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BIEL-005

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B.Tech. - VIEP - ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

June, 2019

BIEL-005 : ANALOG ELECTRONIC CIRCUITS

Time : 3 hours *Maximum Marks : 70*

Note : *(i) Attempt any seven questions.*

(ii) Any missing data may be suitably assumed and mentioned.

(iii) Use of scientific calculators is permitted.

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1. (a) Explain equivalent circuit of BJT using h-parameters for CC configuration. **5**

(b) Discuss the effect of cascading on an amplifier. **5**

2. (a) Describe high frequency model for CE configuration. **5**

(b) Discuss about series resonance. **5**

3. (a) Explain Darlington configuration with circuit diagram. **5**

(b) If two transistors having $\beta_1 = 50$ and $\beta_2 = 40$ are connected as Darlington pair then calculate net β. **5**

4. (a) Discuss class-C amplifier operation. 5
   (b) Explain Barkhausen criterion of oscillation and classify oscillators. 5

5. (a) Calculate frequency of oscillation for wein bridge oscillator if $R = 4\ k\Omega$ and $C = 0.25\ \mu F$. 5
   (b) Discuss the merits and demerits of negative feedback amplifier. 5

6. Explain Hartley oscillator and derive expression for resonant frequency. 10

7. Draw the circuit diagram of Push-pull amplifier and explain its working principle. 10

8. (a) Mention the applications of astable, monostable and bistable multivibrators. 5
   (b) Draw and explain the circuit diagram of monostable multivibrator. 5

9. (a) Compare different transistor amplifier configuration. 5
   (b) An amplifier has output voltage of 40 V and 8% harmonic distortion when input voltage is 0.05 V. If 2.5% of output is mixed with input in phase opposition, then calculate output voltage and harmonic distortion. 5

10. Write short notes on **any two** of the following : **2x5=10**
   (a) Advantages and disadvantages of tuned amplifier.
   (b) Frequency stability of oscillatory circuits.
   (c) UJT
   (d) High frequency response of BJT.
