

- ### SECTION-D
- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain the manufacture, properties and uses of Zirconia bricks.
- Q.37 Explain the manufacture, properties and uses of silicon nitride bricks.
- Q.38 Write the refractories used in various parts of blast furnace and cement industries.

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- Q.5 Blast furnace is used to make \_\_\_\_\_.  
 a) Iron                              b) Glass  
 c) Refractories                  d) Tiles
- Q.6 The main raw material for manufacture of silicon carbide refractories are \_\_\_\_\_.  
 a) Silica sand and magnesia  
 b) Silica sand and coke  
 c) Alumina and magnesia  
 d) Corundum
- Q.7 Applications of cermets include  
 a) Hearth of the blast furnace  
 b) Nuclear reactors, missiles & space crafts  
 c) Insulation of furnaces  
 d) For making roof of electric furnaces
- Q.8  $3\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$  is the formula of  
 a) Alumina                          b) Ball clay  
 c) Mullite                              d) Dolomite
- Q.9 Examples of special refractory is \_\_\_\_\_.  
 a) Fireclay Refractory  
 b) Silica Refractory  
 c) Silicon carbide Refractory  
 d) All of these
- Q.10 Examples of abrasive material is  
 a) Quartz                              b) Garnet  
 c) Diamond                          d) All of these

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Sintering is densification of shaped refractory bricks. (True/False)
- Q.12 \_\_\_\_\_ refractory is used in coke oven.
- Q.13 Titania refractories are \_\_\_\_\_ refractory.
- Q.14 Silicon carbide refractories are made by reaction of silica sand and coke at temperature of \_\_\_\_\_.  
 (2200°C-2600°C, 1200°C-1600°C)
- Q.15 Silicon nitride refractories are used for making kiln furnitures. (True/False)
- Q.16 For making furnace arc roof \_\_\_\_\_ refractories are used. (Silica, Magnesia)
- Q.17 Carbon refractories are used for making blast furnace hearth. (True/False)
- Q.18 Castables are refractories for giving a shape in the furnace. (True/False)
- Q.19 Cermet is composite materials made by using ceramics and metal.
- Q.20 Hydraulic-setting Refractory Mortar are also referred as non-water soluble refractory mortar. (True/False)

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 How saggers are made? Explain.