Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV(OLD) – EXAMINATION – SUMMER 2019

Subject Code:141101 **Date:17/05/2019**

Subject Name: Advance Electronics

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.**

Q.1	**(a)**	Draw the circuit of two stage RC coupled amplifier and explain it in detail. Also explain the significance of coupling and bypass capacitor.	**07**
	(b)	Draw the hybrid π equivalent circuit of CE amplifier with resistive load and derive the equation of short circuit Current Gain.	**07**
Q.2	**(a)**	What do you mean by negative feedback? Enlist the advantages of negative feedback. Also derive equation of close loop gain in terms of open loop gain.	**07**
	(b)	Explain the concept of cascaded amplifier and derive the equation of overall Gain. Also compare Frequency response of single stage amplifier and cascaded multistage amplifier.	**07**

OR

	(b)	With respect to transistor hybrid π model, (i) Derive equation of Base Spreading resistor $r_{b'b}$ in terms of h_{ie}. (ii) Explain the validity of hybrid π model.	**07**
Q.3	**(a)**	Draw the Block diagram of various Feedback topology and explain the significance of each topology.	**07**
	(b)	Draw the circuit of Wien Bridge Oscillator and explain it in detail.	**07**

OR

Q.3	**(a)**	Explain Crystal Oscillator in detail	**07**
	(b)	What is difference between and amplifier and Oscillator? Explain the concept of oscillation with Barkhausen criteria.	**07**
Q.4	**(a)**	Draw the circuit of Inverting configuration of Op. Amp. and derive the equation of Close loop gain..	**07**
	(b)	Enlist at least six characteristics of Ideal Op. Amp. Also draw Ideal voltage transfer curve of Op. Amp. and explain it.	**07**

OR

Q.4	**(a)**	With respect to 741 Op. Amp. (i) Draw equivalent circuit of Op. Amp. and explain significance of each component. (ii) Draw the pin configuration of Op. Amp. IC 741 and explain significance of each pin.	**07**
	(b)	Explain practical way of measuring Slew Rate of Op. Amp. with necessary Circuit & Waveform.	**07**
Q.5	**(a)**	Explain Dual slop A/D converter in detail.	**07**
	(b)	Explain DTL in detail. Also draw two input DTL NOR gate.	**07**

OR

Q.5	**(a)**	Explain TTL in detail. Also draw two input TTL NAND gate.	**07**
	(b)	Explain weighted resistor type DAC in detail.	**07**

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