Assignment 4

Due on 2020-02-26, 25-6H IST.

1. Select the correct option from the following for ceramic materials, metal matrix material and ferrous plastics material.

   - Compressive strength is greater than tensile strength
   - Compressive strength is equal to tensile strength
   - Compressive strength is lower than tensile strength

   No. 1: 1 point

2. The stress at which cracks first appear is termed as ________

   - Yield point
   - Ultimate strength
   - Ultimate tensile strength
   - Ultimate breaking strength

   No. 2: 1 point

3. From the following, choose the proper reason for brittleness in ceramics.

   - The material is not ductile
   - The material is not elastic
   - The material is not hard
   - The material is not tough

   No. 3: 1 point

4. The strength and fracture toughness of a material are known to be 325 MPa and 3.5 MPa\(\sqrt{m}\), respectively. Assume Y = 1. The maximum size of notches which can be tolerated in the component is ________ mm, up to 3 decimal places.

   No. 4: 2 points

5. From the following, choose the dominant cracking type relevant to ceramic materials

   - Matrix cracking
   - Interfacial cracking
   - Crack tip blunting
   - Crack tip blunting

   No. 5: 1 point

6. From the following, select suitable processing technique for ceramics

   - sintering
   - hot pressing
   - powder processing
   - hot pressing

   No. 6: 1 point

7. The shrinkage that occurs due to the consolidation process of powder compacts by diffusion mass transport possible at a temperature in absolute scale of ________

   - 1500 K
   - 1600 K
   - 1700 K
   - 1800 K

   No. 7: 1 point

8. Select the correct option from the following:

   1. Green strength
   2. Green density
   3. Green compact
   4. Green mass

   No. 8: 1 point

9. Sintering refers to the consolidation process of powder compacts by diffusion mass transport possible at a temperature in absolute scale of ________

   - 800 K
   - 900 K
   - 1000 K
   - 1100 K

   No. 9: 1 point

10. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 10: 1 point

11. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 11: 1 point

12. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 12: 1 point

13. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 13: 1 point

14. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 14: 1 point

15. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 15: 1 point

16. The material is subjected to complex loading in which the stresses are ________.

    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude
    - Equal in magnitude

    No. 16: 1 point