



## DEPARTMENT OF CIVIL ENGINEERING

### MINOR I :CVL 861ANALYSIS AND DESIGN OF MACHINE FOUNDATIONS (2015-16)

Time allowed: 1hour  
Venue : II LT1

Date : 11October 2015  
Max marks : 20

NOTE: (a) This question paper contains two questions and one page only. (b) All questions are compulsory. (c) Assume any data which you deem is necessary but not supplied.(d) Draw neat and clear sketches wherever required.

#### Question 1.

- (a) The block foundation shown in the figure below (all dimensions in mm) supports a horizontal compressor operating at an RPM of 6000. The machine itself is 1000 kg and its CG is located at the position indicated by “+” sign. The machine exerts a horizontal force of 150kN at the level of its CG. The soil has a  $C_z$  equal to  $2.5 \times 10^4 \text{ kN/m}^2$ . Determine the adequacy of the foundation with regard to frequency and vibrational amplitude.

(15 marks)

- (b) Determine the inertial force acting on the 500x300x800 mm projection on which the machine is installed.

(5 marks)

