

MODULE IV

17. (a) Explain the phase displacement technique of varying the magnitude of output voltage in a single-phase inverter. (6 marks)
- (b) A single-phase full bridge inverter employs single PWM technique to control the output voltage. What should be the pulse-width for the r.m.s. value of the fundamental component of the output voltage to be 60% of the d.c. input voltage? (6 marks)

Or

18. (a) Explain the working of a thyristorised single-phase current source inverter?
- (b) A three-phase bridge inverter having thyristors as switches, supplies a Y-connected balanced load having 5Ω in each phase. If the d.c. supply voltage is 230V, Calculate the average and r.m.s. values of thyristor current for (i) 180° conduction and (ii) 120° conduction. (6 + 6 = 12 marks)

MODULE V

19. With neat circuit diagram and waveforms, explain the working of a Buck-boost regulator?

Or

20. Explain design steps of a SMPS circuit.

[5 × 12 = 60 marks]