6. (a) Which multivibrator would function as a time delay unit ? Why. **5**

(b) How a Schmitt Trigger is different from a multivibrator ? **5**

(c) Differentiate between 555 monostable and astable multivibrator. **5**

Section D

7. (a) Explain successive approximation A/D converter. **7½**

(b) Explain R-2R ladder network for D/A conversion. **7½**

8. Write short notes on the following : **15**

(a) IGBT

(b) Laser Diode

(c) SET.

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B. Tech. EXAMINATION, May 2017

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

(ECE, BME)

ECE-206-B

ANALOG ELECTRONIC CIRCUITS

(Common with AEI- 5th Sem.)

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. All questions carry equal marks.

Section A

1. (a) What are the various distortions in amplifiers and how these can be reduced ? **7½**

(b) Prove that the response of two stage (identical and nointeracting) low pass amplifier to a limit step is : **7½**

$$V_0 = A_0^2\left(1-(1+x)e^{-x}\right).$$

2. (a) A cetrain amplifier gives an output of 20V, for an input of 200 mV. The amplifier introduces a harmonic disortion of 15%. The tolerable limit of harmonic distortion of output is 3%. Calculate the feedback factor of the –ve feedback to be employed for this task. Also determine the value of modified input in order to get the output unchanged i.e. 20 V. **7½**

(b) Draw and explain emitter follower circuit. Explain which feedback is involved in this. **7½**

Section B

3. Draw and explain the working *f* diagram of R-C coupled amplifier. Drive a condition for sustained oscillation and expression for frequency of oscillations. **15**

4. (a) If power is to be developed in a 5 Ω loud-speaker coil through a transformer in an audio amplifier circuit, calculate the turns ratio of the transformer. Assume the dynamic output resistance of the transistor to be 25 kΩ. **6**

(b) Single ended power amplifier is not much used in practical circuits. Instead a push-pull amplifier circuit is used. Why ? **5**

(c) Explain the difference between power amplifier and voltage amplifier. **4**

Section C

5. (a) Draw and explain circuit and working of series feedback voltage regulators. **7½**

(b) Explain working of SMPS. **7½**