



IQRA NATIONAL UNIVERSITY, PESHAWAR

DEPARTMENT OF CIVIL ENGINEERING

Summer Semester Mid Term Examination 2020 (Online)

Subject: Steel Structures

(Course Code): CE-413

Duration: 09:00 --- 13:00

Instructor: Amjad Islam

Total Marks: 30

Note: Attempt all questions. Assume any necessary data, if required. Use ASD and LRFD manuals for different values.

Q1: (10) (CLO1)

What is the general statement of design philosophies? Write brief notes on ASD and LRFD. Write merits and demerits.

Q2: (10) (CLO1)

Write brief note on types of bolted connections in Steel structures? Also explain failures in bolted connections, with the help of figures.

Q3: (10) (CLO2)

Determine the number of bolts required, and an appropriate lay out, to transmit a dead-load force of 130 k and a live-load of 265 k through two C10 x 30 to a 1-in gusset plate as shown in figure. All material is A-36. Bolts are A325 with $\frac{3}{4}$ -in diameter (standard holes) in a bearing-type connection with threads excluded from the shear plane. Use three lines of bolts across the web of the channel. Check the capacities for Channels only. Use ASD method.

