

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

084

ELECTRICAL DRAUGHTING

(For Both School and Private candidates)

Time: 3 Hours

Year: 2021

Instructions

1. This paper consists of section **A** and **B** with total of **seven (7)** questions.
2. Answer **all** questions in section **A** and **four (4)** question from section **B**
3. Section **A** carries **forty (40)** marks and section **B** carries **sixty (60)** marks.
4. Cellular phones, and any unauthorized materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet (s).



SECTION A (40 marks)

Answer **all** questions in the section

1. Choose the correct response from the given alternatives A to E and to write its letter beside the item number in the answer booklet provided.

i) An object is constructed by using an orthographic projection. How many principal views can be developed from the object by using this type of drawing?

- A. Two
- B. Four
- C. Six
- D. Eight
- E. Ten

ii) According to International Standard Organization (ISO), the drawing sheets are classified according to their sizes. Which of the following is the largest paper size?

- A. A₀
- B. A₁
- C. A₂
- D. A₃
- E. A₄

iii) The view obtained on the auxiliary plane which is parallel to the inclined surface of an object is called

- A. inclined surface
- B. auxiliary plane
- C. perpendicular plane
- D. parallel plane
- E. vertical plane

iv) Suppose you are given an object drawn in third angle projection. If the auxiliary vertical plane is placed to the right of the object, what view will be obtained?

- A. Left side view
- B. Right side view
- C. Bottom side view
- D. Top side view
- E. Horizontal side view.

v) What would be your advice on the typical slope-angle for inclined lettering.

- A. $7\frac{1}{2}^{\circ}$
- B. $67\frac{1}{2}^{\circ}$
- C. 78°
- D. $70\frac{1}{2}^{\circ}$
- E. 66°

vi) Suppose you are required to present machine lettering in a class. Which of the following does not represent machine lettering?

- A. Template
- B. CAD lettering
- C. Photo typesetting
- D. Dry transfer
- E. Typewriter.

vii) You are required to construct a drawing with a scale of one half of the actual size. Which scale will you use for the drawing?

- A. 2:1

- B. 1:1
- C. 1:2
- D. 2:3
- E. 4:2

viii) : A student was assigned to draw a part of a circle bounded by two radii and an arc. What actually a student was supposed to draw?

- A. A chord
- B. An arc
- C. A Plane
- D. A concentric circle
- E. A sector.

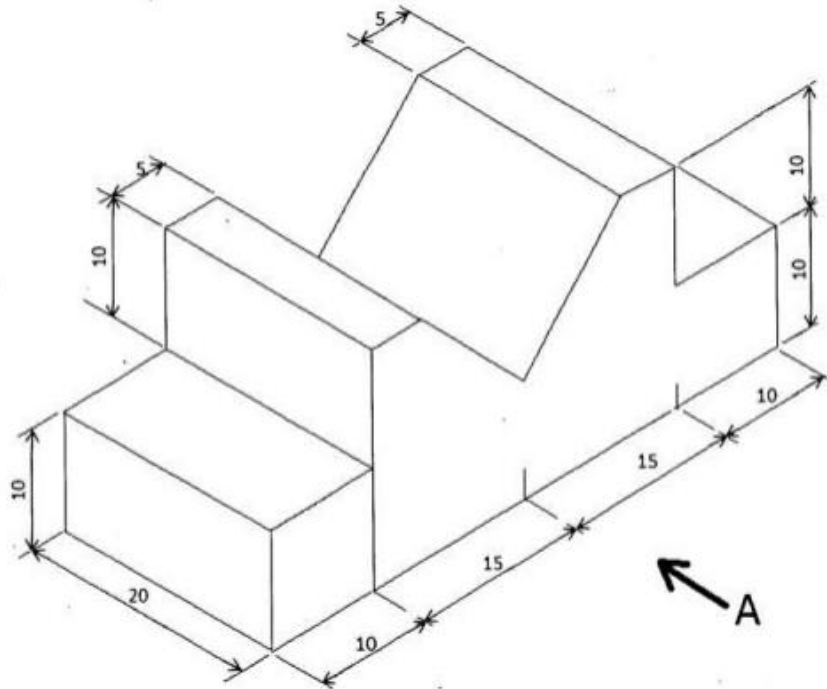
ix) : In engineering drawings, which type of line is used to draw the outline?

- A. Thin long chain line
- B. Short zigzag line
- C. Thick wavy line
- D. Thick line
- E. Thin short line.

x) Suppose you are required to draw a pictorial drawing of a block diagram.
How many views will you construct?

- A. One view
- B. Two views
- C. Three views
- D. Four views
- E. Six views.

2. Draw in first angle projection the front view, plan and end view of the block in the direction of arrow A. All construction lines must be clearly shown.

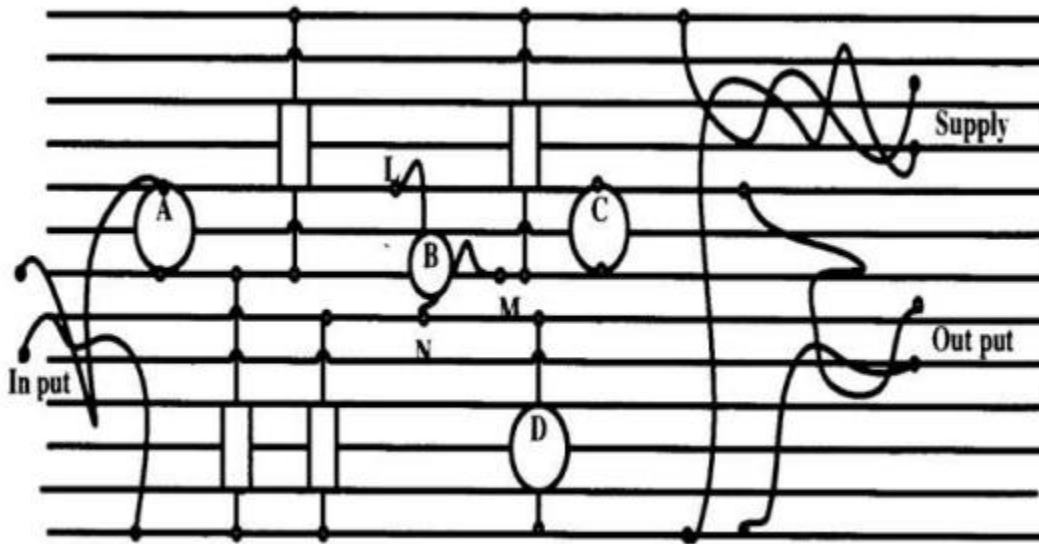


SECTION B (60 marks)

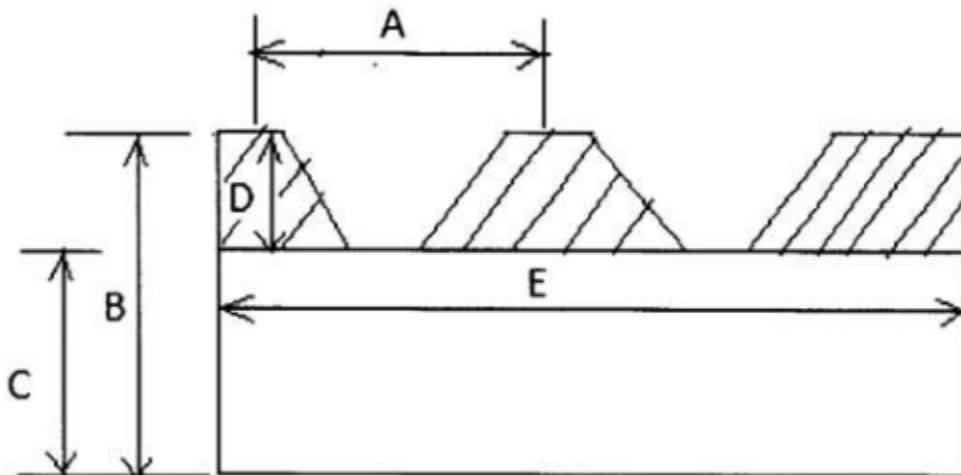
Answer **any four (4)** questions from this section

3. “A tenant’s family lives in a house which has four rooms. The house has a long corridor illuminated with two filament lamps which can be controlled from any of the four rooms”. Represent the set-up using assembled representation and schematic circuit diagrams to control the lamps.
4. (a) State the use of component assembly drawing .
- (b) Study the components side of the stripboard unit from the given figure and answer the questions that followed. The circuit arrangement was for the NPN transistor amplifier stage with input and output leads.
- (i) Identify the components A, B, C, D and terminals L, M, N of component B.

(ii) Draw a schematic diagram of the amplifier.



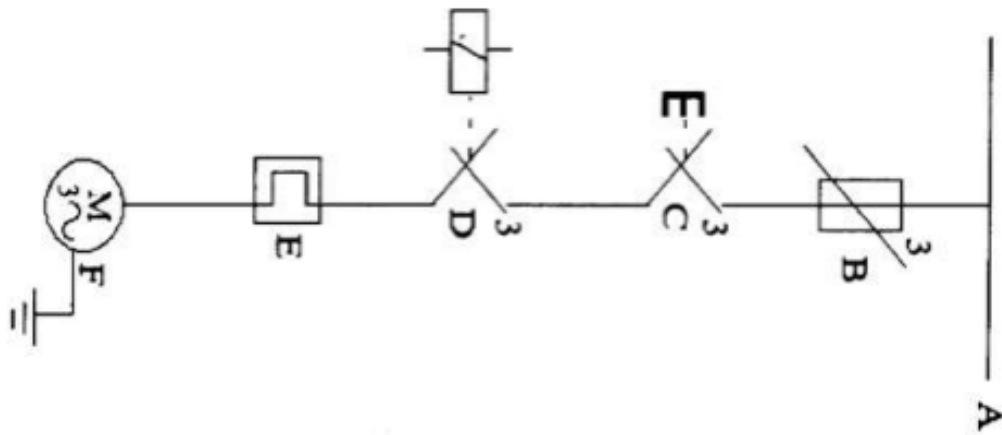
5. (a) Design a linear power supply with 220/9V transformer, 4 power diodes, electrolytic capacitor, zener diode and a load resistor.
- (b) (i) Name the type of power supply designed in (a).
- (ii) Draw a well-labelled block diagram of the power supply.
6. (a) Given a thread below and were requested to identify the parts labelled by letter A – E.



- (b) “A client asked you to make bolts and screw listed in (i) – (v) for industrial use”.
- Sketch the bolts and screws as requested by a client as follows:

- i) Round head
- ii) Cheese head
- iii) Counter sunk head
- iv) Hexagon head
- v) Socket head.

7. (a) Identify the component represented by letters A, B, C, D and F as shown in a single line diagram given below.



(b) Draw symbols that represent each of the following components and their functions.

- (i) Fuse
- (ii) Transformer
- (iii) Lamp (Indicator)
- (iv) Inductor
- (v) Variable resistor