

CIVIL ENGINEERING DRAWING

Time Allowed: 4 Hours

Full Marks: 70

Answer to Question No.1 is compulsory and to be answered first.
This answer is to be made in separate loose script(s) provided for the purpose.
Maximum time allowed is 45 minutes, after which the loose answer scripts will be collected and fresh answer scripts for answering the remaining part of the question will be provided.
On early submission of answer scripts of Question No.1, a student will get the remaining script earlier.

Answer any four questions.
All measurements are in millimetres. Assume other reasonable data.

1. Following figure - 1 shows the line plan of a single storied building. 17½
- a) Plinth height 600 mm from GL.
 - b) Thickness of main wall – 200 mm
 - c) Thickness of partition wall – 100 mm.
 - d) Continuous sun shade is to be provided all round the building and verandah – width of sun shade – 450 mm.
 - e) Door and window frame size – 100 x 75 mm
 - f) Door and window size as indicated in the plan
 - g) Draw the Plan .Use scale – 1: 50

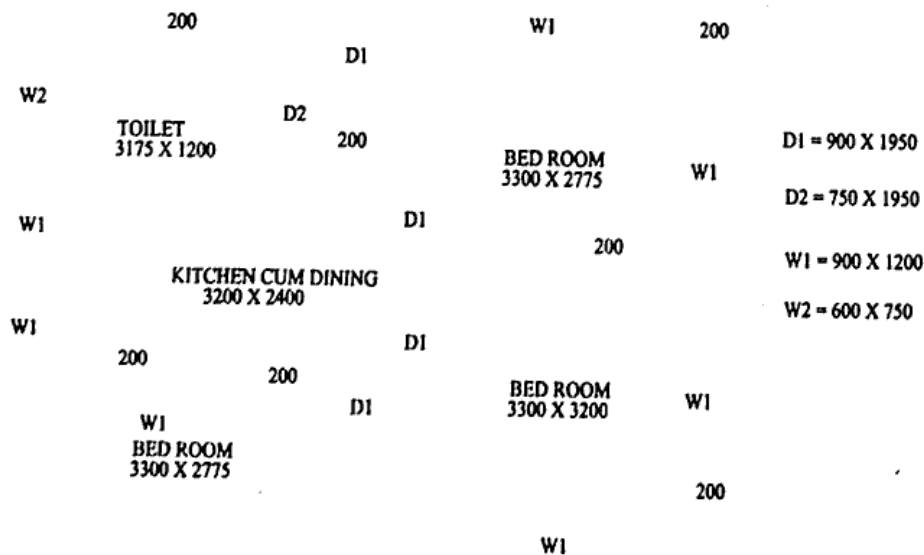


Figure – 1

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2. Draw the South and East elevation of the building shown in Figure - 1. Particulars are given below. 17½
- a) Plinth height 600 mm from GL.
 - b) Ceiling height - 3000 mm
 - c) Roof slab - 100 mm.
 - d) Window sill level - 750 mm
 - e) Chajja over window - 450 mm wide.
 - f) Height of parapet wall - 1000 mm
 - g) Verandah and main roof at the same level
- Use scale - 1: 50
3. Draw the front and side elevation of a column splicing arrangement from the following data: 17½
- Column ISHB 300 @ 48.1 kg/m. having flange width = 200 mm, thickness of flange = 10 mm, thickness of web = 7.4 mm. Cover plates are 200 x 15 mm and 520 mm long. Rivets 18 mm dia @ 60 mm c/c
4. Draw to a suitable scale the front elevation and side view of a beam to column framed connection from the following data: 17½
- Column ISHB 300 @ 58.8 kg/m (300 x 250); Beam ISLB 250 @ 27.9 kg/m (250 x 125)
Cleat ISA 90 x 90 x 6 ; Rivets 16 mm dia
5. Draw half top plan and half sectional plan (combined) and half front view and half sectional front view combined of single span slab type culvert from the following data: 17½
- Clear span - 1500
 - Bed level at GL
 - Thickness of deck slab - 220
 - Thickness of wearing coat - 80
 - Road width - 4000
 - Height of deck slab from GL - 1200
 - Depth of foundation - 750 below GL
 - Thickness of abutment - 500
 - Width of CC for abutment - 800, thickness - 300
 - Parapet - height 620 with road curb 80 x 120
 - Other data to be assumed. Use scale 1 : 50
6. Draw the front elevation of the simple fink steel roof truss in Figure-2 from the following design data: 17½

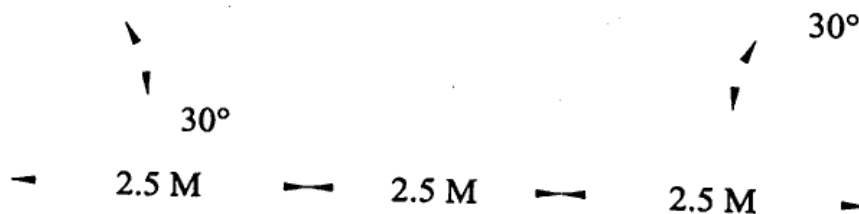


Figure - 2

a) Clear span = 7.5 m	
b) Bottom chord or main tie 2-angles placed back to back. -	ISA 60 x 60 x 8 @ 7.0 kg/m
c) Top chord or Principal rafter 2-angles placed back to back. -	ISA 60 x 60 x 8 @ 7.0 kg/m
d) Strut or central chord single angle -	ISA 60 x 60 x 8 @ 7.0 kg/m
e) Upper chord or inner tie - -	ISA 60 x 60 x 8 @ 7.0 kg/m
f) Cleats and Purlins single angle - -	ISA 90 x 60 x 10 @ 11.0 kg/m
g) Shoe angles 2-angles placed back to back, 250 long -	ISA 80 x 80 x 8 @ 9.6 kg/m
h) Bearing plate, 2 nos -	ISF 300 x 300 x 12 @ 35.3 kg/m
i) Holding down bolt with washer, nuts and anchor plate. -	i) 18 mm dia. , 180 mm long ii) 80 ISFG 80 x 80 x 10 anchor plate 6.3 kg/m
j) Rivets -	ISRO 18, 2.0 kg/m
k) Pitch of rivets -	60 mm c/c
l) C.conc. 1:2:4 pad block -	300 x 400 x 200
m) Wall -	400 mm wide
n) Eaves projection -	450 mm. from wall
o) Roof covering material -	Corrugated G.I. sheets
p) Gusset plates -	250ISF, 8 mm thick @ 15.7 kg/m

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