

Model Question Paper
ANURAG Engineering College
(An Autonomous Institution)
III B.Tech. II Semester Regular Examinations, June -2025
MICROWAVE AND OPTICAL COMMUNICATIONS
(ECE)

Time: 3 Hours

Max.Marks:60

Section – A (Short Answer type questions)		(10 Marks)		
Answer All Questions		Course Outcome	B.T Level	Marks
1.	Define micro waves?	CO1	L1	1M
2.	Define velocity modulation?	CO1	L1	1M
3.	What is the function of the magnetic field in M-type tubes?	CO2	L1	1M
4.	What is the typical material used in Gunn diodes?	CO2	L1	1M
5.	Define Faraday Ferrite Rotation ?	CO3	L1	1M
6.	What is the function of a matched load in a waveguide system?	CO3	L1	1M
7.	What is the role of the isolator in a microwave bench?	CO4	L1	1M
8.	Define VSWR?	CO4	L1	1M
9.	What is the purpose of the cladding in an optical fiber?	CO5	L1	1M
10.	What is the function of a photodiode?	CO5	L1	1M
Section - B (Essay Questions)				
Answer all questions, each question carries equal marks.		(5 X10M = 50M)		
11.	Explain the structure and working principle of a two-cavity klystron with a neat diagram?	CO1	L3	10M
OR				
12.	What are the major limitations of conventional vacuum tubes when operating at microwave frequencies? Explain with reasons.	CO1	L3	10M
OR				
13.	Derive an expression for the hull cut off magnetic flux density with the reference to a cylindrical magnetrons?	CO2	L3	10M
OR				
14.	Explain gun effect using the two valley theory (RWH)?	CO2	L3	10M
OR				
15.	Explain the operation of gyrator with the help of neat sketch?	CO3	L3	10M
OR				
16.	Describe the working of H-plane Tee in microwave systems and Derive the S-matrix of H-plane tee ?	CO3	L3	10M
OR				
17.	Describe the main blocks/components of a microwave bench and their functions?	CO4	L3	10M
OR				
18.	Explain how attenuation is measured using a microwave bench setup. Draw the block diagram and mention the procedure?	CO4	L3	10M
19.	Explain the construction and working of light sources used in optical fiber communication?	CO5	L3	10M
OR				
20.	Describe various light detectors used in optical fiber communication with working principles?	CO5	L3	10M