

In.M.Sc. Applied Physics, 5 years

8TH SEMESTER

FPYC-805: ELECTRONICS

Marks-100

Unit-I

Amplifiers:

Frequency response of linear amplifiers, amplifier pass band, R. C. L. C. and transformer coupled amplifiers, Frequency response, gain band-width product, Feedback amplifiers, effects of negative feedback, Boot-strapping the FET, Multistage feedback, stability in amplifiers, noise in amplifiers.

Operational amplifiers:

The differential amplifiers, integral amplifier, rejection of common mode signals. The operational amplifier input and output impedances, application of operational amplifiers, unit gain buffer, summing, integrating and differentiating amplifiers, comparators and logarithmic amplifiers. (12)

Unit-II

Oscillator Circuits:

Feedback criteria for oscillation, phase shift, Wien bridge oscillator, crystal controlled oscillator, klystron oscillator, Principle of multivibrator. (10)

Unit-III

Digital Circuits:

Logic fundamentals, Boolean theorem, Logic gates RTL, DTL and TTL gates, CMOS switch RS flip-flop, JK flip-flop

Radio Communication:

Ionospheric propagation, Antennas of different types, super heterodyne, receiver (Block diagram). Various types of optical fibers and optical communications. (15)

Books :

1. Electronic Fundamental and application J. D. Ryder
2. Int. Digital Electronics Heap and Martin
3. Integrated Electronics Millman and Halkias 3. . Foundation of Electronics Chattopadhyay, Rakshit, Saha and Purkalt