22329

21222

3 Hours / 70 Marks Seat No. | | | | | | | | |

15 minutes extra for each hour

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following : 10

(a) Define :

(i) Amplification

(ii) Bandwidth

(b) Draw circuit diagram of transistor as an amplifier.

(c) Define : Cross over distortion

(d) State any two advantages of negative feedback.

(e) Draw block diagram of negative feedback with its input and output` waveforms.

(f) Define : Time Base Generator

(g) List two application of Switch Mode Power Supply (SMPS).

2. Attempt any THREE of the following : **12**

(a) Define the following amplifier characteristics :

(i) Voltage gain

(ii) Current gain

(b) Compare voltage series and voltage shunt feedback amplifier on following basis :

(i) Distortion

(ii) Output resistance

(iii) Bandwidth

(iv) Gain

(c) Explain working of switch mode power supply with neat diagram.

(d) With neat output waveform of sweep generator explain following terms :

(i) Retrace time

(ii) Sweep time

3. Attempt any THREE of the following : **12**

(a) Compare Class A and Class B power amplifier on the basis of :

(i) Position of Q point

(ii) Distortion in output voltage

(iii) Efficiency

(iv) Power dissipation in transistor

(b) List any four applicatios of power amplifier.

(c) Draw +15V and – 15V dual polarity regulated power supply.

(d) Draw pin configuration of adjustable voltage regulator IC LM 723 and state function of each Pin.

4. Attempt any THREE of the following : **12**

(a) Explain working of transformer coupled class A power amplifier with neat circuit diagram.

(b) Explain working of FET as an amplifier with neat diagram.

(c) Compare positive and negative feedback on basis of :

(i) Voltage gain

(ii) Distortion

(iii) Noise in output signal

(iv) Stability of circuit

(d) Draw RC phase shift oscillator and explain how phase shift occurs.

(e) Identify the circuit given below in Fig-1 and explain its working.

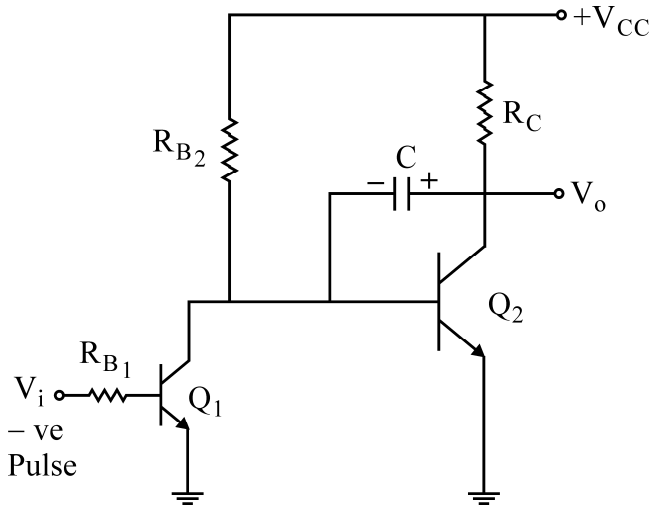

Fig.-1

5. Attempt any TWO of the following : **12**

(a) Draw circuit diagram and waveform of Bootstrap sweep generator.

(b) Explain working of Class B power amplifier with neat diagram.

(c) Draw circuit diagram of RC coupled transistor two stage amplifier and explain its working with its frequency response.

6. Attempt any TWO of the following : **12**

(a) Sketch frequency response of single stage common emitter CE amplifier and label the following :

(i) 3 dB lower cutoff frequency

(ii) 3 dB upper cutoff frequency

(iii) 3 dB bandwidth

(b) Draw current series and current shunt feedback amplifier.

Compare them on the basis of :

(i) Bandwidth

(ii) Voltage gain

(c) Draw circuit diagram of Class AB Push Pull amplifier and list its any three advantages.
