

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018

Subject Code:2140305

Date:01/12/2018

Subject Name:Analog Circuits-II

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) What is an isolation amplifier? Enlist the types of isolation amplifier.	03
	(b) Enlist the various problems associated with power supplies.	04
	(c) Explain the difference between switch mode power supply and linear power supply.	07
Q.2	(a) Define: Capacitive Crosstalk.	03
	(b) Explain the Opto-Isolators with the help of diagram.	04
	(c) Explain the effect of electro-magnetic coupling on circuits.	07
	OR	
	(c) Discuss the common grounding rules for circuit design.	07
Q.3	(a) A 100 kΩ resistor at 25°C (298 K) over the frequency range of 50 Hz to 10 kHz. Calculate the thermal noise.	03
	(b) Explain the working of chopper stabilized amplifier in detail.	04
	(c) Enlist the types of noises. Explain any two noise in detail.	07
	OR	
Q.3	(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 an instrumentation amplifier of gain 10. Also draw the response when $V_1 = 1V$, $V_2 = 2V$, $V_{CC}/V_{EE} = 5V$.	07
Q.4	(a) What do you mean by filters? Draw the frequency response of low pass active filters.	03
	(b) Enlist the types of Amplitude Modulation. Explain Square Law modulator in detail.	04
	(c) Design 2 nd Order Low Pass Filter at a high cut off frequency of 1 kHz. Also draw the frequency response.	07
	OR	
Q.4	(a) What are the advantages of modulation techniques?	03
	(b) What do you mean by frequency modulation? Also write down the mathematical representation of frequency modulation.	04
	(c) Design a 50 Hz active notch filter. Also draw the frequency response.	07
Q.5	(a) Define: Noise corner frequency	03
	(b) Enlist the safety standards in medical electronic amplifier.	04
	(c) Explain the amplitude modulation receiver with the help of block diagram.	07
	OR	
Q.5	(a) Enlist the main components of CRO.	03
	(b) How does a frequency analyzer work? Explain with the help of diagram.	04
	(c) Explain the comparison between PAM, PWM, PPM.	07
