

UNIVERSITY OF BUEA

COLLEGE OF TECHNOLOGY

CONTINUOUS ASSESMENT: TEST 1

MATERIALS SCIENCE (EEC213)

002/02/218

1. Classification is a very useful concept and practice which makes the management of information easier. In Materials Science materials' properties are commonly used as criteria for classifying materials.
 - a) Propose a classification scheme and one example of a material in each class of materials using the following properties as criteria; i) Density ii) Melting point iii) Electrical conductivity iv) mechanical strength v) Composition
 - b) Give one area of application for the different materials given as examples in 1a iii and 1a iv above,
 - c) For each of the classes identified under 1a v, give one example of a material that is produced in Cameroon
2. Highlight the contribution(s) of each of the following to an understanding of the structure of the atom.
 - a) Thomson's experiments with cathode rays
 - b) Rutherford's scattering experiments
 - c) Blackbody radiation and the photoelectric effect
 - d) Bohr's analysis and explanation of the H-spectrum
 - e) The diffraction of experiments using electron beams carried out by Davisson and Gemmer
3. Give 1 example of a current or past application of each of the following phenomena ;
 - a) Blackbody radiation
 - b) Cathode rays
 - c) Diffraction of electrons
4. a) Sketch and label the following plots; i) Stress vs strain plots for ductile materials ii) Stress vs strain curve for a brittle material iii) Continuous spectrum of EMR vi) Discrete spectrum of EMR
b) Give 1 example of material/spectrum for each of the behaviour 4a.