Advanced Printed Electronics. Inkjet

Answer the questions, short answer is enough.

Materials:

https://www.fujifilmusa.com/products/industrial_inkjet_printheads/deposition-products/dmp-2800/index.html

Device:

1. Device manufacturer and type number?

2. Printable area?

3. Repeatability?

4. MAX temperature for the vacuum platen (°C)?

Printing:

1. Gerber vector pattern file should convert to the Bitmap format. What format?

2. Calculate optimal drop spacing (DS), if drop diameter on the substrate is 30 micron. What is the optimal DS?

3. What is the optimal image resolution for the DS above?
    a. What happening if the image resolution is too high relating to the drop spacing?

    b. What happening if the image resolution is too low relating to the drop spacing?

4. What happening for the dimensions if DS is wrongly calculated relating to image resolution?
    a. If DS is too high?

    b. If DS is too small?

5. After the printing, the dimensions are okay but quality is poor. What is the reasons if:
    a. too much material is deposited onto the substrate?

    b. Insufficient material deposition? On the trace there is small micro holes

6. What could be reason for the small satellite drops near the print line?

Cartridge and nozzle head:

1. Explain the principles for the nozzle head?

2. What is the MAX adjustable temperature for the nozzle head?

3. Cartridge maximum and minimum ink volume?

4. Why it is important to use micro filter when filling the cartridge?

5. Nozzle head dropsize (pl)?

6. Maximum image/printing resolution?

7. Amount of nozzles/head?

8. Distance between nozzles (µm)?

9. Size of the nozzle orifice (µm)?

10. Jettable viscosity range (cps)?

Google?

- Find at least five different ink manufacturers or type of inks, which are developed for the printed electronics and compatible with Inkjet printing.

This link on below could be useful.

https://www.printedelectronicsnow.com/buyersguide/

- What kind of other inks you can find than silver based inks?