

C 62949

Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
[SUPPLEMENTARY] EXAMINATION, APRIL 2014**

(2009 Scheme)

EC/PTEC 09 702—MICROWAVE ENGINEERING

Time : Three Hours

Maximum : 70 Marks



**Part A**

1. State any two properties of scattering matrices.
2. Define Coupling coefficient.
3. What are the limitations of conventional tubes ?
4. What is Gunn Effect ?
5. Define VSWR.

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

6. Write the scattering matrix for a four port network and explain its elements.
7. Explain Magic Tee and its applications.
8. What is a backward wave oscillator ? Explain.
9. Explain the high frequency limitations of transistors.
10. Explain the operation of Gunn Diode Oscillators.
11. Explain and compare Hybrid and Monolithic MICs.

(4 × 5 = 20 marks)

**Part C**

12. With suitable example, explain reciprocal and non-reciprocal networks and their applications.

*Or*

13. Explain the operation of isolators and circulators.
14. Discuss in detail about Reflex Klystron and its characteristics.

*Or*

15. Explain the operation of a Magnetron and Travelling Wave Tube.
16. Derive the Manley Rowe relations and explain its significance.

*Or*

17. Explain the operation in detail about IMPATT and TRAPATT diodes.
18. With neat sketch explain the field distributions of microstrip line and slot line.

*Or*

19. Explain Microwave power measurement and impedance measurement.

(4 × 10 = 40 marks)