Q.28 Write constructional features of Magic Tee.

Q.29 Explain characteristics of Horn Antenna.

Q.30 Draw the block diagram of microwave communication link.

Q.31 Draw and explain block diagram of Basic Pulse radar.

Q.32 Define RADAR and its applications

Q.33 Explain the effect of Inter electrode capacitance.

Q.34 Explain the VSAT and its features.

Q.35 Explain the operating principle of TWT

## SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Draw and explain the construction and working of Reflex Klystron

Q.37 Explain block diagram and working principle of FMCW radar.

Q.38 Define Microwaves and classify it on the basis of various bands.



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**5th Sem / ECE**
**Subject:- Microwave & Radar Engg**

Time : 3Hrs. M.M. : 100

## SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Frequency range of C band is:

a) 4 GHz to 8 GHz b) 1 Ghz to 10 GHz

c) up to 900 GHz d) 20 GHz

Q.2 A waveguide is equivalent to a

a) Low pass filter b) High pass filter

c) Band Pass Filter d) None

Q.3 Number of cavities in reflex klystron is

a) 4 b) 2

c) 1 d) 0

Q.4 Radar stands for

a) Radio Distance and Ranging

b) Radio Detection and Ranging

c) Radio Direction and Ranging

d) Radio Distance and Range

Q.5 Dominant Mode of Rectangular Wave guide is

a) $TE_{10}$ b) $TE_{20}$

c) $TE_{01}$ d) None

Q.6 A magnetron is used only as

a) Amplifier b) Oscillator

c) Mixer d) frequency multiplexer

Q.7 What is wave length of a 300 MHz signal

a) 0.3 meter b) 1 meter

c) 10 meter d) None

Q.8 Which material is used in GUNN Diode.

a) Germanium b) Silicon

c) Mercury d) Galium Arsenide

Q.9 Ferrite Isolators are based on

a) Lenz's Law b) Ohm's Law

c) Faraday's Law d) Law of Inertia

Q.10 Which type of modulation is used in Klystrons

a) AM b) FM

c) Velocity d) None

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 UHF_____.



Q.12 Define Isolator.

Q.13 What is the range of L band?

Q.14 Draw Rectangular wave guide.

Q.15 FMCW_____

Q.16 Define Propagation constant.

Q.17 Thermionic emission

Q.18 Define IMPATT Diode.

Q.19 What is the use of attenuator?

Q.20 MTI stands for_____

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Give applications of Microwaves.

Q.22 Explain why TEM mode does not exist in a wave guide.

Q.23 Write a note on guide wavelength.

Q.24 Explain characteristics and applications of detector.

Q.25 Explain Troposcatter propagation with the help of schematic diagram.

Q.26 Explain concept of vacuum diodes.

Q.27 Explain circular waveguide and its applications.