Q:) The economic of a roof truss depends upon the

A : Cost of purlins and cost of roof coverings

B : Cost of roof covering and dead loads

C : Dead loads and live loads

D : Live loads and cost of purlins

Q:) Normally, the angle of roof truss with asbestos sheets should not be less than:

A : Less than 26^o

B : Less than 30^o

C : Less than 40^o

D : None of these

Q:) A part from gravity loads which of the following loads are also considered in the design of a gantry located within an industrial building?

1. wind load
2. Longitudinal load
3. Lateral load

Select the answer using the codes given below:

A : 1 and 2

B : 1 and 3

C : 2 and 3

D : 1,2 and 3

Q:) The shape factor of standard rolled beam section varies from

A : 1.10 to 1.20

B : 1.20 to 1.30

C : 1.30 to 1.40

D : 1.40 to 1.50

Q:) In case of a simply supported I-section beam of span L and loaded with a central load W, the length of elasto-plastic zone of the plastic hinge is

A : $\frac{L}{2}$

B : $\frac{L}{3}$

C : $\frac{L}{4}$

D : $\frac{L}{5}$

Q:) If Q is load factor S is shape factor and F factor of safety in elastic design, the following:

A : Q=S+F

B : Q=S-F

C : Q=F-S

D : Q=S × F

Q:) In a plate girder, the vertical stiffeners are provided when the ratio of clear depth to the thickness of web exceeds

A : 50

B : 85

C : 65

D : 75

Q:) The purpose of stiffeners in a plate girder is to:

A : Prevent buckling of web plate

B : Reduce the shear stress

C : Take care of bearing stress

D : Increases the moment carrying capacity of the girder

Q:) A welded steel plate girder consisting of two flange plates of 350 mm × 16 mm and a web plate of 1000 mm × 6 mm requires-

A : No stiffener

B : Vertical stiffeners

C : Intermediate vertical stiffeners

D : Vertical and horizontal stiffeners

Q:) The problem of lateral buckling can arise only in those steel beams which have____.

A : Moment of inertia about the bending axis larger than the other

B : Moment of inertia about the bending axis smaller than the other

C : Fully supported compression flange

D : None of these

Q:) Web Crippling generally occurs at the point where

A : Bending moment is maximum

B : Shearing force is minimum

C : Concentrated load act

D : Deflection is maximum

Q:) In rolled steel beams, shear force is mostly resisted by

A : Web only

B : Flange only

C : Web and flanges together

D : None of these

Q:) Effective length of battened columns is increased by

A : 5%

B : 10%

C : 15%

D : 20%

Q:) As per the code, the slenderness ratio of the lacing bars for compression member should not exceed:

A : 80

B : 100

C : 145

D : 225

Q:) An electric pole is 5m high and it is fixed to ground. It carries a wire at the top, and free to move sideways over there. The effective length of the pole is

A : 3.25 m

B : 4.0 m

C : 5.0 m

D : 10.0 m

Q:) As per the code, the permissible stress in axial tension in N/mm^2 on the net effective area of the section shall not exceed (where, f_y is the minimum yield stress of steel in N/mm^2)

A : 0.5 f_y

B : 0.6 f_y

C : 0.75 f_y

D : 0.8 f_y

Q:) The maximum slenderness ratio of a tension member, as per the code, shall not exceed

A : 300

B : 180

C : 400

D : 450

Q:) The maximum center to center distance between rivets in a tension member of thickness 10 mm is

A : 200 mm

B : 160 mm

C : 120 mm

D : 100 mm

Q:) The gross diameter of a 14 mm nominal diameter rivet is

A : 15.5 mm

B : 16 mm

C : 16.5 mm

D : None of the above

Q:) The effective length of a fillet weld of length l is

A : l-4s

B : (2/3) l

C : l-2s

D : (4/5) l

Q:) The strength of field rivets as compared to shop rivets is

A : Same

B : 90%

C : 89%

D : 75%

Q:) If p and d are pitch and gross diameter of rivets, the efficiency η of the riveted joint, is given by

A : $\eta = p/(p-d)$

B : $\eta = (p-d)/p$

C : $\eta = p/(p+d)$

D : $\eta = (p-d)/p$

Q:) The heaviest I-section for the same depth is:

A : ISLB

B : ISMB

C : ISHB

D : ISWB

Q:) Minimum thickness of main steel members, not exposed to weather is:

A : 4.5 mm

B : 6.0 mm

C : 8.0 mm

D : 8.5 mm

Q:) According to IS : 800-1984, the permissible stress in axial tension in steel is:(f_y=minimum yield stress of steel)

A : 0.56 f_y

B : 0.66 f_y

C : 0.70 f_y

D : 0.6 f_y