

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

Day : Monday

Time : 10:00 AM-01:00 PM

Date : 16-01-2023

W-25146-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPUSLORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Assume suitable data **WHEREVER** necessary.
 - 4) Use of **NON-PROGRAMMABLE** calculator is allowed.
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- Q.1** a) Explain PIN diode with neat diagram. (05)
b) List various manufactures of solid state devices. (05)

OR

- a) Explain different between BJT and FET. (05)
b) Explain MOSFET biasing with neat diagram. (05)

- Q.2** a) What is difference between active and passive filters? (05)
b) Explain working of SMPS with block diagram. (05)

OR

- a) Explain regulated DC power supply with block diagram. (05)
b) List advantages and applications of active passive filters. (05)

- Q.3** a) Give classification of amplifiers, explain one in detail. (05)
b) Explain amplifier with negative feedback. (05)

OR

- a) Explain Wien-bridge oscillator with neat diagram. (05)
b) Explain R-C coupled transistor amplifier. (05)

- Q.4** a) Explain concept of virtual short. (05)
b) List various op-amp IC manufactures. (05)

OR

- a) Draw ideal op-amp equivalent circuit. (05)
b) Explain differential amplifier with neat diagram. (05)

- Q.5** a) Explain voltage to current converter. (05)
b) Explain role of solid state devices in electrical engineering. (05)

OR

- a) Explain comparator with neat diagram. (05)
b) Explain differentiator with neat diagram. (05)

- Q.6** a) Explain 555 timer as monostable multivibrator. (05)
b) What is phase locked loop? (05)

OR

- a) Explain 'Fixed' type voltage regulator. (05)
b) Explain monolithic power amplifier with diagram. (05)