

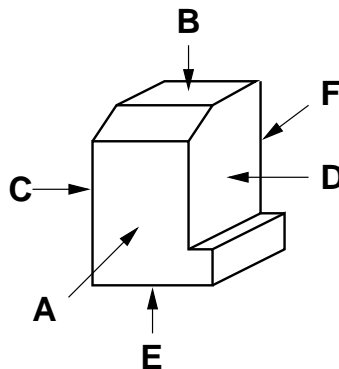
You should attempt all questions.

Each question is equally weighted.

Answer all questions in the script book provided.

Question 1. (CAD Drawing)

- Which phrase describes **perspective projection**? (Select one answer and write it in your script book.)
 - All axes are inclined to plane of projection, lines of sight are perpendicular to plane of projection.
 - Object is shown with principal face parallel to plane of projection, one axis inclined. Lines of sight are parallel to each other but oblique to plane of projection.
 - Six 2-dimensional views of an object are drawn from both sides of three perpendicular planes.
 - Lines of sight converge at eye of observer. Plane of projection is between observer and object.
- Draw a **third angle** orthogonal projection drawing of the following object.



Question 2. (Electronic Wiring and Logic Symbols)

- Draw a **single line** representation of a **thirty-two** (32) bit data bus.
- What is the AS1100 standard **letter** code for a **digital** device?
- Draw **all** the following gates using the IEEE standard symbols.
 - Inverter (NOT gate).
 - Two input NOR gate.
 - Four input NAND gate.

OVER/

Question 3. (Interconnection of Circuits)

1. When selecting a type of interconnection technology, the following six factors must be considered. Choose the preferred characteristic for each factor.
 - (a) **Resistivity** high or low?
 - (b) **Connection density** high or low?
 - (c) **Cost** high or low?
 - (d) **Reliability** high or low?
 - (e) **Stray impedances (in high speed circuits)** large or small?
 - (f) **Prototyping turnaround** quick or slow?
2. Sketch a **thru-hole** connection.
3. Sketch a **surface mount** connection.
4. Describe, as **thoroughly** as you can, the role of the **photo-resist** in the manufacture of a PCB.

Question 4. (Protel)

In Protel, describe, in as much **detail** as you can, what each of the following **four** items is used for in (i) the **Schematic Editor** and in (ii) the **PCB Layout**.

1. Library Reference.
2. Designator.
3. Footprint.
4. Part Type.