IES GROUP OF INSTITUTIONS ,BHOPAL

ASSIGNMENT-I

APPLIED MECHANICS

BRANCH - ME & EC (DIPL.)   *SUBMISSION DATE:* **25 FEB 15**

Q.1 Define force and system of forces.

Q.2 Find the magnitude of two forces such that if they act at right angle, their resultant is $\sqrt{15}$N but if they act at 60° their resultant is $\sqrt{18}$N.

Q.3 State and prove parallelogram law of forces.

Q.4 A particle is acted upon by three forces equal 5N, 10N and 13N, along the sides of an equilateral triangle taken in order. Find analytically the magnitude and direction of the resultant force.

Q.5 State and prove Varignon's theorem.

Q.6 Write difference between moment and couple.

Q.7 Two coplanar parallel forces, F_1 and F_2 and its resultant is R. If R is at a distance a from F_1 and b from F_2 , then prove that $\frac{f_1}{a} = \frac{f_2}{b}$.