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Total No. of Pages : 02

Total No. of Questions : 19

M.Sc (Chemistry) PIT (2015 to 2017) (Sem.-2)

CHEMISTRY OF MATERIALS

Subject Code : CHL-416A

Paper ID : [51153]

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying FIVE marks each and students have to attempt ALL questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. How are LCD screens made?
2. Explain inorganic liquid crystals.
3. What is spinal used for?
4. Give example of normal and inverse spinal structure.
5. In a face centred cubic arrangement of 'A' and 'B' atoms in which 'A' atoms are at the corners of the unit cell and 'B' atoms are at the face centers. One of the 'A' atom is missing from one corner in unit cell. The simplest formula of compound is?
6. Explain the silicates.
7. Give comparison between CNT and grapheme.
8. What are Nanotubes and what are they used for?
9. Which types of glass is used for making optical instruments?
10. What are the limitations of zeolite as a catalyst?

SECTION-B

11. Describe the structure and properties of carbon Nanotubes.
12. Explain the Thermochromic material and their methods of preparation.
13. Draw and describe the structure of spinal type of compound.
14. Explain the extrinsic semiconductors giving examples.
15. Discuss Liquid Crystals Display in detail.
16. Illustrates the Aluminophosphates. How it differs from Aluminosilicates?

SECTION-C

17. Explain Zeolites, types, preparation method, structure and their applications in petroleum industry.
18. Describe the structure, preparation method, properties and application of graphene.
19. Explain the following giving examples :
 - a) Perovskites and related phase
 - b) Endohedral fullerenes