

B.Arch. (Sem.-V) Examination

AR 503

Structures-V

May-2017

Time : 2 Hours]

[Max. Marks : 50

INSTRUCTIONS:

- Attempt all Questions.
- Figures to the right indicate full marks.
- Assume suitable data if required.
- Use of IS: 800-2007 and steel table is permitted.
- Use of non-programmable calculator is permitted.

- Q.1 [A] Distinguish between working stress method & limit state method. 05
OR
[A] List hot rolled sections used in practice & sketch them.
[B] State Advantages and disadvantages of bolted connection over welded connection. 05
- Q.2 [A] Two plates of 8 mm thickness are connected by single – bolted double cover butt joint using 20 mm bolts at 50 mm pitch. Calculate the efficiency of the joint. Use Fe410 plate and 4.6 grade bolts. 08
OR
[A] An ISA 150 x 75 x 10 mm are subjected to axial tensile force of 200 kN, connected by its longer leg to 10 mm thick gusset plate. Design welded joint using 6 mm size fillet welding. 08
[B] Explain types of welds with sketches. 02
- Q.3 Determine the design axial load on the column section ISMB 350 having height 3 m hinged at both ends. Take $f_y = 250$ MPa. 10
OR
- Q.3 Select suitable angle section to carry a factored tensile load of 210 kN assuming a single row of M20 bolts and $f_y = 250$ N/mm². 10
- Q.4 Define & explain **any five** of the following terms. [With Sketches] 20
[A] Gusset Plate
[B] Stiffener Plate
[C] Lacing
[D] Bracing
[E] High strength friction grip bolt
[F] Black bolt
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