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



**End Semester Examination – Nov / Dec – 2019**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **18EE3012** | **Duration :** | **3hrs** |
| **Sub. Name :** | **GRID CONVERTERS FOR SOLAR AND WIND POWER SYSTEMS** | **Max. Marks :** | **100** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course Outcome** | **Marks** |
| **ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)** | | | | |
| 1. | a. | Classify the various control structures and classes of PV Inverters. | CO1 | 6 |
| b. | Discuss the operation of REFU Inverter with neat diagrams. | CO1 | 10 |
|  |  |  |  |  |
| 2. |  | Describe the working of Unipolar modulation based PV full bridge inverter with neat diagrams. Also mention its advantages and disadvantages. | CO2 | 16 |
|  |  |  |  |  |
| 3. |  | Explain the quality of the power provided by the photovoltaic system for the local AC loads. | CO3 | 16 |
|  |  |  |  |  |
| 4. |  | Illustrate the principle of grid synchronization using phase-locked loop. | CO3 | 16 |
|  |  |  |  |  |
| 5. |  | Describe the various islanding detection methods. | CO4 | 16 |
|  |  |  |  |  |
| 6. |  | Explain the Lfilter and LCL filter based inverters with necessary diagrams. | CO5 | 16 |
|  |  |  |  |  |
| 7. |  | Discuss the droop control for power sharing with necessary diagrams. | CO5 | 16 |
| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | Discuss the control techniques for grid converters under unbalanced voltage conditions. | CO6 | 10 |
| b. | Describe the power control under unbalanced grid condition. | CO6 | 10 |