ASSIGNMENT-2 INDUSTRIAL BUILDING

Q: 1 Explain various components of an industrial building with Suitable sketches.

Q: 2 State the factors to be considered for the planning and site selection of an Industrial

Building.

Q: 3 Explain the analysis of roof column in Industrial building.

Q: 4 For analysis of Industrial building bends for column hinged at base, What are the

assumption normally made.

Q: 5 Explain the role of bracing in industrial buildings.

Q: 6 What are risk-coefficient , terrain factor and topography factor?

Q: 7 Determine Dead load, Live load and wind load per panel point for the roof Truss of a

workshop shed constructed at Ahmedabad for the following Requirements:

   I.   Span of truss = 15 meters

  II.   Spacing of truss = 4 m c/c

 III.   Rise of truss = 3 meters

 IV.   Heights of truss above G.L. = 20 meters

  V.   A.C.C sheets @150 N/m^2 are used as roof covering

VI.   Assume weight of Purlin and other fixtures = 120 N/m^2 per plan area

VII.   Total nos. of panels = 8

VIII.   Opening of wall area = 10%

IX.   Probable life of roof truss = 25 years, Terrain category = 3 and class = A structures

X.   Topography = Plain horizontal ground and upwind slope less than 3˚

Q: 8 Design an angle section for a purlin having 3.0 m span. It carries design load (Working) of

2.5 kN/m and supported on four supports. Angle of roof truss is 26˚.

Q: 9 Design a steel roof truss for the following data:

Location: Ahmedabad

Span of roof truss: 14m

Spacing of roof truss: 5m

Pitch: 1/4

(a) Fix configuration of truss (b) Compute DL, LL, and WL at nodal point (c) Design purlin

(d) Design principle rafter (e) Design main tie

Assume suitable data if necessary.

Q: 10 Calculate nodal loads (per panel point load) for the howe roof truss due to Dead load, live

load and wind load for an industrial building of size 18 m x 40 m situated in Surat with

terrain category-3 and class B. Spacing between two trusses = 4 m c/c. Rise of truss = 4

m. Consider 10% wall openings. The truss has total 10 segments. Corrugated GI Sheets

are used as roofing material. Height of eaves level is 12 m. Assume suitable data if

necessary.