JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- December-2018

Ph.D 1st Semester (PMS)

COURSE CODE: 15P1WPH215   MAX. MARKS:35

COURSE NAME: MICROSTRIP ANTENNA DESIGN

COURSE CREDITS: 3   MAX. TIME: Two Hours

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. You are provided with a material of dielectric constant 2.2 and operating frequency range of S band. Design a ring and rectangular microstrip antenna with inset feed and co-axial feed. What will be the difference in their radiation characteristics and design? If the same antennas will be modified to be used in L band, what modification (without changing the size of antenna) are required and how.

(10)

2. Using Cavity Model, Derive the basic relations for radiation characteristics of Circular or Rectangular microstrip antenna.

(12)

3. What assumptions are taken for calculating array factor of microstrip antennas? Using the same calculate array factor of a 4x4 rectangular microstrip antenna

(8)

4. What are scattering parameters? Explain scattering parameters with energy flow diagram. Is is necessary to have S$_{11}$ and S$_{22}$ same, if yes why and if No how.

(5)