

**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**  
**SCHOOL OF TECHNOLOGY EDUCATION**  
**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION**  
**SECOND SEMESTER 2012/2013 EXAMINATION**

**COURSE CODE: ITE 221**

**COURSE TITLE: MATERIAL TECHNOLOGY**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: ATTEMPT QUESTION FOUR (4) (IS COMPULSORY)  
AND ANY OTHERS THREE (3)**

Q1(a) Materials can be grouped into three main classes. State down the three classes and give two examples under each class.

1(b) Mention and define three properties we can use to distinguish one metal from another.

Q2. Briefly explain the four major steps for the product of glass. And mention four types of glasses and their areas of application.

Q3(a) Oil contains compound derived from the pigments of living organism – Discuss!

3(b) Relate the following to petroleum products

(i) Fertilizer (ii) Paint (iii) Plastics (iv) Electricity Generation

Q4 (a) Functional Performance of Materials:-

A product or part when researched, planned, designed and produced should meet a set of functional objectives or requirement – Discuss and enumerate the expected requirement.

4(b) Define the following: (i) Fracture of Material (b) Failure of Material

(iii) Toughness of Material (iv) Fatigue property of material.

Q5(a) Oxygen is the most abundant chemical element in the earth's biosphere – air, sea and land – Briefly Discuss the production of Oxygen and its areas of application.

5(b) Identify and complete the following chemical formulae/reactions.

