Answer All Questions:

Q1:
1. State the electronics generations giving a brief about each generation.
2. What is zone refining?
3. Write about the substrate type in both Monolithic and Film ICs.
4. Discuss the purpose of the oxide layer in fabricating the IC and how this layer is created?
5. What do we mean by a hybrid microcircuit?

Q2:
Explain the photolithography step used in fabrication the micro device showing all types of masks used.
Why Etching is used after photolithography?

Q3:
Give a brief about metallization step.
Describe with drawing the process steps needed to fabricate npn transistor using Epitaxial Method.

Q4:
Write about Thin and Thick Films IC fabrication.
Why Film technology is not used in fabricating Logic ICs?
Q5:

For the following sheet:

Calculate the sheet resistance $R_s$ if total resistance $R$ is 100 ohm, and the material resistivity = 1

Explain briefly how this sheet resistance is fabricated as a thin Film using sputtering method.