

# LECTURE 2

IITG Students



Points: **8/10**

## 1. Name of Student

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## 2. Roll No. of Student

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## 3. Which is the correct explanation for the time–temperature superposition principle? Select one from the following candidates.

(0/1 Points)

- ☐ The mechanical response at long time is equivalent to that at low temperature for a viscoelastic material.
- ☒ The mechanical response at long time is equivalent to that at low temperature for an elastic material.
- ☐ The mechanical response at long time is equivalent to that at high temperature for a viscoelastic material. ✓

- ☐ The mechanical response at long time is equivalent to that at high temperature for an elastic material.

4. Which is irrelevant to the morphology of micro domains in block copolymers?  
Select one from the following candidates.

(1/1 Points)

- ☐ Sphere
- ☒ Shish-Kebab ✓
- ☐ Lamella
- ☐ Gyroid

5. Which length scale is typical for spherulite? Select one from the following candidates.

(1/1 Points)

- ☐ 0.1nm
- ☐ 10nm
- ☒ 10 $\mu$ m ✓
- ☐ 1mm

6. Which length scale is typical for stacking structures of the crystalline lamellae?  
Select one from the following candidates.

(1/1 Points)

- ☐ 0.1nm
- ☒ 10nm ✓
- ☐ 10 $\mu$ m
- ☐ 1mm

7. Which bond is relevant for the chain scission in biodegradable polymers? Select one from the following candidates.  
(1/1 Points)

- ☐ Hydrogen bond
- ☐ Sulphur bond
- ☐ Double bond
- ☒ Ester bond ✓

8. What is the name of the polymer conformation in amorphous phase?  
(1/1 Points)

- ☒ Random coil ✓
- ☐ Random phase
- ☐ Random copolymer
- ☐ Random approximation

9. Which polymer forms hydrogen bonding in its crystalline unit cell? Select one from the following candidates.  
(1/1 Points)

- ☐ Polyethylene
- ☐ Polypropylene
- ☐ Poly(1-butene)
- ☒ Polyamide 66 ✓



10. Which polymer has geometrical isomers (cis and trans)? Select one from the following candidates.  
(0/1 Points)

- ☐ Polyethylene
- ☐ Polypropylene
- ☐ Polybutadiene ✓
- ☒ Polystyrene

11. Which polymer has structural difference in 1,2- and 3,4 addition of diene monomers? Select one from the following candidates.

(1/1 Points)

- ☐ Polyethylene
- ☐ Polypropylene
- ☐ Polybutadiene
- ☒ Polyisoprene ✓

12. 1. Which polymer has difference in the stereo-regularity (tacticity)? Select one from the following candidates.

(1/1 Points)

- ☐ Polyethylene
- ☒ Polypropylene ✓
- ☐ Polybutadiene
- ☐ Polyisoprene

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