

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)
B. Tech. Sem - I ELECTRICAL :SUMMER- 2022
SUBJECT : SOLID STATE DEVICES & ELECTRONIC CIRCUITS

Day : Thursday
Date : 21-07-2022

S-24074-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
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- Q.1** a) Explain Tunnel diode with neat diagram. (05)
b) Explain BJT with CB configuration. (05)

OR

- a) Explain SCR with neat diagram. (05)
- b) What is device modeling? Explain in brief. (05)

- Q.2** a) Explain difference between active and passive filters. (05)
b) Explain regulated DC power supply with neat diagram. (05)

OR

- a) Compare series and shunt voltage regulator. (05)
- b) Explain applications of active and passive filters. (05)

- Q.3** a) Draw and explain amplifier equivalent circuit. (05)
b) Explain multi stage transistor amplifier. (05)

OR

- a) Explain difference between voltage and power amplifier. (05)
- b) Explain Hartely oscillator with neat diagram. (05)

- Q.4** a) Explain ideal voltage transfer curve of op-amp. (05)
b) Explain differential amplifier with neat diagram. (05)

OR

- a) Can we use op-amp as adder and subtractor? Explain in brief. (05)
- b) List different op-amp ICs and their manufacturers. (05)

- Q.5** a) Explain voltage to current converter with neat diagram. (05)
b) Explain Schmitt trigger circuit with neat diagram. (05)

OR

- a) Explain instrumentation amplifier with neat diagram. (05)
- b) Explain current to voltage converter with neat diagram. (05)

- Q.6** a) Explain fixed type voltage regulator. (05)
b) List different manufactures and cost of commonly used regulators and timer ICs. (05)

OR

- a) What are different applications of Monostable and Astable multivibrators? (05)
- b) Explain switching type of voltage regulator with neat diagram. (05)

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