(d) Explain parametric amplifiers. 2.5

(e) Explain in detail measurement of SWR. 2.5

(f) Write a short note on RFID. 2.5

UNIT – I

2. (a) Explain in detail the history of electromagnetic waves. What are the advantages of microwaves ? 7.5

(b) Explain in detail the propagation of TM waves in Rectangular waveguide. 7.5

3. (a) Explain in detail the characteristic impedance of rectangular waveguide. 7.5

(b) What are planer transmission lines? Also discuss the cutoff frequency of a waveguide 7.5

UNIT – II

4. (a) Explain in detail hybrid or magic Tee. Find out the measurement of impedance using magic Tee. 7.5

(b) What are Directional Couplers ? Explain the coupling factor and Directivity of it. 7.5

5. (a) Explain in detail crossed field amplifiers. 7.5

(b) Explain the Construction, Operation and properties of Klystron amplifier. 7.5

UNIT – III

6. (a) Explain the V-I Characteristics and Doping profiles of Varactor Diode. 7.5

(b) Explain in detail IMPATT and TRAPATT. 7.5

7. (a) Explain in detail frequency wavelength and impedance. 7.5

(b) Explain the working and construction of Microwave bridges. 7.5

UNIT – IV

8. (a) Explain in detail free space radar range equation. What is Maximum radar range ? Derive the expression for it. 7.5

(b) What are Modern Trends in Microwaves Engineering ? Also explain the Effect of Microwaves on human body. 7.5

9. (a) Differentiate between Electromagnetic interference and Electromagnetic Compatibility. 7.5

(b) Explain in detail Monolithic Microwave ICs. 7.5

Roll No. .....

3723

B. Tech. 8th Semester (Electronics & Communication Engineering) Examination - May, 2023

MICROWAVE THEORY AND TECHNIQUE

Paper : PCC-ECE-404-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 will be ***compulsory***. Students have to attempt ***five*** questions in total, first being ***compulsory*** and selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) What are the various applications of Microwaves ? 2.5

(b) Explain in detail properties of S Matrix. 2.5

(c) What is magnetron ? Explain in detail. 2.5