

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
HanumanVyayamPrasarak Mandals's
College of Engineering & Technology, Amravati
Course: Information Technology
BE Four year Semester (Information technology) Summer 2020 Exam
Subject: 3IT04 Electronics Devices and Circuits
Assignment for ONLY BACKLOG STUDENTS

Instructions

- 1) Solve ANY TWO Questions**
- 2) Each Question Carries 10 marks**

Q I) Solve the following

- 1) What is rectifier? State types of rectifier. [2M]
- 2) Explain Working principal of BJT . Also Define α and β [2M]
- 3) Explain the Barkhausen's criterion to sustain oscillations in oscillator. [1M]
- 4) Explain Internal block diagram of OP-Amp [2M]
- 5) Explain the operation of Inverting comparators with suitable V_{ref} . [1M]
- 6) Draw the internal block diagram of IC 555 timer with neat figure. [2M]

Q II) Solve the following

- 1) Explain the working of Capacitor input filter [2M]
- 2) Derive Relation between α & β [2M]
- 3) Explain function of Wein bridge oscillator. [1M]
- 4) What are the ideal Characteristics of OPAMP with IC-741 [2M]
- 5) Explain the operation of Monostable Multivibrator using OP-AMP. [1M]
- 6) Explain the working of a PLL with a neat block diagram. [2M]

QIII) Solve the following

- 1) Draw a neat circuit diagram of Full Wave center tap rectifier and explain its working [2M]
- 2) Explain working principal of LED .Also specify material Used [2M]
- 3) Explain the principle of operation of a phase shift oscillator with a neat diagram. [1M]
- 4) Draw & Explain Inverting amplifier using opamp [2M]
- 5) Explain the operation of Astable Multivibrator using OPAMP. [1M]
- 6) Explain the transfer characteristics of a PLL. What is lock range and capture range [2M]

QIV) Solve the following

- 1) Draw and Explain V-I Characteristics of Zener Diode [2M]
- 2) For Amplifier explain the term D.C. load line. [2M]
- 3) Describe the following output commands with their proper syntax in spice.
a].Print b].Plot c].Probe [1M]
- 4) Draw & Explain Voltage Follower using Opamp. [2M]
- 5) Explain the operation of voltage to current converter using OPAMP [1M]
- 6) Explain the operation of Astable Multivibrator using IC 555 with suitable waveforms. [2M]