MACHAKOS UNIVERSITY

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN CIVIL ENGINEERING

BCECD 313: STEEL & TIMBER DESIGN

CAT 1

Date: 11/03/2020 **Time: 2Hrs**

Instructions:

- *Answer **BOTH** questions*
- *Maximum marks for each part of the question are as shown.*

Question 1

A universal beam is loaded as shown in figure 1. Select a suitable UB section in grade S275 steel and check for bending and shear. Ignore the self-weight of the UB. Check for bending and shear.

(20 marks)

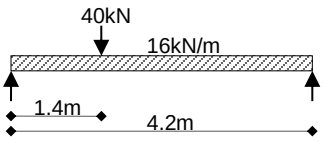

Fig. 1

Question 2

A suspended concrete floor slab 150mm thick is supported on simply supported universal beams of effective length 8m spaced at 3m centres. Select a suitable UB section for the internal beams in grade S275(grade 43) steel and hence check for bending, shear and deflection.

Imposed load 3kN/m^2, finishes 0.8kN/m^2, E=210kN/mm^2 (20marks)