

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
 TEST -3 EXAMINATION- May 2019
 B-Tech VIth Semester

COURSE CODE: 10B11CE611

MAX. MARKS: 35

COURSE NAME: Design of Steel Structures

COURSE CREDITS: 4

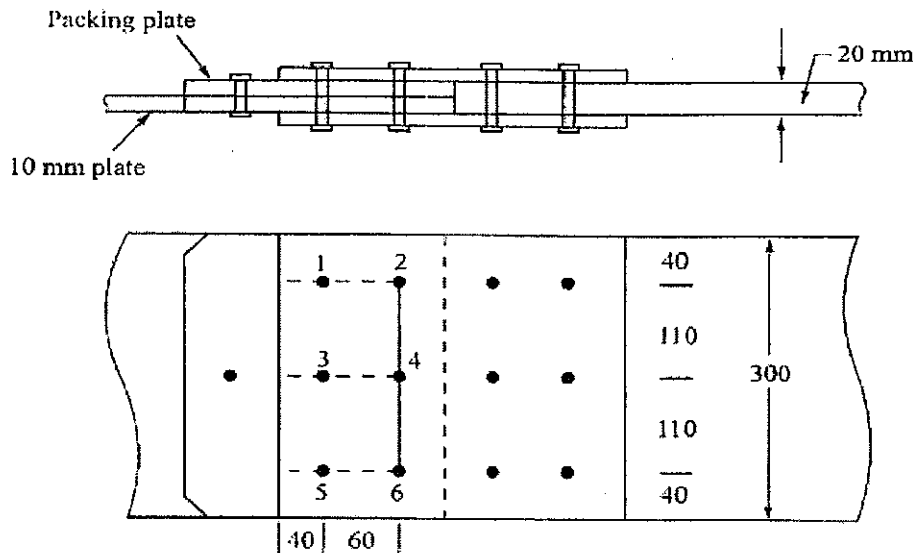
MAX. TIME: 2 Hrs

Note: (i) All questions are compulsory.

(ii) Carrying of mobile phone during examinations will be treated as case of unfair means.

(iii) IS-800:2000 and IS-808:1989 are allowed. (Sharing of codes is strictly prohibited)

- Q1. Design a splice to connect a 300x20mm plate with a 300x10mm plate. The design load is 500KN. Use 20 mm black bolts of grade 5.4. [6 Marks]



- Q2. A tie member of a roof truss consists of 2 ISA 100x75x8mm. The angles are connected to either side of a 10mm gusset plates and the member is subjected to a working pull of 300 KN. Design the weld connection. Connections are made in the workshop. [6 Marks]
- Q3. A tension member of a roof truss carries a factored axial tension of 430 KN. Design the section and its connection using *lug angle*. [7 Marks]
- Q4. Design a laced column with two channels back to back of length 10 m to carry an axial factored load of 1400 KN. The column may be assumed to have restrained in position but not in direction at both ends (hinged ends). [8 Marks]
- Q5. Design a simply supported beam of effective span 1.5 m carrying a factored concentrated load of 360 kN at mid span. [8 Marks]