Assignment 6

1) Distance between final lens and sample surface in SEM is called _____
WORKING DISTANCE

2) Smaller convergence angle of the electron beam in SEM leads to _____ Depth of Focus
- smaller
- (●) greater
- no change in

3) Which type of secondary electrons are produced by the back scattered electrons exiting the sample
- SE I
- (●) SE II
- SE III

4) The electrons emitted after the beam interacts with the sample, having energy less than 50 eV is conventionally called as
- Auger electrons
- Back scattered electrons
- transmitted electrons
- (●) Secondary electrons

5) As the Working distance in SEM decreases
- resolution is better
- Depth of Focus decreases
- Magnification increases
- (●) All of the above

6) Three dimentional kind of imaging is possible in SEM due to its

- SE and BSE electrons
- High depth of field
- High magnification
- High depth of focus

7) The qualitative and quantitative elemental analysis is done by collecting

- back scattered electrons
- X-rays form the surface of few nanometers thick
- secondary electrons
- X-rays from depth of few microns

8) Misorientation across grain boundaries can be analysed by

- EBSD-orientation mapping
- EDS-elemental mapping
- EBSD-kikuchi patterns
- BSE imaging

9) What is the advantage of WDS than EDS?

- easy operation
- has multiple detectors
- can even detect trace elements
- can use high magnification

10) What source of diffractor is used in WDS and why?

- polymers to capture all wavelength of X-rays from organic and inorganic specimens
- Organic crystals to enable high wavelength X-rays from elements with lower atomic number
- silicon crystals to enable high and low wavelength X-rays
- Quartz crystals to enable low wavelength X-rays from elements with higher atomic number