

INTERNATIONAL SCHOOL OF PHOTONICS
COCHIN UNIVERSITY OF SCIENCE & TECHNOLOGY
KOCHI- 682 022



The Departmental Admission Test (DAT -2018) for admission to Ph.D programme of the International School of Photonics is scheduled to be held on 21.06.2018 at 10 AM. The syllabus is also uploaded for reference.

The memo has been issued to the candidates from the Department. Those candidates who do not receive the memo may please contact the Department (Ph:0484 2575848, 0484 2862411). The candidates who qualify DAT shall attend the interview on the same day or the next day with all relevant certificates.

Kochi-22
05.06.2018


DIRECTOR
INTERNATIONAL SCHOOL OF PHOTONICS

**INTERNATIONAL SCHOOL OF PHOTONICS
COCHIN UNIVERSITY OF SCIENCE & TECHNOLOGY**

Ph.D Entrance Test:

SYLLABUS

1. MATHEMATICAL PHYSICS

Curvilinear coordinates, tensors matrices, linear vector space, operators, eigen values and eigen vectors. Bessel, Legendre and Hermite Polynomials. Functions of complex variables, Fourier series, Fourier Transform and Laplace Transform, solving different equations using FT and LT.

2. BASIC ELECTRONICS

Power Circuits, SCR, TRIAC, Power Control Voltage regulators, BJT, FET amplifiers, Operational amplifier-differential amplifier, analog computations – amplifier analog computations –active filters-logarithmic amplifiers, wave - or generators.

3. BASIC SOLID STATE PHYSICS

Crystal structure, Lattice vibrations, Free electron theory of metals, Band theory of solids. Effective mass, electrons and holes, semiconductors.

4. ELECTRODYNAMICS AND OPTICS

Maxwell's equations, Reflection and refraction of Electromagnetic wave in nonconducting and conducting media, wave guides, modes in a wave guide. Q-factor, Oscillating dipoles.

Fraunoffer and Fresnel diffractions. Jone's matrices. Gaussian beam, theory of coherence.