



B. Sc.(PHYSICS) Semester –VI

Paper-II (Electronics, Fibre optics, Communication and Digital electronics)

Unit I

Amplifiers- Classification of amplifiers, multistage amplifiers

<https://youtu.be/ZJwCPU7RfQ?feature=shared>

<https://youtu.be/kiiA6WTCQn0?feature=shared>

Operational amplifier- parameters

<https://youtu.be/AuZ00cQ0UrE?feature=shared>

Basic idea of IC-741, Application of Op. Amp. as inverting, Non inverting

<https://youtu.be/jsKSfaFQ4d4?feature=shared>

Adder, Subtractor

<https://youtu.be/2SBtWbMoT7U?feature=shared>

Integrator and Differentiator

<https://youtu.be/1B4O5gy6A6U?feature=shared>

<https://youtu.be/yI0MYJCKlwk?feature=shared>

Oscillators- Concept of feedback, Physical consideration of tuned circuits Phase shift oscillator

<https://youtu.be/XVS8Puf4tiw?feature=shared>

Hartley oscillator, Colpitts oscillator

https://youtu.be/rmhC_ZwnTF0?feature=shared

Unit II

Fiber optics- Importance of optical fiber, Propagation of light waves in optical fiber

<https://youtu.be/zb2M5vBdj4g?feature=shared>

Basic structure, Stepped index monomode fiber, Graded index fiber,

<https://youtu.be/XGyU3bSXirA?feature=shared>

Acceptance angle and acceptance cone, Numerical aperture

<https://youtu.be/APBxllJokzs?feature=shared>

Fiber losses and their units (basic concept), Electrical and optical band width

https://youtu.be/_v-C4rC3QFY?feature=shared

bandwidth length product, Dispersion in optical fiber

<https://youtu.be/z6qyBzyf7Bc?feature=shared>



Unit III

Communication- Introduction, amplitude modulation

https://youtu.be/mHvV_Tv8HDQ?feature=shared

Frequency spectrum, Modulation factor, over modulation, Percentage modulation,

<https://youtu.be/DiggIn6Lxzg?feature=shared>

Expression for Power and Currents in AM wave, disadvantages,

<https://youtu.be/tKGLbOxaarw?feature=shared>

Frequency modulation -

<https://youtu.be/7SABvlvKXPA?feature=shared>

Frequency deviation, Carrier swing, Modulation index

<https://youtu.be/VRzg8HMvGVk?feature=shared>

Deviation ratio, Expression for FM wave, Frequency spectrum, significant side band terms, FM band width, Merits and demerits.

<https://youtu.be/32DPN8Bn62I?feature=shared>

Unit IV

Number Systems- Unitary systems, Binary, decimal, octal, hexadecimal

<https://youtu.be/2joeDD5-v3s?feature=shared>

https://youtu.be/NY2gz_Kzc0Q?feature=shared

Binary coded decimal (BCD), Addition and subtraction of binary numbers, 1S, 2S and 10S complement,

https://youtu.be/9UxAXb_Bk3M?feature=shared

Basic logic gates, NOR, NAND, Ex-OR, Ex-NOR and their truth table,

<https://youtu.be/Q9gmAgwT6o8?feature=shared>

Half adder, Full adder

<https://youtu.be/zm71wFsj-fs?feature=shared>

Half subtractor and full subtractor,

<https://youtu.be/7WoTCwgx0kE?feature=shared>

Boolean equations, De Morgan's theorem and its verified

<https://youtu.be/W7YTfLaPWRY?feature=shared>