

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020

Subject Code:2140305**Date:15/02/2021****Subject Name:Analog Circuits-II****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Compare analog and digital communication. **03**
(b) What is Frequency Modulation? Give mathematical representation of FM. **04**
(c) Explain Switching Power supply in detail. **07**
- Q.2** (a) Define Signal to Noise ratio, CMRR and Gain of the amplifier. **03**
(b) Enlist the safety standards in medical electronic amplifier. **04**
(c) Explain CRO with neat sketch. **07**
- Q.3** (a) Explain Thermal Noise and Burst Noise. **03**
(b) What is Amplitude Modulation? Give mathematical representation of AM. **04**
(c) Draw and explain Frequency analyzer in detail. **07**
- Q.4** (a) Describe the effects of noise generated by Zener Break Down. **03**
(b) Enlist the various problems associated with power supplies. **04**
(c) Design 2nd Order Low Pass Filter at a high cut off frequency of 1 kHz. Also draw the frequency response. **07**
- Q.5** (a) Explain RMS vs Peak to Peak noise. **03**
(b) Explain the Opto-Isolators with the help of diagram. **04**
(c) Explain Differential Chopper Amplifier. **07**
- Q.6** (a) Define: Capacitive Crosstalk. **03**
(b) Derive gain equation for instrumentation amplifier. **04**
(c) Draw the block diagram of function generator and explain its function. **07**
- Q.7** (a) Explain Reverse Battery Protection. **03**
(b) Explain common Grounding rules for good design. **04**
(c) Design all pass filter having operating frequency 1KHz and phase angle 90 degree. Assume C=0.01 μ F. **07**
- Q.8** (a) Give the importance of heat sink. What are the main criteria for selection of heat sink? **03**
(b) Write a technical note on White noise. **04**
(c) Design a 50 Hz active notch filter. Also draw the frequency response. **07**
