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6th Sem / Branch : Eltx.
Sub.: Microwave & Radar Engg.

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The Ultra High frequency ranges from

a) 300KHZ-300 MHZ b) 300 MHZ - 3 GHZ
c) 3 GHZ-300 GHZ d) None of the above

Q.2 One of the following is a crossed field device.

a) Magnetron b) TWT
c) Two cavity klystron d) Reflex klystron

Q.3 Which of following exhibits negative resistance.

a) TWT b) Impatt diode
c) Gunn Diode d) Reflex klystron

Q.4 One of the following modes does not exist in wave guide.

a) TE11 b) TEM
c) TE10 d) TM01

Q.5 Directivity of an antenna is

a) Directive gain expressed in decibels
b) Maximum valued of directive gain
c) Directly proportional to its beam width
d) Same as directive gain

Q.6 Duplexer is

a) An oscillator b) A Microwave switch
c) An amplifier d) An active device

Q.7 Echo is

a) Transmitted signal b) Modulated signal
c) Demodulated signal d) Reflected Signal

Q.8 Radar is used for

a) Ground mapping b) Airport surveillance
c) Weather forecast d) All of above

Q.9 Beam width is directly proportional to

a) Wavelength b) Frequency
c) Time d) All

Q.10 The following techniques are Doppler filtering techniques that reject stationary clutter and where radial velocity is not measured

a) MTI b) CW
c) FMCW d) Pulse Rader

SECTION-B

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

Q.11 What is the frequency range of microwave.

Q.12 What is range of C-band?

Q.13 Name any two waveguide.

Q.14 Define guide wavelength.

Q.15 Draw H-plane TEE.

Q.16 Write full form of TEM.

Q.17 Define isolator.

Q.18 Define directivity.

Q.19 Radar stands for_____.

Q.20 Write full form of FMCW.

SECTION-C

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

Q.21 List various applications of microwave.

Q.22 Explain TWT structure and its operation.

Q.23 What is a slotted section? Why it is used?

Q.24 What is a waveguide? Discuss its merits.

Q.25 Write a note on cut-off wavelength.

Q.26 Define group velocity and phase velocity.

Q.27 Differentiate between TE & TM mode.

Q.28 Write short note on Impatt diode.

Q.29 Name different Microwave components used in Microwave Communication.

Q.30 Define space wave propagation.

Q.31 Write a note on Horn Antenna.

Q.32 Write a note on troposcatter communication.

Q.33 Draw block diagram of CW Radar system.

Q.34 Explain concept of unambiguous range in Radar.

Q.35 Write different application of Radar.

SECTION-D

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

Q.36 Explain working principle of microwave communication link with help of suitable diagram.

Q.37 Draw and Explain construction and working of multi cavity magnetron.

Q.38 What is the significance of RADAR display. Explain RADAR display PPI with neat diagram