

TED (15) 3014
(Revision-2015/19)

A21-06038

Reg.No.....
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**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL-2021
BUILDING PLANNING AND DRAWING**

[Maximum marks: 75]

(Time: 2.15 Hours)

- [Note: 1. Question number II is compulsory.
2. Missing data if any may be suitably assumed
3. Drawing shall be neat and fully dimensioned.
4. A2 size drawing sheet is to be supplied.
5. Sketches are accompanied]

PART – A

I (Answer any *five* questions in one or two sentences. Each question carries 1 mark)

1. Draw the conventional sign of materials Glass, Timber and Plain cement concrete in section.
2. Draw a typical layout of quarter turn stair in plan
3. What is mezzanine floor?
4. Calculate F.A.R of a two storied building with coverage as 50% of plot area.
5. Differentiate between Plinth area and Carpet area.
6. List any three types of buildings which come under GROUP D occupancy as per KMBR.
7. What is the minimum distance of well from any ash pit, refuse pit, earth closet or privy as per NBC?
8. Describe the use of manhole in sanitary drainage system.
9. What is meant by soil pipe(SP)?
10. Explain the purpose of gully trap in sanitary fittings. (5 x 1 = 5)

PART – B

II.(a) Develop line plan for a residential building to suit for a plot of 12m x19m size according to N.B.C and K.M.B.R. requirements. Total built up area of the building should not exceed 90m² and should satisfy the following requirements.

Sit out

Bed rooms – 2 Numbers

Drawing and dining room

Kitchen with Store room

Common Toilet

The shorter side of the plot abuts a road of 7m wide on its northern side

(25)

(b) Draw to a suitable scale the following views with complete dimensions and details for the given figure 1.

(i) Plan (15)

(ii) Sectional view on AA (15)

Specifications

- Foundation: The P.C.C layer is 20cm thick and 70cm wide laid at 80cm below ground level. The footing being 60cmx60cm random rubble masonry in cement mortar 1:6.
- Basement: The basement will be in random rubble masonry in cement mortar 1:6, 45cm wide and 60cm above ground level
- Superstructure: All walls will be in brick work in cement mortar 1:6 using first class brick, 20cm thick. The height of main walls will be 300cm above floor level. R.C.C Parapet walls 10cm thick and 70cm high will be provided all around. Assume suitable size for doors and windows.
- Roofing: The roofing will be of R.C.C 1:2:4 mix 10cm thick flat slab over all rooms.
- Flooring: Provide 8cm thick C.C flooring.
- Lintel: All internal openings will be provided with R.C.C lintel 1:2:4mix, 15cm thick and all external openings will be provided with R.C.C. lintel cum sunshade.

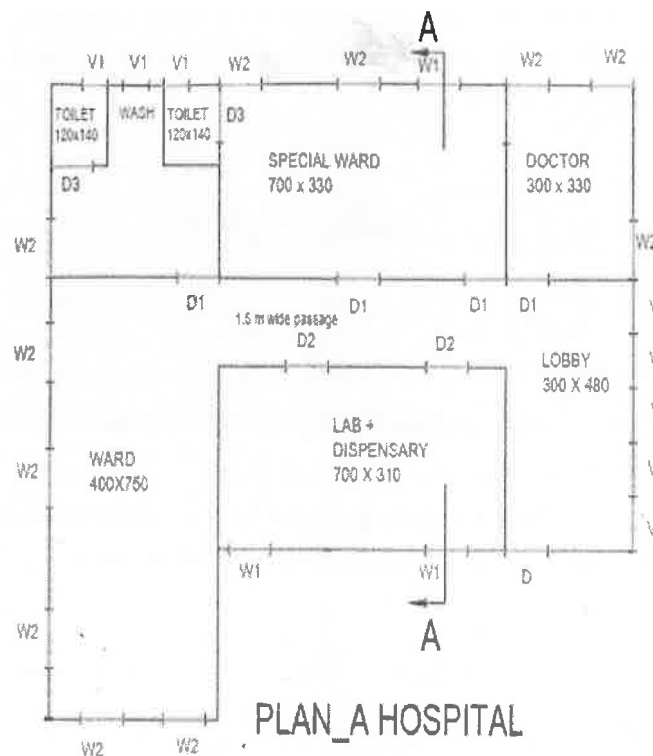


FIGURE 1

Answer any one question from III to VI

III. Draw to a suitable scale the elevation and sectional plan of a panelled door with given details.

Size of door : 100cm x 200cm, 2 leaves

Door frame : 9cm x 7cm

Style, Mid rail & top rail: 9.5cm x 3.5cm

Bottom rail and Lock rail: 15cm x 3.5cm

Panel 2cm thick

(15)

OR

IV. Prepare the detailed drawing of a R.C.C footing given the following. Size of column 30cm x 30cm, Size of footing 160cm x 160cm. The P.C.C 1:4:8 with coarse aggregate size 40mm is 10cm thick. The depth of footing at the column face is 40cm and at the edge is 20cm. The reinforcement in the footing consists of 14nos. of 10mm diameter rods in two directions. Reinforcement in the column consists of 4 numbers of 16mm diameter rods as main longitudinal reinforcement and 8mm lateral ties at 15cm c/c. Provide cover to the reinforcement as 5cm.

(15)

V. Draw the half sectional elevation along the centre line of the road of a slab culvert across a stream with the following details.

Road way - 4m

Clear span - 1.5m

Bed level of the stream + 10.00m

Foundation level + 9.4m

Road level - +11.30m

Foundation PCC M10 grade 0.3m thickness, the thickness of abutment 0.40m throughout the height, thickness of slab 0.20m, the thickness of wearing coat 0.10m. The returns are square projecting 1.2m from the earth face of the abutment. The height of parapet above slab 0.80m, coping 0.10m thick with 80mm projections. Flooring consists of stone revetment 0.30mm thick. Provide adequate kerb

(15)

OR

VI. Draw the electrical service plan of the Figure II and denote the symbols for the fittings. (15)

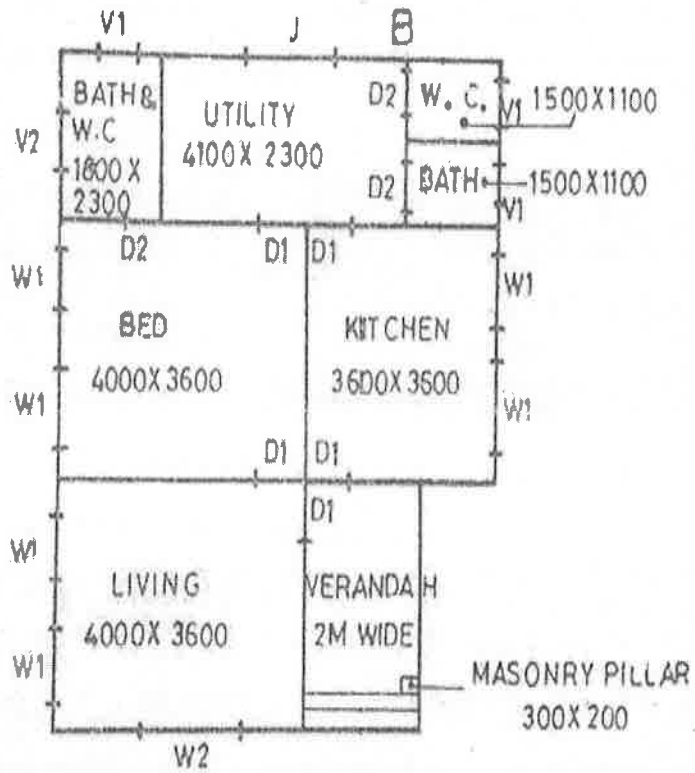


FIGURE II
