

S.B. Roll. No.....

**MICROWAVE AND RADAR ENGINEERING**  
**6<sup>th</sup> Exam/ECE/3612/Jun'2022**  
**(For 2018 Batch Onwards)**

**Duration: 3Hrs.**

**M.Marks:75**

**SECTION-A**

**Q1. Fill in the blanks.**

**15x1=15**

- a. VHF ranges between \_\_\_\_\_ to \_\_\_\_\_
- b. C band ranges from \_\_\_\_\_ to \_\_\_\_\_ GHz.
- c. TWT stands the \_\_\_\_\_ tube.
- d. \_\_\_\_\_ Mode is not used in wave guides.
- e. The slotted line is used to measure \_\_\_\_\_.
- f. Isolator works on \_\_\_\_\_ principle.
- g. \_\_\_\_\_ exhibits negative resistance
- h. \_\_\_\_\_ is a cross field device.
- i. Electron bunching occurs at \_\_\_\_\_ cavity.
- j. The dominant mode in rectangular waveguide is \_\_\_\_\_.
- k. UHF stands for \_\_\_\_\_.
- l. RADAR stands for \_\_\_\_\_.
- m. PPI in a radar system stands for \_\_\_\_\_.
- n. PIV stands for \_\_\_\_\_.
- o. The maximum unambiguous range in a system depends on \_\_\_\_\_.

**SECTION-B**

**Q2. Attempt any six questions.**

**6x5=30**

- i. What are Microwaves? List various applications of microwaves.
- ii. Explain the working principle of travelling wave tube.
- iii. Explain microwave isolator in detail with diagram.
- iv. Explain the working of Magic tee with the help of diagram.
- v. With the help of a diagram explain the working principle of GUNN diode.
- vi. Write the applications of Radar.
- vii. Why TEM mode is impossible in waveguides?

**SECTION-C**

**Q3. Attempt any three questions.**

**3x10=30**

- a. With the help of block diagram explain the working principle of microwave communication link.
- b. Explain the operating principle of MTI Radar with the help of block diagram.
- c. With the help of a neat diagram explain the principle of operation and working of Magnetron.
- d. Give the block diagram of CW (Doppler) Radar and explain the function of each block.
- e. Write a short note on the following. **(any two)**
  - i) Reflex Klystron
  - ii) Magic Tee
  - iii) GUNN diode.