Written-cum-Interview Test for MSR/PhD selection

Dear Candidates,

This is to inform you that we will also be holding a written test for selection to our MSR/ PhD program. This will be followed by interview. The details of the test are as follows:

Written test:	**Interview**
Date: 5th Dec 2016	Date: 5th Dec 2016
Time: 10 AM to 11 AM	Time: 2PM onwards
Venue: LH 408/410 (new Lecture Hall complex)	Venue: Applied Mechanics Committee room

The result of written test will be out by 1230 PM and only those selected in the written test will be eligible for interview.

Details of written test:

The written test will be of objective type and consist of two papers: (i) Basic paper (ii) Advanced paper

The basic paper will comprise of 20 objective questions having 10 each from Engineering Mechanics and Mathematics. The advanced paper will depend on the interest of a candidate. There will be three sets in advanced paper: (i) solid mechanics (ii) fluid mechanics (iii) materials science. If a student, e.g., is interested in MSR/PhD in solid mechanics, he/she will only write the solid mechanics set of advanced paper.

Syllabus for the basic paper are as follows:

1. **Basic Engineering mathematics**: Vector calculus; solution of linear systems; linear algebra; eigenvalues and eigenvectors of a matrix; solution of nonlinear equations - secant method, bisection, Newton-Raphson method; solution of linear differential equations; numerical solution of differential equations

2. **Basic Engineering mechanics**: Particle kinematics in Cartesian and cylindrical co-ordinate systems; particle kinematics relative to rotating frames; particle dynamics; concept of center of mass, kinematics of rigid bodies; moment of inertia; rigid body dynamics (planar case); Work energy principle; Collision; Equivalent force-couple system; Static equilibrium of rigid bodies; Shear force and bending moment diagrams in beams; Trusses and Frames; Friction

Syllabus for the advanced paper is as follows:

1. Solid Mechanics set: all relevant solid mechanics courses from UG program
2. Fluid Mechanics set: all relevant fluid mechanics courses from UG program
3. Materials science set: all relevant materials science courses from UG program in Metallurgy/Materials science

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