

DEPARTMENT OF PHYSICS AND NANOTECHNOLOGY
FACULTY OF ENGINEERING AND TECHNOLOGY
SRM UNIVERSITY, KATTANKULATHUR

CYCLE TEST – II

Subject code & Title : 15PY101 – PHYSICS
Time : 50 Min

Date : 30.03.16
Max. Marks: 25

PART – A (3 x 4 = 12 Marks)

1. State and verify Poynting theorem.
2. With the help of functional block diagram of RADAR, explain the working principle of RADAR. Also discuss in detail of radar range equation.
3. Derive Einstein's relation and deduce the expression for the ratio of spontaneous emission rate to stimulated emission rate.

PART – B (1 x 13 = 13 Marks)

4. (i) Describe the construction and working of CO₂ laser with necessary diagrams. (9 Marks)

(ii) For a He-Ne laser at 1 m and 2 m distances from the laser the output beam spot diameters are 4 mm and 6 mm respectively, calculate the divergence. (4 Marks)