

CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT



School of Engineering & Technology

Centurion
UNIVERSITY
Shaping Lives...
Empowering Communities...

Subject Name-Applied engineering materials

Subject Code -(CUTM1009)

Question Bank

Short Answer Questions (1 mark)

1. What is a carbon nanotube?
2. Draw the structure of the repeat unit of polystyrene and PVC.
3. What is an electrochemical cell?
4. Define a composite.
5. What is a lubricant?
6. What is an adhesive? Give example.
7. What is a nanomaterial?
8. What is a Primary battery?
9. Give three examples of thermosetting polymers.
10. What is a supercapacitor?
11. What is a photovoltaic cell? Give example.
12. What is a nanomaterial?
13. What is a secondary battery? Give a few examples.
14. Give three examples of thermoplastic polymers along with their monomer structures.
15. What is a polymer nanocomposite?
16. What is a quantum dot?
17. Draw the structure of the repeat unit of Teflon and Polystyrene.
18. What is a galvanic cell?
19. What is a polymer? Give a few examples of polymers.
20. What are the monomers of PVC, TEFLON, PMMA & NYLON- 66?
21. What is Vulcanization? What are the properties of vulcanized rubber?
22. What is a Homopolymer and a Copolymer? Give a few examples.
23. What is meant by the functionality of a monomer?
24. What are linear & cross-linked polymers? Give a few examples.
25. How is PVC prepared and what are its applications?

Long Answer Questions (5 Mark Each)

1. Explain how polymer nanocomposite is prepared and what are the applications of polymer nanocomposite.
2. What are adhesives give a few examples. Explain different adhesive mechanisms.
3. Discuss the synthesis of Zinc oxide nanoparticles by precipitation method.
4. What is a lithium-ion battery? Discuss the principle of the working of a lithium-ion battery.
5. What are the different approaches used for the synthesis of nanomaterials explain with examples.
6. Discuss the classifications of nanomaterials with suitable examples. What are the unique properties of nanomaterials?
7. Explain briefly about fullerenes and carbon nanotubes?
8. What is polystyrene? Explain How is it prepared and what are its applications?
9. Explain the various unique properties of nanomaterials along with their applications?
10. What is a fuel cell what are its applications? Discuss the principle of the working of a fuel cell?
11. Write about the method of preparation, properties and applications of ZnO nanoparticles?
12. What are lubricants what are their properties and explain the mechanism of lubrication?
13. Explain briefly about the synthesis of carbon nanotubes along with their applications?
14. Explain briefly how PMMA is prepared and what are its applications?
15. What are composites? Explain how are composites classified along with their applications?
16. What is a fuel cell what are its applications? Discuss the principle of the working of a fuel cell?
17. Write about the method of preparation, of Zinc oxide nanoparticles by precipitation method and what are the applications of ZnO nanoparticles?
18. What are lubricants what are their properties and explain the mechanism of lubrication?
19. Differentiate between thermosetting and thermoplastic polymers?
20. What is the degree of polymerization? What is the molecular weight of polytetrafluoroethylene (Teflon) when the degree of polymerization is 100000?

21. What is polymerization? Write the mechanism of free radical addition polymerization.
22. How are Polystyrene and PMMA prepared and what are their applications?
23. Write preparation, structure and uses of nylon 6,6 ?
24. Compare addition polymerization and condensation polymerization.
25. Write short notes on a) Biopolymers b) Addition polymers
26. Write short notes on the applications of different thermoplastic polymers.
27. What are Biopolymers and what are their applications?
28. Write short notes on Copolymerization
29. What are adhesives giving a few examples? Explain different adhesive mechanisms.
30. Explain the working mechanism of a nickle cadmium battery
31. What is a lithium-ion battery? Discuss the principle of the working of a lithium-ion battery.
32. What is a fuel cell what are its applications? Discuss the principle of the working of a fuel cell.
33. Write short notes on the working of a lead acid battery and a photovoltaic cell.
34. What is a super capacitor and explain its working principle?