TED (15) – 3014

(REVISION — 2015)

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

BUILDING PLANNING AND DRAWING

[*Time* : 3 hours

(Maximum marks : 100)

[*Note* :—1. Question No. II is compulsory.
2. Missing data may be suitably assumed.
3. Drawing shall be neat and fully dimensioned.
4. A2 size drawing sheet to be supplied.
5. Sketches on 4th Page.]

PART — A

(Maximum marks : 15)

Marks

I   Answer *all* questions in one or two sentences. Each question carries 1½ marks.

1. Define FAR.

2. Give the names of any three sanitary fittings.

3. What are the different types of culvert ?

4. Enumerate the circumstances for providing a combined footing.

5. Give the conventional signs for Indian type water closet, kitchen sink and bath tub.

6. Define plinth area.

7. What is a Mezzanine floor ?

8. Differentiate between clear span and effective span.

9. What do you mean by the frontage of a building ?

10. What is the minimum area of a kitchen as per NBC ?   (10 × 1½ = 15)

PART — B

(Maximum marks : 85)

II   (a)   Prepare the line plan for a residential building to suit for a plot of 26m × 24m size, according to NBC and KMBR requirements. A road of 5m width abuts the 26m side. The total built up area of the building should not to exceed 200m². It should satisfy the following requirements.

Sit out

Car porch

2 nos. bed rooms with attached bath

Dining and drawing

Kitchen and work area   25

[415]

(b) Prepare a detailed plan and section along XX in 1:100 scale for the line sketch of the residential building given in figure (i).

PCC for foundation, 1:4:8 - 80cm × 20cm

RR masonry for foundation in CM 1:8 - 60cm × 60cm

RR masonry for basement in CM 1:8 - 45cm × 45cm

Superstructure, 20cm thick brick wall in CM 1:6, 3m high. (Provide lintel height for sit out & car porch)

Roofing, RCC slab, M20 grade, 10cm thick with 10cm projection.

Parapet wall, 10cm thick brick wall in CM 1:6, 60cm height, provided throughout. (Provide 20cm height over sit out and car porch)

Sun shade, RCC, 7.5cm thick, 40cm wide, provided through out.
Lintel, RCC, 15cm thick, provided through out.

Steps, rise-15cm, tread 27cm.

Hand rails for sit out in cast iron, 60cm height.

Doors : D-110cm×200cm, D1-100cm × 200cm, D2-95cm × 200cm

Windows: W-200cm × 150cm, W1-150cm × 150cm, W2-100cm × 150cm

Ventilators: V-75cm × 45cm

Provide pillars and flooring suitably.

(Assume any other data necessary)   (15+15)

III   Draw the foundation details for steps and wall Given,

Brick wall, 20cm thick in CM 1:4

Basement in RR masonry, CM 1:4 - 40cm × 60cm

Foundation in RR masonry, CM 1:4 - 50cm × 60cm

PCC, 1:4:8 - 80cm × 20cm

Steps in brick masonry: rise-15cm, tread-30cm, PCC-10cm thick

Floor concrete, 10cm thick, Floor finish 2cm thick   15

OR

IV   Draw the plan and sectional elevation to a suitable scale of a dog legged RCC stair in a 5m × 2m room having the following details :

First flight – 12nos. steps

Second flight – 4nos. steps

Rise –17cm

Tread – 25cm

Thickness of waist slab – 21cm

Thickness of landing slab –10cm

Width of landing slab – 100cm

Reinforcement details : – main bar 12mmφ, 10mmφ distributors @125mmc/c.

Assume all other data necessary.   15

V   Draw the longitudinal section of a slab culvert in a suitable scale having the following details :

RL at top of culvert slab 99.000m

RL at base of foundation 92.350m

Clear span - 4m

Road width - 7m

Slab thickness - 30cm

Abutment foundation - 180cm × 40cm

Abutment width - 60cm throughout the height

The returns are square, projecting 1.2m from earth face of abutment.

Provide parapet and kerb suitably.   15

O<small>R</small>

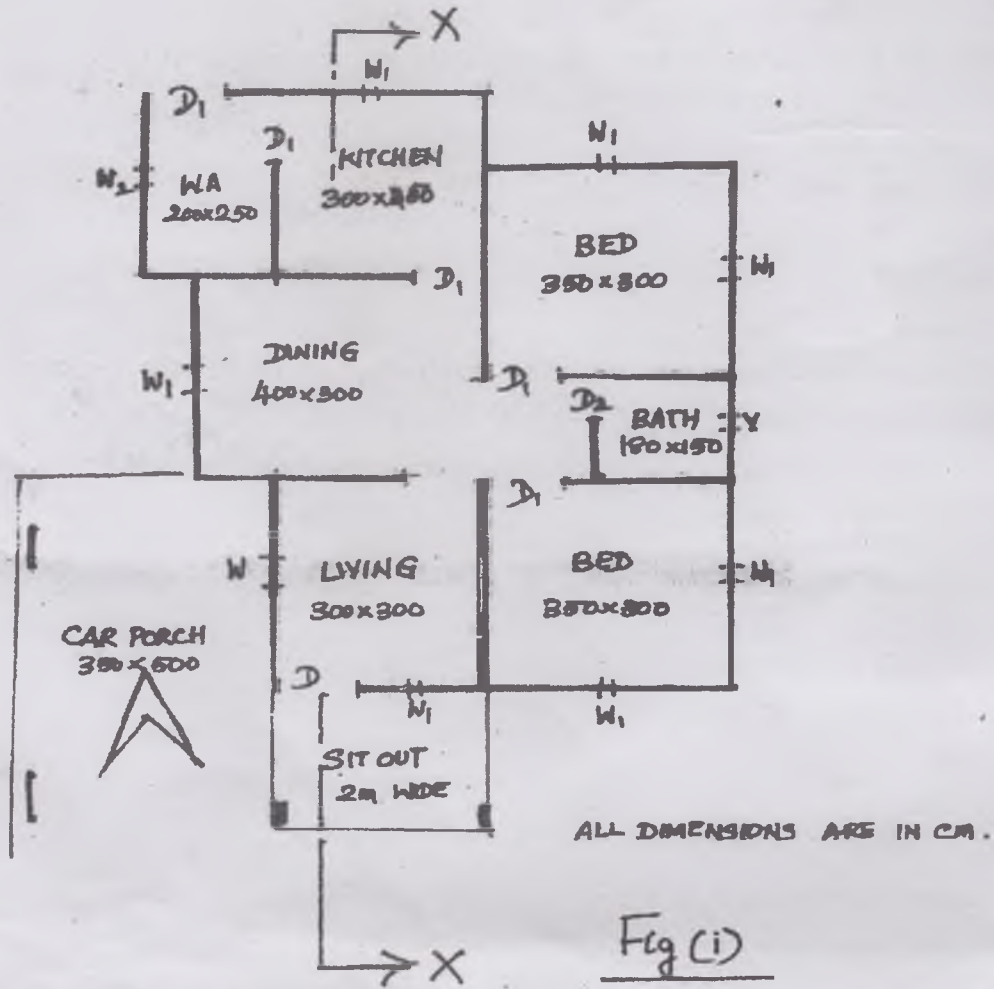VI   Prepare a plumbing layout of fig (ii) showing the water supply and sanitary fixtures.   15

X

N₁

D₁

D₁

N₂

WA
200×250

KITCHEN
300×350

N₁

BED
350×300

N₁

DINING
400×300

N₁

D₁

D₁

D₂

BATH - Y
180×150

W₁

LIVING
300×300

D₁

BED
350×300

N₁

CAR PORCH
350×600

D

N₁

W₁

SIT OUT
2m WIDE

ALL DIMENSIONS ARE IN CM.

X

Fig (i)

KITCHEN
3.8×3.3
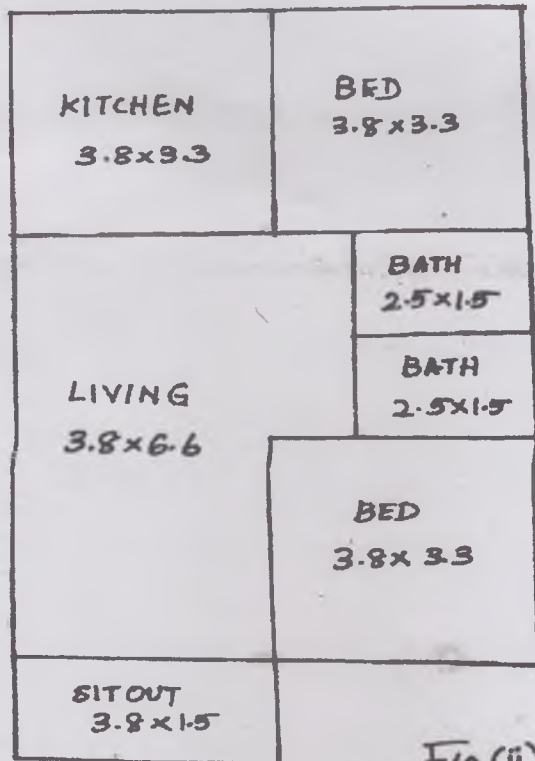
BED
3.8×3.3

BATH
2.5×1.5

BATH
2.5×1.5

LIVING
3.8×6.6

BED
3.8×3.3

SIT OUT
3.8×1.5

Fig (ii)   ALL DIMENSIONS ARE IN m.