

## Unit – IV

# Methods of coupling and Multistage Amplifiers and Feedback in Amplifiers

- 4.1 In an RC coupled amplifier, the gain decreases in the frequency response due to the
- (a) Coupling capacitor at low frequency and bypass capacitor at high frequency.
  - (b) Coupling capacitor at high frequency and bypass capacitor at low frequency
  - (c) Coupling junction capacitance at low frequency and coupling capacitor at high frequency.
  - (d) Device junction capacitor at high frequency and coupling capacitor at low frequency.
- 4.2 A signal may have frequency components which lie in the range of 0.001Hz to 10 Hz. Which one of the following types of couplings should be chosen in a multistage amplifier designed to amplify the signal?
- (a) RC coupling
  - (b) Direct coupling
  - (c) Transformer coupling
  - (d) Double tuned transformer coupling.
- 4.3 The overall bandwidth of two identical voltage amplifiers connected in cascade will
- (a) Remain the same as that of a single stage
  - (b) Be better than that of a single stage
  - (c) Be worse than that of a single stage
  - (d) Be better if stage gain is low and worse if stage gain is high
- 4.4 Two identical RC coupled amplifiers, each having a lower cut-off frequency  $f_l$ , are cascaded with negligible loading. What is the lower cut-off frequency of the overall amplifier?

- (a)  $\frac{f_l}{\sqrt{\sqrt{2}-1}}$
- (b)  $f_l \sqrt{\sqrt{2}-1}$
- (c)  $\frac{f_l}{2}$
- (d)  $2f_l$

4.5 Two identical RC coupled amplifiers each having an upper cut-off frequency  $f_u$ , are cascaded with negligible loading. What is the upper cut-off frequency of the 2-stage amplifier?

(a)  $\frac{f_u}{\sqrt{\sqrt{2}-1}}$

(b)  $f_u \sqrt{\sqrt{2}-1}$

(c)  $\frac{f_u}{2}$

(d)  $2f_u$

4.6 Two amplifiers, one having voltage gain of 40 and the other 20 are coupled with negligible loading. The approximate gain of two-stage amplifier will be

(a) 20

(b) 40

(c) 60

(d) 800

4.7 In a common emitter amplifier, the unbiased emitter resistance provides

(a) Current series feedback

(b) Voltage series feedback

(c) Voltage shunt feedback

(d) Current shunt feedback

4.8 An amplifier incorporates negative feedback using voltage-shunt feedback connection. This feedback will result in

(a) Increased input impedance and decreased output impedance

(b) Increased input impedance and increased output impedance

(c) Decreased input impedance and increased output impedance

(d) Decreased input impedance and decreased output impedance

Answers:

4.1 (d)      4.2 (b)      4.3 (c)      4.4 (a)      4.5 (b)      4.6 (d)

4.7 (a)      4.8 (a)