

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
Chromepet, Chennai — 600 044.

M.Sc. - END SEMESTER EXAMINATIONS APRIL - 2022

SEMESTER - IV

20PPHET4005 - MATERIALS SCIENCE

Total Duration : 3 Hrs.

Total Marks : 60

**Section A**

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Describe commercial ceramic system with an example of Si-Al system technical ceramics.
2. Classify composite materials and explain them shortly.
3. Prepare the list of properties of thermoplastics.
4. Compare the properties of rubber and elastomers.
5. Differentiate optical, molecular and inter facial polarizability.
6. Explain the classification of dielectric materials.
7. Sketch the procedure of formation of junction in integrated circuits.
8. Organize the classification of magnetism shortly.

**Section B**

**Part A**

Answer any **TWO** questions ( $2 \times 10 = 20$  Marks)

9. Infer structural features and production of ceramics with forming and post forming process.
10. What are polymers? Classify and explain them and List out the applications of high technology polymers.
11. Interpret Electrical polarization and the mechanism of polarization.
12. Describe origin and size of domain structure, distinguish hard and soft magnets.

**Part B**

Compulsory question ( $1 \times 10 = 10$  Marks)

13. Evaluate the process of wafer manufacture such as oxidation, photo lithography, doping technique and epitaxial growth with neat diagram.

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