Assignment 3

Due on 2021-02-19, 23:59 IST.

At the start of submitting this assignment, please make sure:

- The assignment file is included.
- All questions have been answered.
- The file is not password protected.

**Topic:** Thermomechanical behavior in polymeric materials

**Task:** Answer the following multiple-choice questions. Each question carries 2 marks.

1. The time constant for a material is a measure of:
   - A. The rate of heat transfer
   - B. The rate of heat storage
   - C. The rate of heat loss
   - D. The rate of heat generation
   **Answer:** A

2. The thermal conductivity of a material increases with:
   - A. Decrease in temperature
   - B. Increase in temperature
   - C. Increase in pressure
   - D. Decrease in density
   **Answer:** B

3. The specific heat capacity of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** D

4. The coefficient of thermal expansion of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** D

5. The Young's modulus of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** A

6. The Poisson's ratio of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** A

7. The elastic modulus of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** A

8. The ultimate tensile strength of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** A

9. The yield strength of a material is:
   - A. A constant value
   - B. A variable value
   - C. Independent of temperature
   - D. Dependent on temperature
   **Answer:** A

10. The failure strain of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

11. The hardness of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

12. The toughness of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

13. The creep strength of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

14. The fatigue limit of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

15. The corrosion resistance of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

16. The electrical conductivity of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

17. The magnetic permeability of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

18. The thermal diffusivity of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

19. The thermal conductivity of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

20. The thermal expansion of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

21. The thermal stress of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

22. The thermal strain of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

23. The thermal energy of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

24. The thermal power of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

25. The thermal efficiency of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

26. The thermal resistance of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

27. The thermal insulation of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

28. The thermal radiation of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

29. The thermal emission of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

30. The thermal energy absorption of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

31. The thermal energy transmission of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

32. The thermal energy storage of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

33. The thermal energy transformation of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

34. The thermal energy dissipation of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

35. The thermal energy conservation of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

36. The thermal energy control of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

37. The thermal energy regulation of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

38. The thermal energy management of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

39. The thermal energy monitoring of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A

40. The thermal energy optimization of a material is:
    - A. A constant value
    - B. A variable value
    - C. Independent of temperature
    - D. Dependent on temperature
    **Answer:** A