Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech (CT)/SEM-8/CT-801B/2011

2011

NON-OXIDE CERAMICS

Time Allotted : 3 Hours Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer any *five* questions. 5 × 14 = 70

1. State the important methods of synthesis of Nitride. Why does greasy feel appear in BN ? Discuss in detail the synthesis methods for production of Si_3N_4 body. 5 + 3 + 6

2. What are Sialon ? How is it industrially prepared and what are their applications ? What are the other methods of preparation of Sialon ? 2 + 5 + 4 + 3

3. What is cermet ? Is their any difference between cermet and conventional refractories ? State the different factors affecting the strain of cermets. What are the applications of cermet ? 1 + 3 + 7 + 3

4. Discuss the essential structural feature of graphite in relation to its important properties. State the effect of fabrication variables in processing during graphitisation. Write in brief the thermal properties of graphite. 5 + 5 + 4

5. "Silicides are closely related to intermetallic compound." Explain. Describe in detail the manufacturing method of $MoSi_2$ including thermal nature of the process. Write the important applications and limitations of metal silicides. 4 + 6 + 2 + 2

6. State the important methods of synthesis of carbides. Mention their important properties and write also their applications. Why SiC cannot be used as heating element above 1400° C ? 5 + 6 + 3