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

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **17EE3008** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DSP BASED CONTROL OF POWER CONVERTERS AND DRIVES** | **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 uses of Pipeline? How does it improve the computational speed of the processor? | CO1 | 10 |
| b. | Explain how an OTP and Flash memory be used in DSP and its peripherals. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Detail the Central Processing Unit (CPU) of a TMS320F2812 Digital Signal Processor with neat block diagram. | CO2 | 15 |
| b. | Compare and contrast a Fixed point DSP with Floating point DSP. | CO1 | 5 |
|  |  |  |  |  |
| 3. |  | Elaborate in detail how a Peripheral Interrupt Expansion (PIE) of TMS320F2812 DSP handles a peripheral interrupt. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Discuss about the steps involved in configuring a General Purpose Timer Registers. | CO3 | 20 |
|  |  |  |  |  |
| 5. |  | Constitute the timer of TMS320C2812 processor to generate a Space Vector Pulsewidth Modulation (SVPWM) pulses of 10kHz frequency. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | Explain how a Field Oriented Control (FOC) of three phase induction motor be implemented with DSP using coordinate transformations. | CO4 | 20 |
|  |  |  |  |  |
| 7. |  | Discuss the operation of flyback converter in DCM and CCM with necessary diagrams and waveforms. | CO4 | 20 |
| (OR) | | | | |
| 8. | a. | Discuss the operation of buck-boost regulator with necessary diagram and waveforms. | CO5 | 10 |
| b. | Briefly explain the control of Multilevel Inverter. | CO5 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Describe the DSP implementation of Switched Reluctance Motor using (SRM) Drive. | CO6 | 20 |