

R16

Code No: 136FE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, November/December - 2020

INDUSTRIAL ELECTRONICS

(Common to EEE, ECE)

Time: 2 hours

Max. Marks: 75

**Answer any five questions
All questions carry equal marks**

- 1.a) Explain in detail about Darlington Emitter Follower with neat circuit diagram.
- b) Describe in detail about the types of chopper. Derive an expression for the average output voltage in terms of input dc voltage. [7+8]
- 2.a) What is an op-amp? Discuss the ideal and practical specifications of operational amplifiers.
- b) Draw and explain the equivalent circuit of an operational amplifier. [10+5]
- 3.a) Discuss the following:
i) short circuit protection ii) over voltage protection.
- b) Explain about servo voltage stabilizer with neat block diagram. [8+7]
- 4.a) Explain the operation of shunt voltage regulator.
- b) Distinguish linear and switched mode voltage regulators. [7+8]
- 5.a) Draw the two transistor model of SCR.
- b) Discuss in brief about the commutation techniques of Thyristors. [6+9]
- 6.a) Draw the switching characteristics of SCR and explain it.
- b) Discuss the different modes of operation of thyristor with the help of static VI characteristics. [6+9]
- 7.a) Describe the operation of series inverter.
- b) Write neat sketch and output voltage waveforms explain the working of single phase full wave rectifier. [7+8]
- 8.a) Write the merits and applications of High frequency heating.
- b) Discuss about Ultrasonics generation and also write its applications. [7+8]

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