Code No. 2058

FACULTY OF ENGINEERING

B.E. 2/4 (ECE) II-Semester (Main) Examination, April / May 2013 Subject : Analog Electronic Circuits

Time : 3 Hours

Max. Marks: 75

(10)

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1.	What are the advantages and disadvantages of Transformer coupling in	
	Amplifiers?	(3)
2.	What is the effect of negative feedback on the input and output impedances of a	
	Trans resistance amplifier?	(2)
3.	Compare series and switching regulators.	(2)
4.	Why LC oscillators are not suitable for low frequency applications?	(2)
5.	What is the range of frequency in terms of f_T upto which the hybrid- π equivalent	
	circuit of CE amplifier is valid?	(2)
6.	Sketch the frequency response of a staggered tuned amplifier. State its advantages	
	over cascaded single tuned amplifier.	(3)
7.	What is neutralization? Draw two circuits to achieve neutralization?	(3)
8.	An amplifier has an open loop voltage gain 1000 \pm 100. If 10% of negative feedback	
	is introduced what will be its closed loop voltage gain and its variation.	(3)
9.	What is the cross over distortion? How it can be minimized?	(3)
10	What is cascode connection?	(2)

PART – B (5x10=50 Marks)

11.	Draw the equivalent circuit of RC coupled amplifier in midfrequency range, high	
	frequency range and low frequency range and derive the equations for current	
	gain, voltage gain, upper 30ds frequency and lower 3ds frequency.	(10)

12. For the transistor feedback amplifier shown in figure, hfe=150, hie=4.7k Ω , hoe=hre=0. Determine

(i) R_{mf} (ii) A_{vf} (iii) R_{if} (iv) R_{of} with $R_e=1 k\Omega$



13.(a) Draw a neat Hartley oscillator circuit and explain its principle of operation.(b) Derive its frequency of operation and condition for maintenance of oscillation.	(10)
 14.(a) Draw a complete class A Transformer coupled amplifier and derive its Theoretical efficiency. (b) A power transistor operated in class A operation delivers a maximum of 6w to a 8Ω load with supply voltage of 25V. The Q-point is adjusted for a symmetrical swing. 	(6)
Calculate (i) Peak collector current (ii) Efficiency (iii) Step down turns ratio	(4)
15.(a) What are the advantages of double tuned amplifier over single tuned amplifier?(b) Draw the circuit of a double tuned Transformed coupled voltage amplifier using BJT. Derive the expression for its voltage gain at the centre frequency.	(4) (6)
16.(a) Explain how regulation is achieved in transistorized shunt regulator.	(5)
(b) What are the factors that effect the frequency stability of an oscillator? How frequency stability can be improved in oscillators?	(5)
17. Write short notes on the following:	(10)

(a) Harmonic Distortion (b) Local versus Global Feedback (c) Crystal oscillators