

Time : 3 Hrs.

M.M. 100

Note :

1. Part 'A' may be attempted in first 5 pages of Answer Sheet.
भाग 'क' के सभी उत्तर, उत्तर-पुस्तिका के प्रथम पांच पृष्ठों में ही करने हैं।
2. Part 'B' in rest of the Sheets of Answer Sheet.
भाग 'ख' के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।
3. Answers may be given in English or Hindi.
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

Part 'A'

10x2= 20

1. Attempt any ten questions:

- (i) Mention the names of coupling view in multistage amplifier.
- (ii) What is the frequency range of Direct coupled amplifier?
- (iii) What is an audio power amplifier?
- (iv) Write short notes on heat sink.
- (v) Define the power dissipation capability of power amplifiers.
- (vi) What do you mean by tank circuit?
- (vii) What are tuned amplifiers?
- (viii) What is damped oscillations?
- (ix) What are the types of oscillators?
- (x) What are the drawbacks of LC oscillators?
- (xi) For a differential amplifier, define common mode rejection ratio. Give significance of CMRR.
- (xii) Define: Output resistance of op-amp.
- (xiii) What are the classification of amplifiers based on frequency?
- (xiv) State the characteristics of photo diode.

2. Attempt any 5 of the following questions:

5 x 4 = 20

- (i) What do you understand by multistage transistor amplifier? Mention its need.
- (ii) What is meant by band width and decibel gain?

- (iii) What is an audio power amplifier? What is it need?
- (iv) Draw the block diagram of practical power amplifiers.
- (v) Discuss the principle of negative feedback in amplifiers with a neat diagram.
- (vi) State the characteristics of ideal operational amplifier.
- (vii) What is an oscillator? What is its need? Discuss the advantages of oscillators.
- (viii) What do you understand by quality factor Q of parallel tuned circuit?

PART-B

3 x 20

Attempt any 3 of the following questions:

3. (a) With neat circuit diagram, explain the working of transformer coupled transistor amplifier?
(b) Explain in detail about direct coupled transistor amplifier?
4. (a) Derive an expression for the gain of negative feedback amplifier?
(b) Describe the action of emitter follower with neat diagram?
5. (a) With neat diagram, explain the action of Hartley and colpitt's oscillators?
(b) Explain briefly about the wein Bridge oscillator?
6. (a) Discuss the circuit operations of a single tuned amplifier?
(b) Explain the working principle of photo voltaic cells.
7. Write short notes on:
 - (a) push-pull amplifier
 - (b) Schmitt trigger
 - (c) single and double tuned amplifiers
 - (d) optical couplers