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**S.Y.B. Tech. (Semester - IV) (CBCS)****Examination, May– 2025****Electronic Circuit Design – II****Electronics and Telecommunications Engg.****Sub. Code : 79181 / 79469****Day and Date : Tuesday, 13/05/2025****Total Marks :70****Time : 10.30 a.m. to 1.00 p.m.****Instructions : 1) All questions are compulsory.****Q.1) Attempt following MCQs.****(14)**

- 1) When voltage feedback (negative) is applied to an amplifier, its input impedance.....
  - a) Is decreased
  - b) Is increased
  - c) Remains the same
  - d) None of these
- 2) When current feedback (negative) is applied to an amplifier, its input impedance .....
  - a) Is decreased
  - b) Is increased
  - c) Remains the same
  - d) None of these
- 3) Feedback circuit..... frequency.
  - a) Is independent of
  - b) Is strongly dependent on
  - c) Is moderately dependent on
  - d) None of these
- 4) The gain of an amplifier without feedback is 100 db. If a negative feedback of 3 db is applied, the gain of the amplifier will become.....
  - a) 5dB
  - b) 300dB
  - c) 103dB
  - d) 97dB
- 5) A feedback circuit usually employs..... network.
  - a) Resistive
  - b) Capacitive
  - c) Inductive
  - d) transistorized



**Q.4) Attempt any TWO of the following. (14)**

- Draw circuit diagram of Hartley oscillator and show that oscillating frequency is  $f_0 = \frac{1}{2\pi\sqrt{LC}}$  and find out feedback factor.
- Design Fixed bias collector coupled bistable multivibrator for the following specifications:  $V_{CC} = 15\text{ V}$ ,  $V_{BB} = -3\text{ V}$ ,  $I_{C(sat)} = 5\text{ mA}$ ,  $V_{CE(sat)} = 0.3\text{ V}$ ,  $V_{BE(OFF)} = -0.5\text{ V}$ ,  $V_{BE(sat)} = 0.7\text{ V}$ , Triggering frequency = 100kHz,  $h_{fe}(\text{min}) = 40$ .
- Write short note on Three terminal Adjustable Positive voltage regulator (LM 317).

**Q.5) Attempt any TWO of the following. (14)**

- Design RC Phase shift oscillator for following specifications:  
 $V_{CC} = 12\text{ V}$ ,  $f_0 = 1\text{ kHz}$ ,  $h_{fe} = \frac{200}{300}$ ,  $h_{ie} = 4.5\text{ k}$ ,  $I_C(\text{max}) = 200\text{ mA}$ ,  
 $P_D(\text{max}) = 250\text{ mW}$ ,  $s = 10$ .
  - Draw a neat circuit diagram of Schmitt trigger. Explain its operation with suitable waveforms.
  - Design power supply using LM723 for high voltage 10 V .
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