19EC602 - Microwave and optical Engineering

Regulations 2019

PART A (2MARKS)

1. Explain the conditions for oscillation in reflex klystron.
2. How the klystron amplifier act as klystron oscillator?
3. State the characteristics of magnetron and 2-cavity klystron amplifier.
4. Why S-matrix used in microwave analysis?
5. List the advantages of ABCD matrix.
6. Explain bunching.
7. Define velocity modulation.
8. Why the output cavity is called as catcher cavity?
9. Name the properties of S-parameters.
10. List the advantages of ABCD matrix.

PART B (13 MARKS)

1. Explain about Reflex klystron with neat diagram.   13
2. Examine with neat circuit diagrams and relevant equations, explain the velocity modulation   13
   process and bunching in klystron amplifier.
3. Construct the Travelling Wave Tube Amplifier with neat diagram.   13
4. Inference the conversion of ABCD and S matrix for two port network.   13
5. Explain about Two cavity Reflex klystron with neat diagram.   13
6. Examine with neat circuit diagrams, explain the Gunn diode and its mode.   13
7. Analyze the Helix Travelling Wave Tube Amplifier with neat diagram.   13
8. Inference Scattering parameters and list the properties of S matrix.   13

PART C – (14 Marks)

1. Inspect the equation for power output and efficiency of two cavity klystron amplifier.   14
2. Analyze Scattering parameters and list the properties of S matrix.   14
3. Inspect the equation for power output and efficiency of single cavity klystron amplifier.   14
4. Compare S-matrix representation of waveguide corners, bends and twists.   14