



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

DIRECTORATE OF TVET

SECOND YEAR FIRST TERM EXAMINATION FOR

DIPLOMA IN BUILDING TECHNOLOGY

BUILDING DRAWING AND CAD 1

DATE: 28/7/2022

TIME: 2:30 – 5:30 PM

INSTRUCTIONS

- *This paper consists of **Five** questions.*
- *Answer **All** questions*
- *Maximum marks for each part of the question are as shown.*

QUESTION ONE

- a) Differentiate between storage and industrial types of buildings giving one example in each (5 marks)
- b) Figure 1 shows a floor plan of a house. Draw a vertical section x-x to a scale of 1:20 upto and including the wall plate using the information given (15 marks)

DATA

Floor slab	150mm
Foundation strip footing	600x200mm
Wall height	2100mm
Foundation blinding	50mm
Foundation wall depth	900mm
Hard core filling	200mm
Blinding	50mm
Door	900mm wide
Super structure wall	150 mm thick
Ring beam	150x200mm

Wall plate	100x50mm
Foundation wall thickness	200mm
Floor finish	20mm

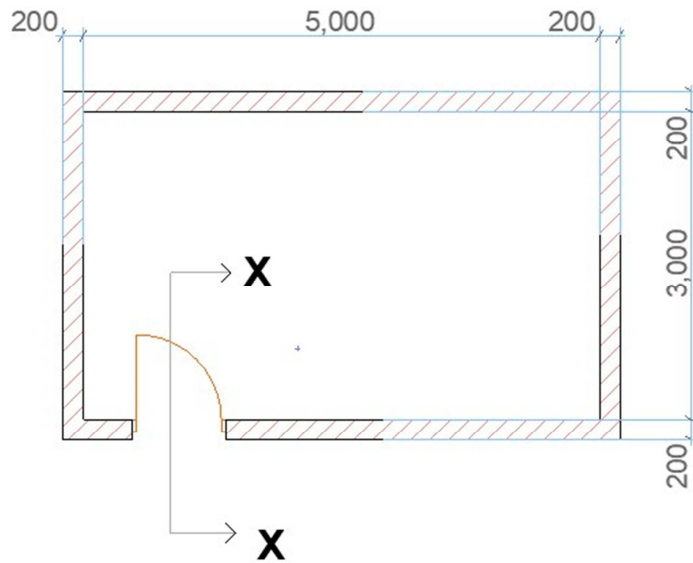


Figure 1

QUESTION TWO

- Describe the architectural design process (10 marks)
- Sketch a sample of a site plan indicating all the necessary components (5 marks)
- Explain five architectural elements (5 marks)

QUESTION THREE

- Define the following terms (3 marks)
 - Building design
 - Architectural design
 - designer
- State two roles of each of the following parties in design (8 marks)
 - Designer
 - Architect
 - Contractor
 - planner

- c) Explain the relevance of working relationships between parties in the design process (5 marks)
- d) i) Define the term floor plan (2 marks)
- ii) Describe three components of a working drawing (3 marks)

QUESTION FOUR

- a) i) define the term specifications (1 mark)
- ii) Explain two types of specifications (4 marks)
- b) Describe the procedure of approval by local authorities (5 marks)
- c) Define the following terms as used in construction (4 marks)
- i. alterations
- ii. additions
- d) describe three documents used in construction (6 marks)

QUESTION FIVE

- a) Figure 2 shows the outline of a building. Draw the elevation from direction of the arrow to scale of 1:50 (15 marks)

NB: External dimensions are as shown (all dimensions are in mm)

Windows	1500x1500
Doors -D1	1500x2400
-D2	900x 2400
Ring beam	200x200
Type of roof	pitched roof
Roof pitch angle	30 Deg
Wall thickness	200mm
Eave projection	500mm
Roof height	3000mm
Slab thickness	150mm
Open door	1500x2400 with an arch

Note ; make assumptions where possible

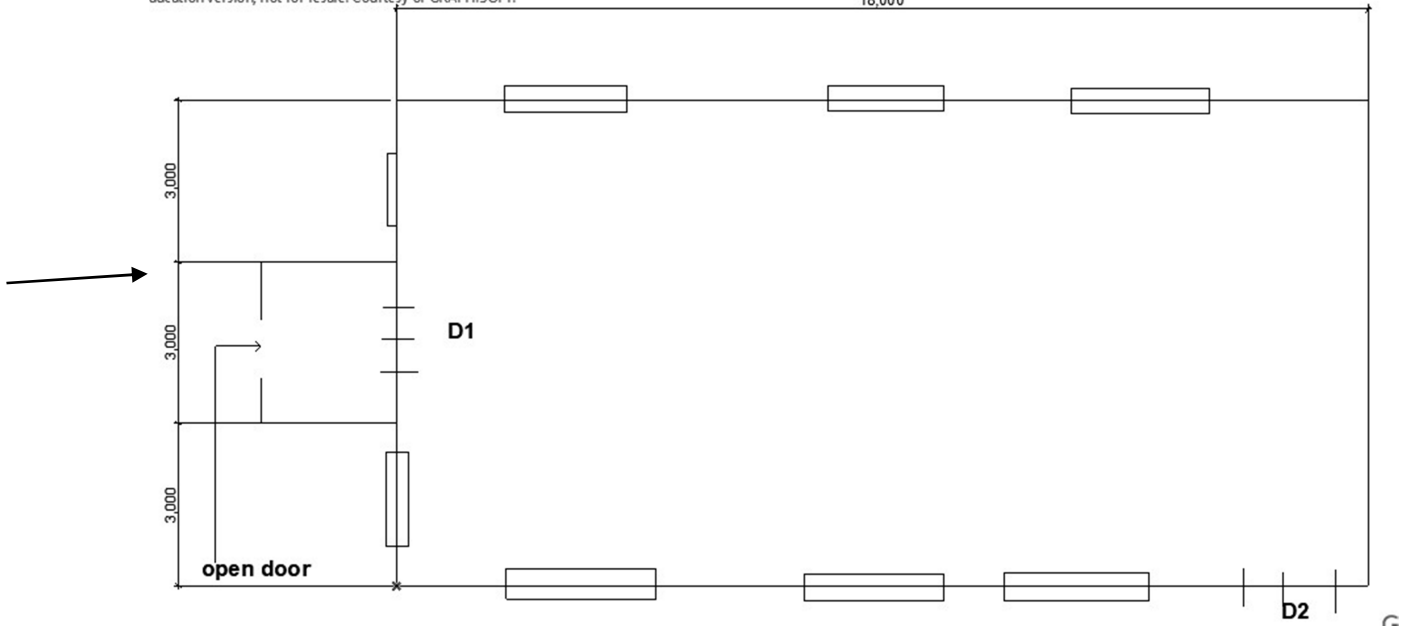


Figure 2

b) state five planning regulations

(5 marks)