

Answers

- 1) Possible answers: No mask is required for EBL; High resolution; Prints patterns directly on wafer; Ability to work with multiple types of materials
- 2) X-rays have shorter wavelengths and provide a higher resolution without the need of a lens. Electron beams also provide higher resolution and require no masks to produce patterns. Also, UV light causes diffraction issues when exposed, while X-ray and Electron beams eliminate that issue.
- 3) EBL requires no mask, while X-ray does. EBL uses electron beam to expose substrate while X-ray lithography uses Synchrotron radiation (x-rays). X-ray does not use lenses while EBL does. X-ray does not have scattering issues as much as EBL. X-ray is much faster and cheaper than EBL. EBL can be used to create masks and are very flexible with the type of material operated on it, while X-ray requires specific materials to be used on its mask in order to operate properly.
- 4) Masks are expensive and distortions may arise from heavy usage. No lens used, so feature size must be the same on mask and silicon wafer. Mask are expensive to produce and require specific materials.