Chandrajeet Chauhan

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION

M.Tech. (SE) - Ist Semester

COURSE CODE: 11M1WCE111 MAX. MARKS: 15

COURSE NAME: Advanced Structure Analysis

COURSE CREDITS: 03 MAX. TIME: 1Hour

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q.1. Determine the deflection of joint 'C' of the truss shown in fig.1. along positive x direction. **(5)**

Q.2. Draw the shear force diagram, bending moment diagram and deflection pattern of the beam shown in fig.2. **(5)**

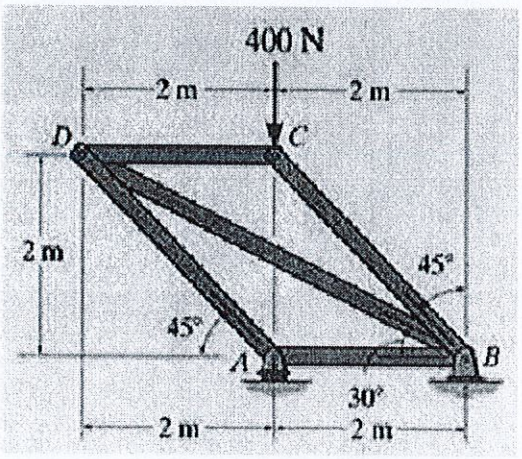

Fig.1.

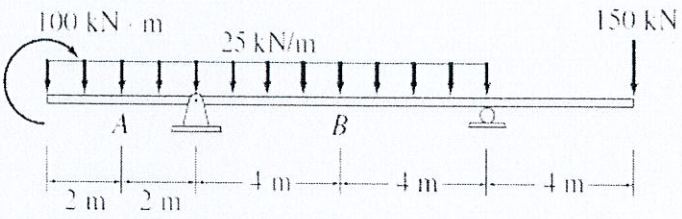

Fig.2.

Q.3. **(1)** Define angle of repose and angle of friction and its practical use in our daily life.

(2) A ladder 6 m long has a mass of 18 kg and its centre of gravity is 2.4 m from the bottom along the axis of ladder. The ladder is placed against a vertical wall so that it makes an angle of 60° with the ground. How far up the ladder can a 72-kg man climb before the ladder is on the verge of slipping? The angle of friction at all contact surfaces is 15°. **(1+4 = 5)**