

# Ceramics :-

## Definition :-

Ceramic is an inorganic non-metallic solid made up of clay. It is shaped and hardened by heating it to high temperature.

**Examples:** It is all around us. It includes things like tiles, bricks, plates, utensils. It is also found in products like watches, automobiles, space shuttles, appliances, etc.

## Properties of Ceramics :-

Due to the wide range of ceramics properties it has diverse applications.

- Ceramics are hard and strong material
- They are wear resistant and durable.
- They are corrosion-resistant
- They are oxidation-resistant
- Ceramics are brittle and little elasticity
- Ceramics are non-magnetic.

# Classification of Ceramics:

Ceramics are attributed in two main categories

## 1. Application Based Classification

This classification further divide Ceramics into two types

- a) Traditional Ceramics
- b) Advance Ceramics

### a) Traditional Ceramics:

Traditional Ceramics include Whitewares, structural Clay products, Brick and tile, Abrasives, refractories, and cement

### (b) Advanced Ceramics:

Advance Ceramics include electroceramics and Advance structural ceramics. Various Ceramics like magnetic, optical, conductive, nuclear Bioceramic, Auto motive Ceramics are part of this type.

## 2. On the Basis of Composition

Date: \_\_\_\_\_

Ceramic can be divided into 3 material categories:

- a) Oxides
- b) Non-oxides
- c) Composites

## Applications of Ceramics :-

Ceramics have a wide range of properties which facilitates its use in different products.

### • **Aerospace :-**

Ceramics are used in formation of parts of space shuttle, rockets etc.

### • **Medical field :**

Ceramics are used in medical field especially in dental and bone filling.

### • **Electronic materials :**

Computer parts like insulator, resistor capacitor are also made up of ceramics.

• **Construction materials :**

Manufacturers use ceramics to make tiles, pipes and other construction material.

• **Auto mobile industry :**

Ceramics are also used in automobile industry for making different parts like catalytic converter, filters and rotors etc.

**Daily uses :**

Ceramics have greatly used in homes like pottery, dinner sets, home electronics etc.

attempt proper questions for evaluation.

currently, these are just like notes and notes cannot be properly evaluated.