

1T01138 - B.E.(Electronics Engineering)(SEM-VIII)(Choice Base Credit Grading System)(R- 2019-20)
(C Scheme) / 53074 - Advanced Power Electronics (DLOC - V)

QP CODE: 10029666

DATE: 12/12/2023

Time: 3 Hours

Total Marks: 80

- (1) Question no.1 is compulsory.
- (2) Answer any 3 questions from the remaining 5 questions.
- (3) Assume suitable data wherever required.

Q.1 Attempt any four

20

- a) Compare IGBT and Power MOSFET.
- b) Explain the working of Flyback converter with waveforms.
- c) Explain Multilevel Inverter Topologies.
- d) Distinguish between Smartgrid and Microgrid.
- e) Explain basic principle and speed-torque characteristic of Induction motor.

Q.2

- a) Explain the working of Buck-Boost converter with waveforms. 10
- b) Explain PI Control of DC-AC Converter. 10

Q.3

- a) Illustrate VVVF control drive for Induction motor. 10
- b) Explain Inverter interfacing control strategies for transferring solar energy to grid. 10

Q.4

- a) Draw and explain the state space model of DC-DC boost converter in detail. 10
- b) Explain concept of distributed generation system. 10

Q.5

- a) Draw speed-torque characteristics of Induction motor. Explain which region of the characteristics is most suitable for the stable operation of the motor. 10
- b) Illustrate the instantaneous power theory in control of inverters. 10

Q.6

- a) Draw diagram of a ZOH sample and hold. Explain the same in detail. 10
- b) Explain the flyback converter in continuous mode. State advantages and disadvantages. 10