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**SARDAR PATEL UNIVERSITY**  
**EXTERNAL EXAMINATION, APRIL 2016**  
**B.Sc (Semester 4 ) INDUSTRIAL CHEMISTRY(NC-2010 batch)**  
**US04CICH01: Engineering Materials**

02/05/2016, Monday

Max. Marks :70

2.30 p.m to 5.30 p.m

**Q-1 Write the number of the correct answer**

**[10 x 1 =10]**

1. The main engineering requirement of materials falls under \_\_\_\_ category?  
(a) Fabrication (b) Service  
(c) Economical (d) All of these
2. Purest form of iron is:  
(a) Pig iron (b) Steel  
(c) Cast iron (d) Wrought iron
3. Grey cast iron possesses greyish colour due to presence of:  
(a) Iron (b) Iron carbide  
(c) Both (a) & (b) (d) Graphite
4. Most glasses produced belong to the category of:  
(a) Borosilicate glass (b) Potash glass  
(c) Flint glass (d) Soda glass
5. Ceramics means:  
(a) Clay products (b) Refractory  
(c) Whiteware (d) All of these
6. Which of the following is neutral refractory:  
(a) Magnesite (b) Dolomite  
(c) Silica (d) Graphite
7. Aluminium is manufacture from:  
(a) Alunite (b) Kaolinite  
(c) Bauxite (d) Dolomite
8. Alumina content in Bauxite is?  
(a) 40-45% (b) 10-15%  
(c) 55-60% (d) 85-95%
9. Which of following is important mineral ore of Nickel?  
(a) Calcite ore (b) Bauxite ore  
(c) Sudbury ore (d) Niccolite
10. Clay contains mainly:  
(a) Silica (b) Alumina  
(c) Lime (d) Both (a) & (b)

**Q-2 Answer Any six**

**[6 x 2 =12]**

1. Define materials and engineering materials.
2. Name types of cast iron.
3. Enlist the uses of cement.
4. Enlist the various types of cement.
5. State important mineral ores of nickel.
6. Write commercial uses of silver and aluminium.
7. What are alloys? Discuss the types of alloys.
8. Discuss the purposes of making of alloys.

**Q-3 Discuss the classification of engineering materials. [08]**

**OR**

**Q-3 Briefly explain the properties of Brasses and Bronzes [08]**

**Q-4 Explain the manufacturing method of Refractories. [08]**

**OR**

**Q-4 Write a note on Ceramic Industries. [08]**

**Q-5 With the help of the suitable flow diagram, explain the manufacture of Ordinary Cement [08]**

**OR**

**Q-5 Enlist the properties of glass and discuss its types and application. [08]**

**Q-6 What are alloy steels? Explain the need for making alloy steels. [08]**

**OR**

**Q-6 What is cast iron? Discuss about varieties of cast iron. [08]**

**Q-7 Discuss in brief about the various factors affecting corrosion rate. [08]**

**OR**

**Q-7 With the help of suitable examples, discuss various types of corrosion [08]**

**Q-8 Giving examples, differentiate between Inorganic and organic coatings [08]**

**OR**

**Q-8 Explain the Characteristics of oils and pigments [08]**

← X →  
(2)