OPTICAL FIBER COMMUNICATION

Very Short Answer type questions

Q. Snell's law
Q Pin diode
Q Doping
Q Attenuation
Q Optical frequency range
Q fit rate
Q Refractive index
Q Dark current
Q Laser
Q Spontaneous emission
Q Optical connector
Q Quantum efficiency
Q Responsivity
Q Absorption
Q Dynamic response of LED
Q Fiber couplers
Q Acceptance angle
Q Dispersion

Short answer type questions.
Q. Explain laser oscillation.
Q What are the application of optical fiber communication system.
Q Write a short note on optical switches.
Q What is the role of photo diode in OFC?
Q Explain in brief about bending losses.
Q Describe APD in detail.
Q Write a note on fusion splicing method.
Q Explain optical digital link.
Q What are the properties of a good connector?
Q Explain the block diagram of optical fiber comm.
Q What is the principle of operation of distributed feedback laser.
Q What are the disadvantages of OFC system?
Q Explain in brief the performance characteristics in photo diode.
Q Write a short note on population inversion.
Q Write a short note on Micro bending.

Long answer type questions
Q Explain the operation of LED. Also explain different types of LED's and its different structures.
Q Explain in detail different type of losses in OFC.
Q What do you mean by Optical splicing.
Q Write a note on nonlinear scattering losses.
Q Define dispersion. What are its different types? How these affect the working of optical fibre communication system.

Microwave and Radar Engg.

Very Short Answer type questions.

Q. What is frequency range of X band?
Q Define waveguide.
Q Draw shape of circular wave guide.
Q TEM stands for_____.
Q _____ mode is impossible in a wave guide.
Q Define guide wavelength.
Q Define E- Bends.
Q What is use of Isolator?
Q Define Variable attenuator.
Q Define vacuum tubes.
Q Klystron tube is widely used as _____ at microwave frequencies.
Q TWT stands for _____.
Q Draw structure of Horn antenna.
Q D layer is at a height of _____.
Q Define unambiguous range.
Q Expand FMCW.
Q Name any most common type of radar display.
Q VSAT stands for _____.

Short answer type questions

Q.What are applications of microwave frequencies?
Q Why wave guides are used for higher frequencies?
Q Write expression for propagation constant of a rectangular wave guide.
Q Write a short note on "slotted section".
Q What are Tees? What are different types of Tees?
Q What is the use of Twists in microwave components?
Q Explain the basic concepts of thermionic emission and vacuum tube.
Q Explain the effect of transit time on high frequency performance of conventional vacuum tube.
Q What are applications of reflex Klystron?
Q Write a short note on "Gunn diode".
Q What are different applications of Horn antennas?
Q Explain troposphere and its properties.
Q Explain the radar range equation.
Q Write a short note on "PPI".
Q What are different multiple access techniques?

Long answer type questions

Q. What is microwave? Classify microwave on the basis of its frequency bands.
Q Explain Microwave circulator with the help of suitable diagram. Also write applications of microwave circulator.
Q. Explain characteristics and working of Multi-cavity magnetron.
Q. Draw and explain the block diagram of microwave communication link.
Q. Draw and explain block diagram of MTI radar system.

Power Electronics

Short answer type questions.

Q State the functions of latching and holding cccrrent in thyristors

Q Explain the di/dt and dv/dt feature of a thyristors
Q How the voltage across the commutating capacitor in reversed in a commutating circut

Q Explain basic single phase half wave controlled rectifier
.
Q Explain why a separate free wheeling diode is not in case of single phase full wave half controlled rectifier.

Q List the applications of parallel inverter?
Q Explain the difference between class A, class B and class C chopper.
Q Explain the features of cyclo converter?
Q What is the role of chopper is power electronic ckts ?
Q How speed control of full wave drive is managed?

Q Explain the role a cyclo converters in ac drives .

Q Compare the features of offline UPS and online UPS

Q Explain the functions of smart UPS

Q Explain the features of PUT

Q Explain the role of heat sink used in thyristors based circuits.

: **Long answer type questions.**

Q Describe the operation of a single phase wave controlled rectifiers with resistive load.Draw neat circuit diagram.

Q Explain the principle and operation of stepup and stepdown choppers.

Q. Explain with example, thyristorised control of Electric Drive. (any one example)

Q. Draw the VI characteristic of UJT and explain in detail.

Q. Write short note on

a)Thyrister based battery charger circuit

b)Principle of DIAC

Consumer Electronics

Very Short Answer type questions.

Q What is the function of capstan in a tape recorder?
Q Define IF signals.
Q Define aspect ratio.
Q Define link blanking period.
Q What is the use of aluminium coating?
Q Define Hue.
Q What are secondary colours?
Q What is colour triangle?
Q What is the application of DTH?

Short answer type questions

Q Write short note on Multi speaker system.
Q Explain the working of Digital recording system.
Q What is scanning? What is the need of scanning?
Q What is the need of Synchronization?
Q Write a short note on "Composite video signal".
Q What do you understand by beam modulation in TV picture tube?
Q Draw schematic diagram of Vidicon camera tube.
Q Explain why VSB transmission is used.
Q Explain the function of RF tuner of monochrome TV receiver.
Q What is the function of AGC circuits in TV receiver.
Q Explain the concept of additive mixing.
Q Explain how R, G and B signals are formed in colour TV system?
Q Draw block diagram of PAL TV receiver.
Q Explain the working of LCD TV.
Q Explain the working principle of Digital Cameras.

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Long answer type questions.

Q. What is the working principle of loud speaker? What are different types of loudspeakers?
Q. Explain basic elements of monochrome TV communication system.
Q. Write comparison between NTSC, PAL and SECAM system.
Q. Write short notes on:-
a)Cable TV
b)HDTV
Q.7 Explain the working principle of Scanner with the help of suitable diagram.