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Roll No.....

6th Sem, Branch : Eletx. Engg.

Subject : Microwave and Radar Engg.

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

Q.1 Klystron operates on the principle of _____.

- a) Velocity Modulation
- b) Amplitude Modulation
- c) Pulse Modulation
- d) Frequency Modulation

Q.2 The modes of propagation supported by a rectangular wave guide is

- a) TM, TEM, TE modes
- b) TM, TE
- c) TM, TEM
- d) TE, TEM

Q.3 Radar is used for :

- a) Ground mapping only
- b) Airport surveillance only
- c) Weather forecast only
- d) all of above

Q.4 Which frequency band is best suited for FM radio & TV broadcasting

- a) HF
 - b) VHF
 - c) UHF
 - d) X Band
- Q.5 Which of the following exhibits negative resistance
- a) TWT
 - b) Impatt-diode
 - c) Gunn diode
 - d) Reflex klystron

Q.6 E layer is at a height of _____

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

Q.7 The term RADAR stands for

- a) Radio direction & reflection
- b) Radio detection & ranging
- c) Radio wave dispatching & receiving
- d) Random detection & Re-Radiation

Q.8 At Microwave Frequencies, the size of antenna becomes

- a) Small
- b) Large
- c) Very small
- d) Very Large

Q.9 A Hollow Rectangular waveguide acts as _____

- a) High pass filter
- b) Low pass Filter
- c) Band Pass Filter
- d) Low Frequency radiator

Q.10 With circular wave guides the type of attenuator used is _____

- a) Rotary Type
- b) Flap Type
- c) Either A or B
- d) Neither A or B

Section B

Note: Objective types Questions. All Questions are compulsory. (10x1=10)

- Q.11 Define microwave?
- Q.12 What is Klystron?
- Q.13 Frequency range of VHF Frequency band is ____?
- Q.14 Give two applications of microwaves.
- Q.15 Multicavity Klystron is used as ____.
- Q.16 D Layer is at height of ____?
- Q.17 ____ is used for measuring Microwave frequency?
- Q.18 Define Cut off wavelength?
- Q.19 PPI Stands for ____?
- Q.20 What is microwave bend.

Section-C

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

- Q.21 Differentiate between TE and TM modes..
- Q.22 Write a short note on GUNN Diode.
- Q.23 Explain applications of Microwaves and its classification.
- Q.24 Differentiate Between Circulator & Isolator.
- Q.25 Draw frequency spectrum indicating all frequencies & wavelengths.
- Q.26 Explain Troposcatter Communication in brief.
- Q.27 Explain MTI radar.

- Q.28 Write applications of Circulate Waveguide.
- Q.29 Write any two applications of Magnetron. Why magnetron is called as cross field device?
- Q.30 Why TEM mode is not possible in a waveguide?
- Q.31 Draw block diagram of microwave communication link.
- Q.32 What is waveguide attenuator? What are different types of waveguide attenuators?
- Q.33 What are high frequency limitations of conventional tubes?
- Q.34 Write a short note on “Modes of waveguide”.
- Q.35 Explain Radar display PPI.

Section-D

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

- Q.36 Explain block diagram and operating principal of CW and FMCW radar.
- Q.37 Explain constructional features, characteristics and applications of Tees and Coaxial to wave guide adapter.
- Q.38 Explain the construction and principle of Reflex Klystron.