

**B.Tech. – VIEP – ELECTRONICS AND
COMMUNICATION ENGINEERING
(BTECVI)**

Term-End Examination

00023

December, 2018

BIEL-005 : ANALOG ELECTRONIC CIRCUITS

Time : 3 hours

Maximum Marks : 70

Note : Attempt any **seven** questions. Any missing data may be suitably assumed and mentioned. Use of scientific calculator is allowed.

1. (a) Draw and explain the circuit diagram of cascode amplifier. 5
- (b) Derive A_i , A_v , R_i , R_o for common emitter configuration using h-parameters. 5

2. (a) Explain about different distortions in amplifier. 5
- (b) A power amplifier has ac output of 10 watts at 20% harmonic distortion. Find ac output power due to fundamental frequency. 5

3. (a) Explain the effects of negative feedback on a system. 5
- (b) If a circuit has resonant frequency 40 kHz and it works for 38 kHz to 42 kHz, what is its Quality factor (Q)? 5
4. (a) Compare A, B, AB and C amplifiers. 5
- (b) What is parallel resonance? 5
5. (a) Draw and explain the circuit diagram of bistable multivibrator. 5
- (b) An amplifier has open loop gain of 1000 ± 100 . It is desired to have an amplifier whose gain does not vary by more than $\pm 0.1\%$. Calculate
- (i) closed loop gain, and
- (ii) reverse transmission factor (β). 5
6. (a) Explain the working of tuned oscillator. 5
- (b) Explain the working of RC phase shift oscillator using op-amp. 5
7. (a) Discuss the merits and demerits of Darlington compound configuration. 5
- (b) Draw and explain 555 Timer. 5

8. (a) Calculate the frequency of oscillation for Hartley oscillator with $L_1 = L_2 = 1.5 \text{ mH}$ and $C_3 = 0.6 \text{ }\mu\text{F}$. 5
- (b) Explain the equivalent circuit of crystal oscillator. 5
9. (a) Draw and explain the frequency response of BJT and factors affecting its low and high frequency response. 6
- (b) Differentiate between monostable, astable and bistable multivibrators. 4
10. Write short notes on any *two* of the following : $2 \times 5 = 10$
- (a) Clapp Oscillators
- (b) Push Pull Amplifiers
- (c) Variation of Impedance with Frequency
- (d) Double Tuned Amplifiers
-