

**Odd Semester Examination, 2019-20**  
**B. Tech: Civil (3<sup>rd</sup> Semester)**  
**Building Planning & Architecture**

Time: 3:00 hrs.

Max. Marks: 100

Total no. of printed pages: 2

Note : (i) Attempt ALL questions.  
(ii) Assume any missing data suitably.

**Q1. Attempt any four of the following:**

4X5=20

- What do you understand by pollution control aspects? Write two pollution control approach?
- What do you mean by 'Building bye-laws'. Write the principles underlying it and classification of building on building bye -laws?
- Write short note on :
  - Thermal insulation
  - Building acoustics.
  - FAR.
  - Floor space index.
  - Low and high rise building
- What is orientation of building? Explain by drawing figures?
- Define the term Land use zoning. Principles of zoning and explain the different aspects of zoning?
- Draw a double leaf paneled door 1200mm x 2100mm showing sectional plan and front elevation.

**Q2. Attempt any four of the following**

4x5=20

- What is Foundation? Draw and show the various components of raft foundation and column footing.
- Write short note on :
  - Winter air conditioning
  - Summer air conditioning
- One pipe system and Two pipe system of plumbing.
- Write short note on:
  - Building safety and security system.
  - Fire fighting system in building.
- Draw plan and elevation of double leaf fully glazed door without sash bar.
- Write short note on: a) Lintels b) Arches and Also draw detailed diagram of their different types each.
- What is National building code? Why is it necessary?

**Q3. Attempt any two of the following**

2x10=20

- What do you understand by perspective drawing . Explain one point and two point perspective ii) Draw a one point perspective of a line AB parallel to central line and 5cm to the right of it . It near end is 2cm from picture plane. The station point is 7cm from Picture plane and 2cm left from central line .the eye level is 2cm from ground level ?
- Draw a detailed floor plan to a scale of 1:50 with the following data:
  - Living room 1no. approx.area 50m<sup>2</sup>.
  - Kitchen-cum-dining 1no. approx.area 50m<sup>2</sup>.
  - Bed room 2 no.approx. area 12m<sup>2</sup> each.

P.T.O



Floor to floor height 3.3m.

Load bearing structure

Foundation and plinth in UCR masonry.

Verandah ,passage , staircase, W.C and Bath/attached toilet etc of suitable sizes should be provided . Indicate the north.

- e) Define architecture ? Write the elements of architectural in details? Also explain principle of architectural composition ?

**Q4. Attempt any two of the following**

**2X10=20**

- a) A rectangular block (20 x 20 x50) mm is lying on the ground plane on one of its largest faces. A vertical edge is in the picture plane and the longer face containing the edge makes an angle of 30 degree with the PP. The station point is 30mm in front of PP. the eye level is at 30 mm from ground level. Draw 2 point perspective of the block.

- b) Write short note on :

- i) Energy efficient building
- ii) Master plan & Structure plan
- iii) Land acquisition
- iv) Plan implementation & Town planning
- v) Ventilation and lightening in building architecture.

- c) Design a single story hostel building and draw only line plan with the following data:

Number of students 50

Twenty rooms are two seated with 7.5 square metre area per student and ten single seated with 9.5 sq meter area.

Recreation room approx. area 35m<sup>2</sup>.

Gymnasium approx. area 15m<sup>2</sup>.

Office space approx. area 12m<sup>2</sup>.

Store room area 10m<sup>2</sup>.

Verandah , staircase , attached bathroom of suitable size should be provided

Show North direction and mention scale.

**Q5. Attempt any two of the following.**

**2X10=20**

- a) Write short note on :

- i) Climatic condition for architectural development
- ii) Comfort factors.

- b) Define septic tank and its type. Write the steps to design a septic tank?.

- c) Draw the detail floor plan to a scale of 1:50 or of a residential building for a given line plan below (Fig 1). Use following data: RCC framed structure, wall thickness, 150mm for all, single storey building, and Plinth height 450mm. All dimensions in the sketch are in m. Indicate suitable location & sizes of doors, windows and staircase and write the schedule of opening.

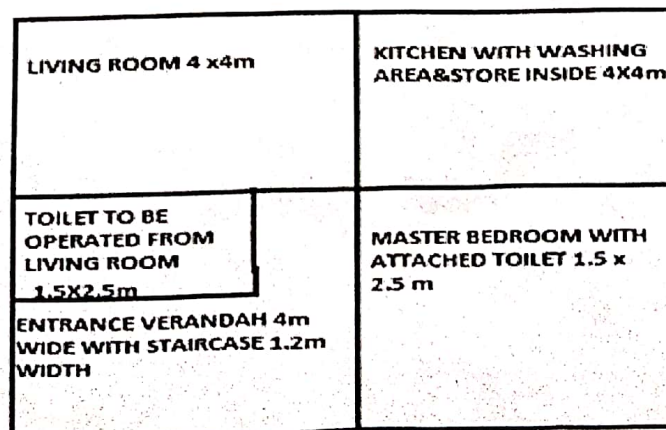


Fig. 1. Basic layout of a residential building.