PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSe DEGREE EXAMINATION DECEMBER 2018
('Third Semester)

Branch - PHYSICS

PHOTONICS & APPLICATIONS

Time: Three Hours   Maximum: 75 Marks
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 15 = 75)

1 a Differentiate between spontaneous emission and stimulated emission. Obtain an expression for Einstein's coefficients.

OR

b What is the principle of laser action? Explain in detail coherence, spatial coherence and monochromaticity.

2 a Discuss about optical pumping and electrical pumping. With neat sketch explain spherical resonators,

OR

b Explain in detail active and passive methods of mode locking.

3 a Give the construction and working of Ruby laser and Nd-YAG laser.

OR

b Describe construction and working of He-Ne laser and He-Cd laser.

4 , a What is the holography? Explain holographic computer memories and nuclear fusion.

OR

b Describe the LASER tracking and measurement of distance.

5 a Explain in detail cathode luminescence and electro luminescence.

OR

b Describe construction and working of LED.. I low to explain response times of LED's.

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