10. (a) Explain with a neat diagram, the various operating modes of dc motor.

Or

(b) Briefly explain the operation of closed loop control of induction motor with a neat diagram.

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S.No. 345 **17PEL03**

(For the candidates admitted from 2017 – 2018 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017.

First Semester

Electronics and Communication

POWER ELECTRONICS

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) With a neat diagram, explain the operation of various methods used for firing a thyristor.

Or

(b) Draw a neat circuit diagram and explain the operation of single phase thyristor converter with a resistive load.

2. (a) With a neat circuit diagram, explain the basic principle of ON-OFF control.

Or

(b) Describe the operation of single phase controllers with inductive loads.

3. (a) Explain with a neat diagram, the basic principle of natural commutation.

Or

(b) With a neat circuit diagram, explain the working of self commutation.

4. (a) Explain the basic principle of step down chopper with resistive load with a neat diagram.

Or

(b) Explain with a neat diagram, the basic principle of switching mode regulator.

5. (a) With a neat diagram, explain the operation of single phase semi converter drives.

Or

(b) Explain how the current can be controlled in a induction motor.

SECTION B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) Explain in detail the construction, operation and V-I characteristics of SCR.

Or

(b) With a neat circuit diagram, explain the operation of single phase series converters.



7. (a) Briefly explain the operation of single phase controllers with resistive load with a neat circuit diagram.

Or

(b) With a neat circuit diagram and waveform, explain the operation of single phase cycloconverters.

8. (a) Describe the operation of complimentary commutation with a neat circuit diagram and waveform.

Or

(b) With a neat circuit diagram, explain the operation of (i) external pulse commutation and (ii) load side commutation.

9. (a) With a neat circuit diagram, explain the basic principle and working of a set-up chopper.

Or

(b) Explain in detail the operation of single phase AC switches with a neat diagram.