

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VI ELECTRONIC : WINTER- 2022
SUBJECT : ELECTRONIC CIRCUIT DESIGN

Day : Wednesday

Time : 10:00 AM-01:00 PM

Date : 30-11-2022

W-13392-2022

Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

- Q.1** What are different types of resistors? What are the factors to be considered while selecting resistor for any application. Give example. (10)
- OR**
- Write notes on: (10)
- a) Audio frequency transformer
 - b) Active components
- Q.2** a) Draw the circuit diagram of notch filter. Show approximate waveforms. (05)
- b) Design state variable BPF to have $f_L = 10.3$ kHz and $f_H = 10.9$ kHz. (05)
- OR**
- Draw and explain the circuit diagram of all pass filter. Design an adjustable all pass filter to have phase leg adjustable from 80° to 100° . The signal is 1V, 5kHz. (10)
- Q.3** With a neat diagram explain the operation of transistor shunt regulator. (10)
- OR**
- Write short notes on: (10)
- a) Short circuit protection
 - b) Fold back current limiting
- Q.4** Which are the different topologies used in SMPS? Discuss the factors for selecting topology for particular application. (10)
- OR**
- With neat diagram explain operation of half bridge converter. Draw waveforms. (10)
- Q.5** Describe the role of sample and hold circuit. Give suitable example. (10)
- OR**
- With suitable diagram, explain multichannel DAS using digital multiplexing. (10)
- Q.6** Design a power amplifier using LM 386 for following specifications: (10)
- $P_0 = 700$ mV
 $R_L = 8 \Omega$
BW = 20 Hz to 20 kHz
Gain = 26dB to 46 dB.
- OR**
- With the help of circuit diagram explain the working of Class C amplifier. (10)

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