JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS- October 2022

PhD First Semester

COURSE CODE (CREDITS): 13M1WEC334(3) MAX. MARKS: 15

COURSE NAME: Antenna Theory & Techniques

COURSE INSTRUCTOR: Dr. Naveen Jaglan MAX. TIME: 1 Hour

Note: *All questions are compulsory. CO indicates course outcomes. Marks are indicated against each question in square brackets.*

Q1. A transmission line has primary constants R=0.1Ω/m, L=0.01μH/m, C=100 pF/m. Find the charactertics impedance of the line at 2 GHz. [CO- 2; 2 marks]

Q2. What is double stub matching technique? What are its advantages over single stub matching technique? [CO-2; 1+1=2 marks]

Q3. What is the difference between impedance and admittance smitch chart?

[CO- 1; 1 marks]

Q4. Write the maxwell's equations in differential and integral forms. [CO-1; 2 marks]

Q5. Write all the boundary conditions on electric and magnetic fields:

(a) At Dielectric-Dielectric Interface
(b) At Dielectric-Conductor Interface. [CO-2; 2 marks]

Q6. A 50Ω loss less transmission line is connected to a load of 50+j50 Ω. The maximum voltage measured on the line is 50V. Find the power delivered to the load and the peak voltage at the load-end of the line. [CO-2; 2 marks]

Q7. Two very long loss-less cables of characteristic impedances 50Ω and 100Ω respectively are to be joined for reflection less transmission. Find the suitable matching transformer.

[CO-1; 2 marks]

Q8. Why should high frequency circuits be analyzed with distributed element approach?

[CO-1; 2 marks]