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UNIVERSITY EXAMINATIONS 2024/2025

THIRD YEAR FIRST SEMESTER EXAMINATION FOR DEGREE OF BACHELOR OF TECHNOLOGY IN ELECTRICAL ENGINEERING

EET 3302: COMPUTER AIDED DESIGN

DATE: JANUARY 2025

TIME: 3 HOURS

INSTRUCTIONS:

- a) Answer Question ONE and any other TWO questions.
- b) The student should have a computer installed with AutoCAD 2013 or newer version.
- c) All dimensions are in millimetres (mm) unless otherwise specified
- d) Create a folder on the desktop of your computer in your Name and Registration Number.
- e) Save each answer in the following format (Q1-REG-00XX-20XX) and indicate the same on the answer layout.

QUESTION ONE (20 MARKS)

Figure Q1(a) shows the circuit diagram of a transformer system.

- i) Draw the circuit diagram and label the parts appropriately (9 marks)
- ii) Develop a parts list of the circuit (2 marks)



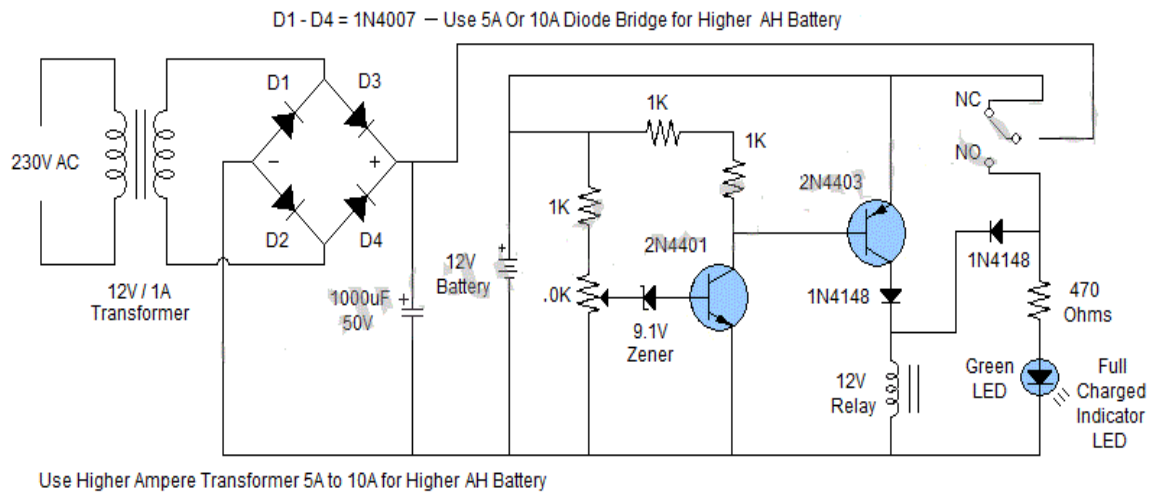


Figure Q1(a)

b) Figure Q1(b) shows the connections circuit of a 270 watt solar power system of a house.

- i) Using CAD, draw a well labelled circuit using electrics symbols of the solar system
(7marks)
- ii) Develop a parts list of the parts required
(2 marks)

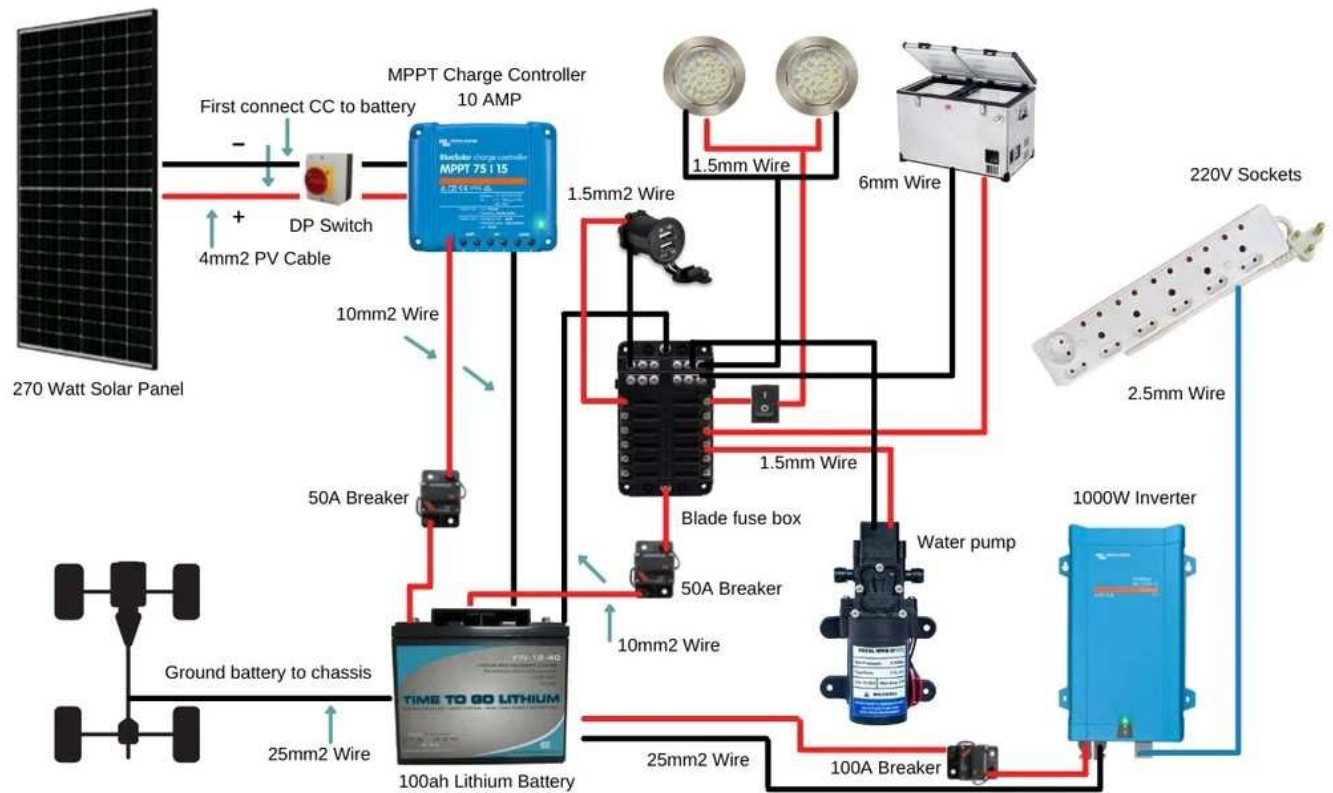


Figure Q1(b)

QUESTION TWO (15 MARKS)

- a) Using a CAD drafting program, set the layers properties manager as shown in the Table Q2(a).

Table Q2(a)

Layer Name	Colour	Line Type	Line Weight
Outline	Black/Black	Continuous	0.7mm
Centre line	Green	Centre	Default
Dimension line	Magenta	Continuous	0.13 mm

(3 marks)

- b) Use the setup above to draw the profile of a bicycle rear sprocket profile shown Figure Q2(b) (10 marks)
- c) Include six major dimensions. (2 marks)

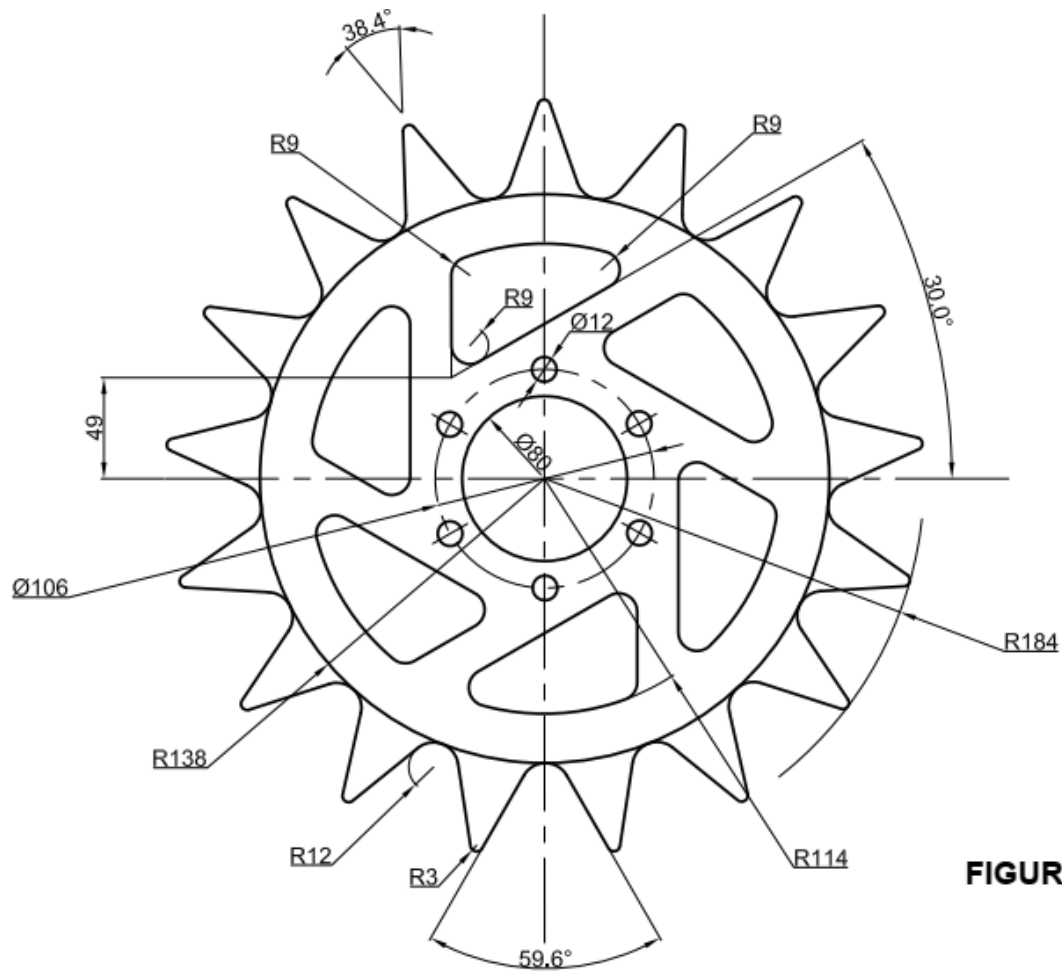


FIGURE Q2

QUESTION 3 (15 MARKS)

Figure Q3 shows the views of a shaft cover. Use viewports to extract the following views in shades of grey visual style:

- | | |
|--|-----------|
| a) 3 Dimensional solid model in South East plane | (9 marks) |
| b) Plan view | (2 marks) |
| c) Side view | (2 marks) |
| d) Convert the 3d view of Q3(a) into a wireframe model | (2 marks) |

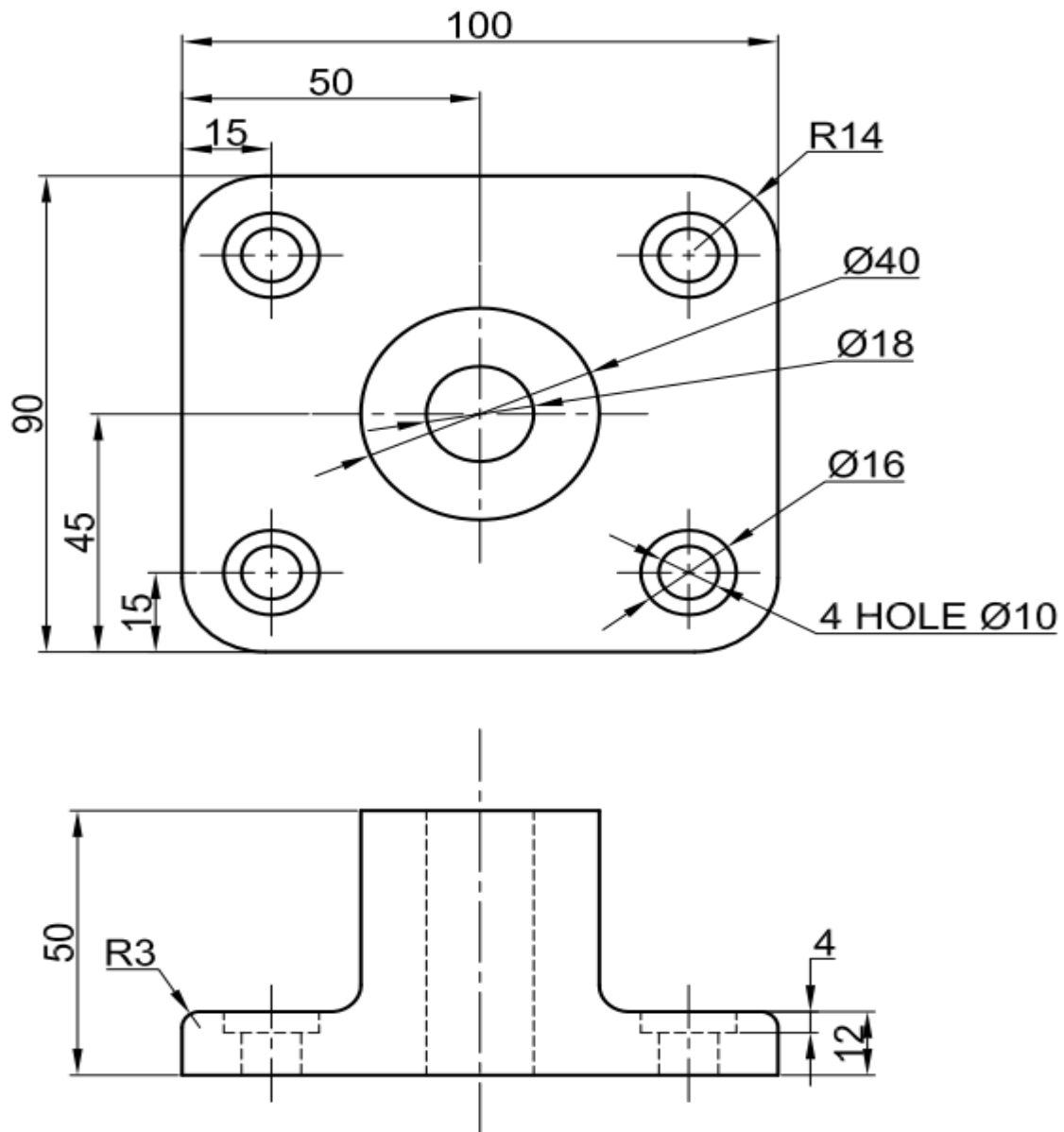


FIGURE Q3

QUESTION FOUR (15 MARKS)

Peter intends to carry out electrical wiring of his house with the design as Figure Q4.

- Using CAD software, sketch the floor plan of the house (7 marks)
- Draw the electrical wiring of appropriate fittings of the house, and develop the parts list. (8 marks)

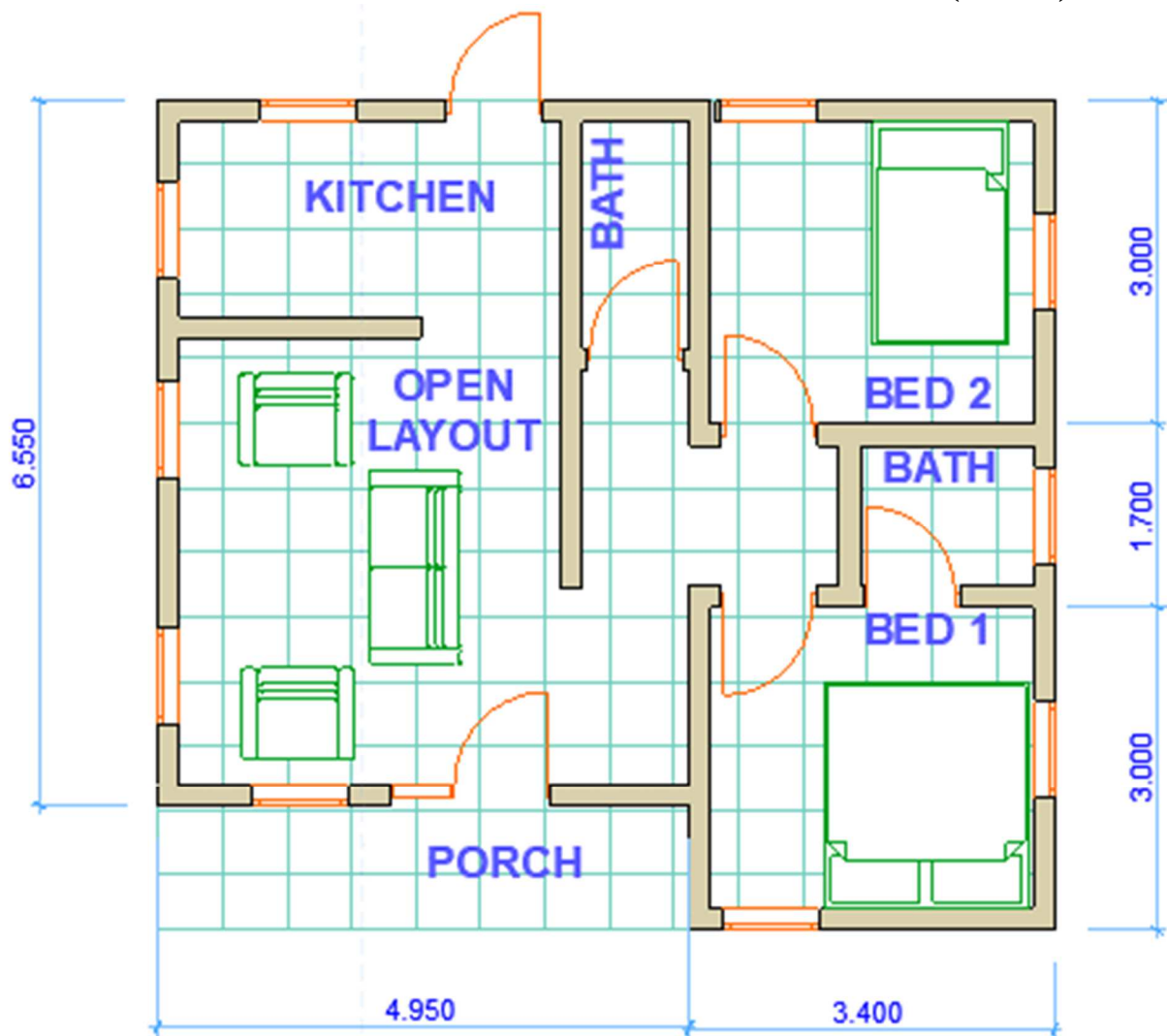


Figure Q4

QUESTION FIVE (15 MARKS)

Figure Q5 shows the third angle orthographic projection of a shaped block.

- Redraw Figure Q5 using the dimensions given (7 Marks)
- Draw an isometric projection of Figure Q5 with corner B as the lowest point. (8Marks)

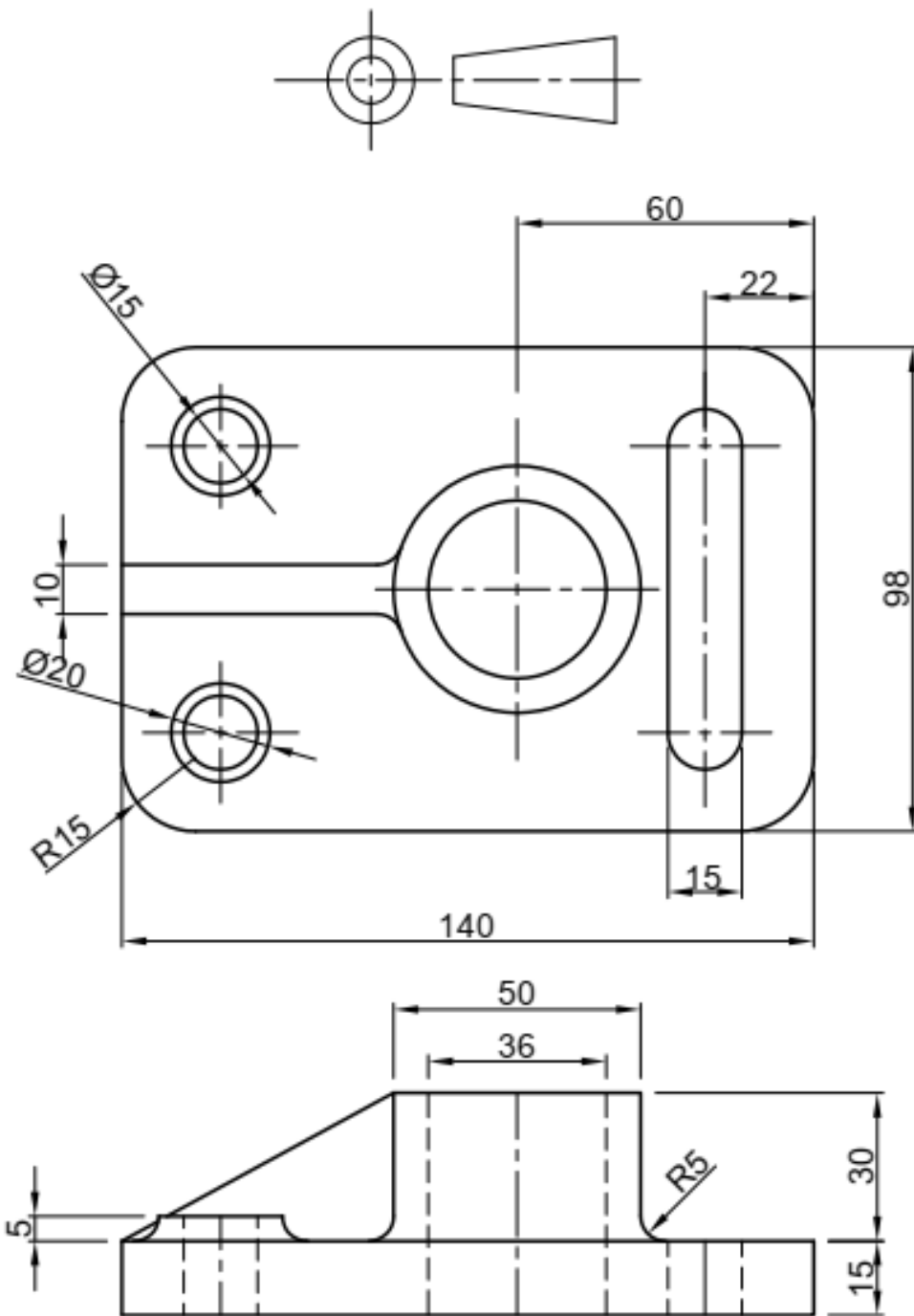


Figure Q5