

Date.

No.

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Subject modern Telecom
system

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①

Q1a: what is optical spectrum?
Explain the spectrum according to its wavelength or frequencies?

Ans: The optical spectrum is generally defined to encompass electromagnetic radiations with wavelength in the range from 10nm to $10^3\mu\text{m}$, or frequencies in the range from 300GHz to 3000THz .

Q1b: Explain the process of a Free space optical communication system? ~~draw~~ also make a diagram to illustrate the concept thoroughly?

Ans: Free space optical communication is an optical communication technology that uses light propagating in free space to wirelessly transmit data for

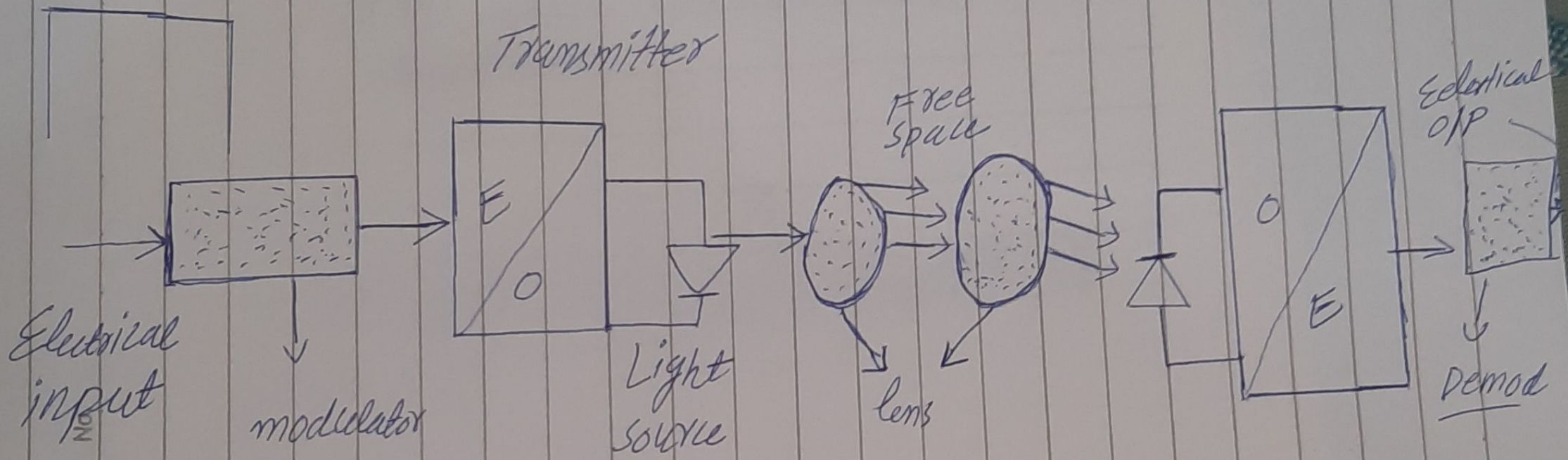
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Telecommunication or computer-
networking Free space means
air, outer space, vacuum or something
similar.

Free space optical communication



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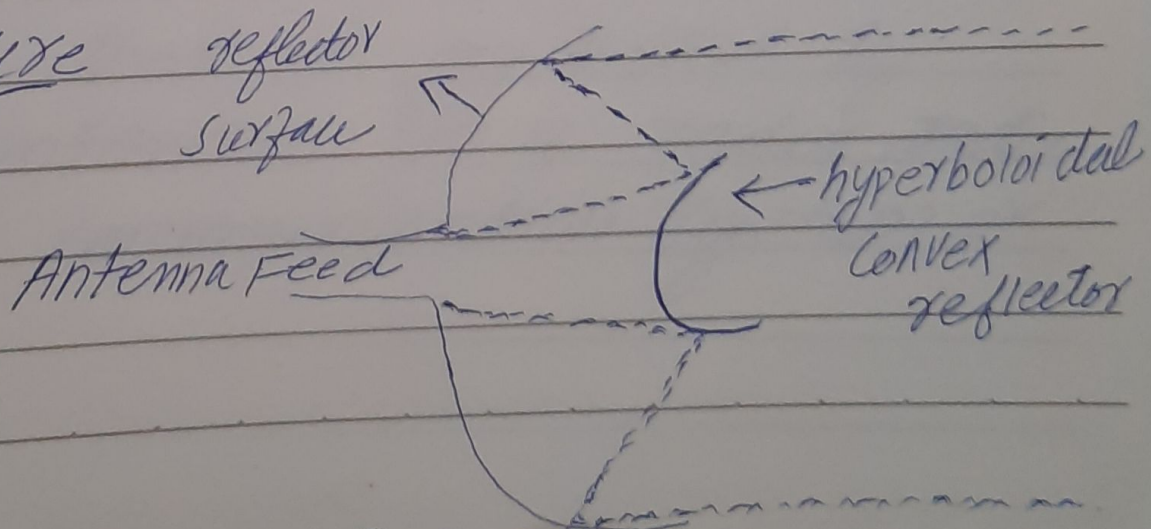
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Q Explain the Feeding Method of Parabolic Antenna? Draw the Figure to explain the concept.

Answer:

Parabolic antennas are also classified by the type of feed that is how the radio waves are supplied to the antenna. Axial prime focus, or front feed with the feed antenna located in front of the dish at the focus on the beam axis pointed back toward dish.

Figure



Q. What are the important types of Fiber optics cables? explain them in brief?

Ans: There are three types of Fiber optic cables used

(1) single mode (2) multimode and

(3) plastic optical fiber.

Transparent glass or plastic fibers which allow light to be guided from one end to the other with minimal loss.

Q2a: Explain the functionality of a --- used in it?

Ans: it is used to amplify the weak signal that is gathered by the antenna in a radar, radio or other communication system or sensor.

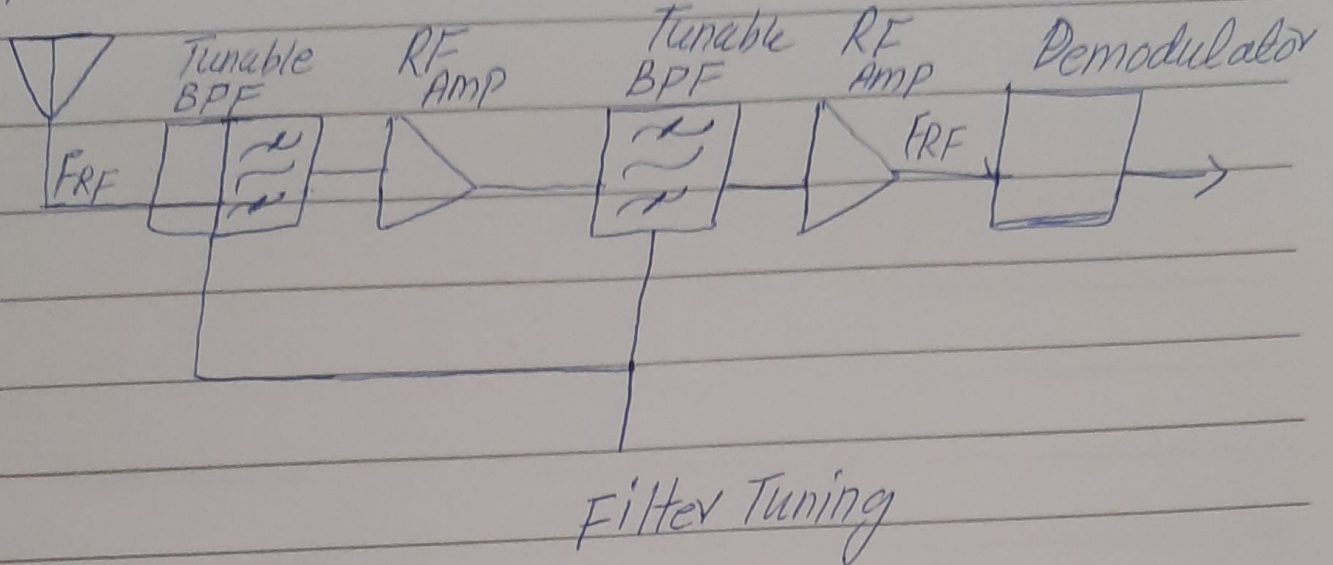
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Figure microwave receiver.

Antenna



Qb Name the three important -----
----- Explain in
brief?

Ans: currently, Field Effect
Transistor (FET) is the most
utilized three-terminal
semiconductor device used in
microwave and mmwave freq band

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Q.3a: What are the important types
in brief?

Answer: ① Transistor Amplifiers:

• A low-noise transistor with a gain of about 10 to 25 dB is typically used as microwave amplifiers.

② MMIC Amplifiers

• A common monolithic microwave integrated circuit (MMIC) amplifier is one that incorporates two or more stages of FET or bipolar transistors made on a common chip to form a multistage amplifier.

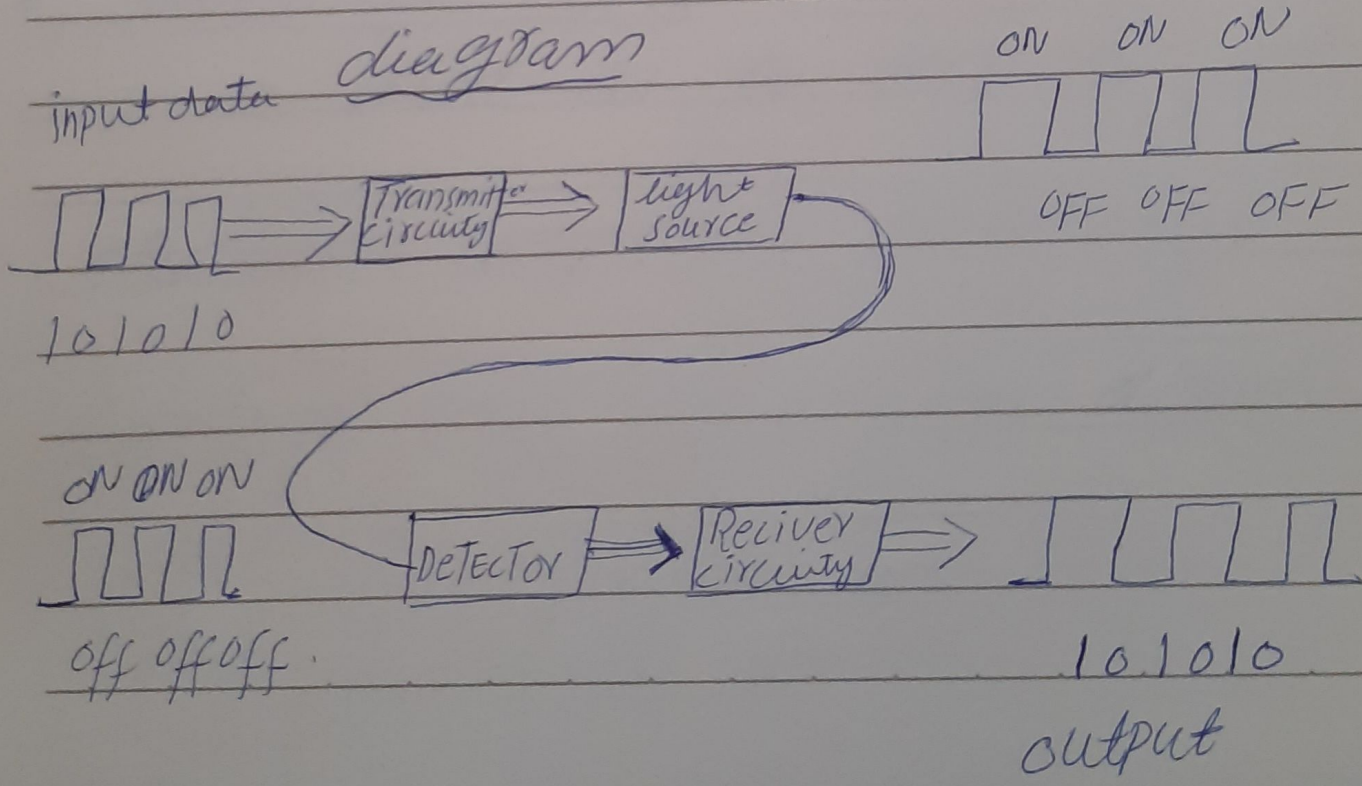
③ Power Amplifiers:

• A type class A microwave power amplifier is designed with microstrip lines used for impedance matching.

Q30) What are the basic - - - - -
- - - - - grammatically.

ANSWER:

The optical basic of components are light signal transmitter, the optical fiber, and the photo detecting receiver. The additional elements such as fiber and cable splicers and connectors, regenerators, beam splitters, and optical amplifiers are employed to improve the performance of the communication system.



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300 How oscillator diodes are -----
----- brief

ANSWER:

a oscillator diode is simply an oscillator built around a diode device. A diode type that use two negatively doped region.

• Normal diode

a diode as a two terminal electronic component that only

conducts current in one direction

An ideal diode will have zero resistance in one reverse.

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Q3 (a) What is difference b/w a waveguide and a cavity resonator?

Answer waveguide

a waveguide is a structure that guides waves, such as electromagnetic waves or sound with minimal loss of energy by restricting the transmission of energy to one direction.

∴ Cavity resonator:

a microwave cavity or radio frequency cavity is a special type of resonator, consisting of a closed metal structure that confines electromagnetic field in the microwave region of spectrum.