| **Sub. Name :** | **Smart Grid** | **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. | Describe the various communication channels used in smart grid communication. | CO2 | 16 |
| b. | List the characteristics and benefits of smart grid. | CO1 | 4 |
| (OR) | | | | |
| 2. | a. | What are the technologies required in the smart grid and brief about each technology used in smart grid? | CO1 | 16 |
| b. | Differentiate various communication technologies used in smart grid. | CO2 | 4 |
| 3. |  | Write short note on (i) Substitution cipher (ii) Public key encryption. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Brief about Authentication and Digital signature used in smart grid security. | CO2 | 20 |
| 5. |  | Discuss about the functions of SCADA and its challenges and threats. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | Draw the architecture of WAMS and illustrate its functional blocks. | CO3 | 20 |
| 7. | a. | What is CIS? List out various application of CIS and its significance. | CO2 | 16 |
|  | b. | Interpret Demand side management. | CO1 | 4 |
| (OR) | | | | |
| 8. |  | Draw the layout of the smart metering communication infrastructure and illustrate about various protocol used in smart metering. | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | List out the grid connected issues due to the penetration of renewable energy generation in existing power system. | CO3 | 14 |
|  | b. | Brief about the future aspects of smart grid. | CO3 | 6 |

ALL THE BEST