V.P. & R, P. T. P. SCIENCE COLLEGE
T.Y. B. Sc (Fifth Semester)
First internal test
Linear and Discrete Circuit Theory [US05CELE01]

September 30, 2013 **Time: 3:30 to 5:00 p.m.**

Marks: 30

Q.1 **Choose the correct answer from the following multiple choice question.** 6

1 Which signal is sampled from the output circuit in transconductance amplifier?

i) voltage ii) current iii) conductance iv) none of above

2 The input resistance _____ in current shunt feedback amplifier.

i) remains constant ii) increases iii) decreases iv) none of above.

3 Video frequency oscillator generates _____ Hz range frequencies.

i) 20 to 20K ii) 20 K to 30 M iii) 30 M to 300 M iv) 300 MHz and above

4 The frequency stability of an oscillator improves as $\frac{d\vartheta}{d\omega} \rightarrow$ _____.

i) 0 ii) ∞ iii) 90^0 iv) 180^0

5 The class C amplifier has conduction angle of_____.

i)less then 180^0 ii) 360^0 iii) more then 180^0 iv) between 180^0 and 360^0

6 Maximum conversion efficiency of class – B push pull amplifier is ____.

i) 25% ii) 50% iii) 78.5% iv) 100%

Q.2 Short questions (Attempt any three) 6

1 State Barkhausen criteria for an oscillator.

2 Draw the block diagram and equivalent circuit diagram of a transresistance amplifier.

3 State characteristics of a negative feedback.

4 Explain frequency criteria required for sustain oscillation.

5 Derive expression for conversion efficiency of class A series fed amplifier.

6 Draw the circuit diagram and wave forms for a class B push pull amplifier.

Q.3 a Find out the input and output impedance for voltage series feed back amplifier. 6

OR

Q.3 a Explain input non linear distortion with the help of characteristic curves. 6

Q.4 a In brief explain working of a phase shift oscillator. 6

OR

Q.4 a Draw the circuit diagram of a series and parallel resonance oscillator and explain its working. 6

Q.5 a Classify various categories of a power amplifier and define each with the help of characteristic curves. 6

OR

Q.5 a What is cross over distortion? How it is originate? Explain the method to reduce it. 6