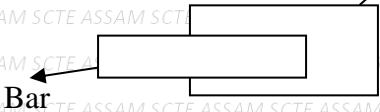
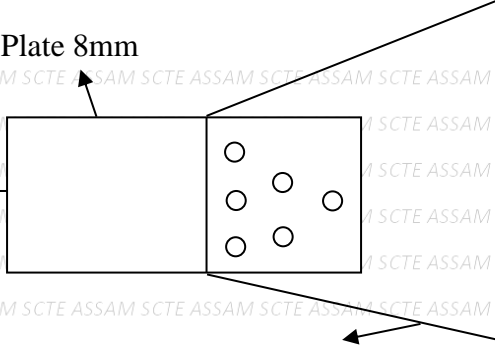


Page no.=03**End Semester Examination (ESE), 2020****Semester: 6th****Subject: DESIGN OF STEEL STRUCTURES****Subject Code: CV-601****New Syllabus****Total Marks: 56 Marks****Time: 2.30 Hrs****All questions are compulsory**

Q. No	Description	Mark
1	As per IS code 800: 2007, the minimum pitch of rivets in a row is recommended as the diameter of the rivet times- a) 2 b) 3 c) 2.5 d) 5	1
2	What is the maximum size of fillet weld for a plate of square edge?	1
3	Determine the minimum net area of the plate (200 X 8) mm and 3 nos. of 16mm bolts in a chain bolting?	1
4	What is called slenderness ratio?	1
5	Calculate allowable average shear stress in an un-stiffened web for beams made of steel (grade 250N/mm ²)?	1
6	The maximum deflection ratio of a steel member should not exceed- a) 1/300 b) 1/325 c) 1/375 d) 1/500	1

7	Calculate throat thickness for 8mm size of weld ($\theta = 95^\circ$)?	1
8	The design tensile strength of a steel section due to gross section yielding T_{dg} is given by— a) $A_g f_y / \gamma_{m0}$ b) $A_f / 2.5$ c) $A_g f_y / \gamma_{m1}$ d) A_f / γ_{m2}	1
9	A section is said to be plastic when outstand of compression flange is— a) >9.4 b) <9.4 c) <10.4 d) <11.5	1
10	What is the axial tension for power driven fasteners?	1
11	A double riveted double cover butt joint is used to connect two plates of 10mm thick. Thickness of the cover plate is 5mm. find diameter of rivet and rivet value?	3
12	Explain the various types of welded joints?	3
13	Calculate the number of rivets in a single riveted lap joint having thickness of plates as 10mm and 14mm. The load applied in the plates are 200kn. ($\tau_{vf} = 100N/mm^2$, $\tau_{pf} = 300N/mm^2$).	3
14	Design a weld to connect a bar (60*8) mm to a 12mm thick gusset plate. Permissible stress (bar) = 150mpa and permissible stress (plate) = 108mpa. 	3
15	What are the factors affecting the strength of tension members?	3
16	What are the design steps for design of a compression member?	4
17	Write two advantages and disadvantages of bolted connections?	4
18	What are called lug angles, gusset plates and laterally supported beams?	4
19	Determine the design tensile strength of a plate (160*8)mm connected to a 12mm thick gusset using 16mm diameter bolts as shown in fig.. If the yield and ultimate stress of the steel used are	4

	<p>250mpa and 410mpa. (End distance and edge distance =40mm, pitch=50mm, gauge distance=30mm.)</p>  <p>Plate 8mm</p> <p>Gusset 12mm thick</p>	
20	<p>Calculate design compressive strength for a column made up of ISHB 350@661.20 N/m and 4m height. The column is restrained in direction end position at one end. Use steel grade fe410.</p>	5
21	<p>A simply supported beam to carry a uniformly distributed load of 30kN/m. The effective span of the beam is 6m. The beam is supported from lateral direction. Determine whether the section is adequate or not? (use design steps).</p>	5
22	<p>For the same above question (21), check the beam for design capacity of the section and check deflection.</p>	5