JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- SEP- 2019

B.TECH 7th Sem/ M.Tech 1st Sem

COURSE CODE: 11M1WCE113   MAX. MARKS: **15**

COURSE NAME: DESIGN OF REINFORCED CONCRETE STRUCTURES

COURSE CREDITS: **3**   MAX. TIME: **One Hr**

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume any suitable data if needed.

Q1. For the beam as shown in Figure 1 having m=15 determine.   [CO1-5]
1) Position of neutral axis
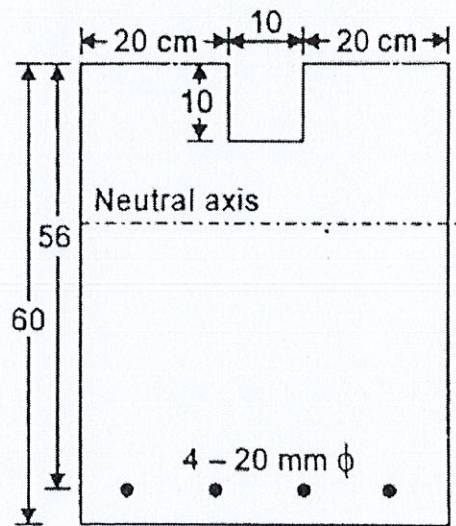ii) Maximum compressive and tensile stresses when it is subjected to a bending moment of 80kN-m

Figure 1

Q2. A square slab of side length 4m is simply supported at the ends and carries a live load of $3kN/m^2$. Design the slab using yield line theory. Take M20 and HYSD bars   [CO2-5]

Q3. Using equilibrium method deduce an equation to find the collapse load of a orthotropically reinforced restrained rectangular two way slab subjected to UDL over its entire area   [CO2-5]