Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC- SEMESTER–III - EXAMINATION – SUMMER 2017

Subject Code: X31101 **Date:25/05/2017**

Subject Name: Advance Electronics

Time: 02:30 PM to 05:30 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 and explain hybrid π model for CE configuration. Also explain validity of hybrid π model.	**07**
	(b)	Explain Emitter follower at higher frequency.	**07**
Q.2	**(a)**	Explain classifications of amplifiers.	**07**
	(b)	Draw and explain RC coupled amplifier. Also draw frequency response of it.	**07**
		OR	
	(b)	For CE short circuit current gain g_m= 50 mA/V, $r_{b'e}$= 1 KΩ, C_e= 1 pF and C_c= 0.2 pF, determine the values of f_β and f_T.	**07**
Q.3	**(a)**	Three cascaded stage have an overall upper 3 dB frequency of 16 KHz and lower 3 dB frequency of 25 Hz. What are value of F_L and F_H of each stage? Assume that all the stages are identical. Also calculate bandwidth of each stage.	**07**
	(b)	Draw and explain block diagram of op-amp.	**07**
		OR	
Q.3	**(a)**	In a transistorized Hartley oscillator the two inductors are 2 mH and 20 µH while the frequency is to be changed from 950 KHz to 2050 KHz. Calculate the range over which the capacitor is to be varied.	**07**
	(b)	Draw and explain emitter-coupled differential amplifier.	**07**
Q.4	**(a)**	Draw circuit diagram of successive approximation ADC. Also explain working of it.	**07**
	(b)	Draw dual slop ADC. Also explain working of it.	**07**
		OR	
Q.4	**(a)**	Explain comparison of different logic families.	**07**
	(b)	Explain voltage series feedback with suitable example.	**07**
Q.5	**(a)**	Define following terms. 1) Stability 2) Phase Margin 3) Feedback 4) Temperature drift 5) Input offset voltage 6) CMRR 7) Slew rate	**07**
	(b)	Define Oscillator. Draw and explain Wien bridge oscillator circuit diagram.	**07**
		OR	
Q.5	**(a)**	List different characteristics of DAC and define it.	**07**
	(b)	Explain weighted resister type DAC.	**07**

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