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

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Reflex Klystron is used as _____.

a) Low power microwave oscillator
b) Low power microwave amplifier
c) High power microwave amplifier
d) None of the above

Q.2 Which of the following can be used for coupling the waveguides of different dimensions

a) Twist b) Circulator
c) Isolater d) Tape

Q.3 E layer is at a height of _____

a) 50-100 km b) 100-140 km
c) 140-250 km d) 250-400 km

Q.4 Microwaves are used for_____

a) Remote sensing b) Medical Application
c) Communication d) All above

Q.5 A waveguide is equivalent to a _____

a) Low pass filter b) High pass filter
c) Band press filter d) Band reject filter

Q.6 Frequency range of C band is _____

a) 1GHz to 2 GHz b) 2GHz to 4 GHz
c) 4GHz to 8 GHz d) 8GHz to 12 GHz

Q.7 A magnetron is used only as _____

a) Amplifier b) Oscillator
c) Mixer d) All

Q.8 Which instrument is used for measuring microwave frequency

a) Isolator b) Wave meter
c) Circulator d) None

Q.9 In Radars which device allows the same antenna for both transmission and reception:

a) Duplexer b) Converter
c) Oscillator d) None

Q.10 For measurement of speed of targets, which Radar is used_____.

a) Pulse radar b) MTI Radar
c) CW Radar d) FMCW radar

SECTION-B

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

Q.11 Define frequency?

Q.12 What is Magnetron?

Q.13 Frequency range of UHF frequency bands is ____?

Q.14 Give two application of microwaves.

Q.15 Impatt diode is used as _____.

Q.16 In Radar range equation 5 denotes the _____?

Q.17 ____ is used for measuring Microwave frequency?

Q.18 With material is used for making waveguides?

Q.19 RADAR stands for _____?

Q.20 What is Detector.

SECTION-C

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

Q.21 Explain working principle of MTI Radar.

Q.22 Explain troposcatter communication.

Q.23 Write a brief note on HORN ANTENNA.

Q.24 Explain in brief GUNN Diode.

Q.25 Write applications of Microwaves.

Q.26 Explain frequency range of L and S band.

Q.27 Write operating principle of Reflex klystron.

Q.28 Explain rectangular and circular wave guides.

Q.29 Why TEM made is impossible in a waveguide.

Q.30 Differentiate between TE and TM mode.

Q.31 Draw frequency spectrum indicating all frequencies and wavelength.

Q.32 Write a note on Isolation and circulation.

Q.33 Write applications of FMCW Radar.

Q.34 Explain PPI.

Q.35 Explain Radar Range Equation.

SECTION-D

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

Q.36 Explain block diagram and operating principle of microwave communication link.

Q.37 Explain constructional features, characteristics and applications of Matched termination, Twist.

Q.38 Explain the construction and principle of travelling wave tube.