

1. Which matrix composites are used extensively by the aviation industry? (10 points)

- ☒ CMC (Ceramic Matrix Composites)
- ☒ MMC (Metal Matrix Composites)
- ☒ PMC (Polymer Matrix Composites)
- ☒ SCMC (Semiconductor Matrix Composites)

2. Which of the following is not an example of an organic fiber? (10 points)

- ☐ Polyester
- ☐ Aramid
- ☐ Glass
- ☐ Ceramic

3. Which of the following materials is an example of a composite material? (10 points)

- ☐ Wood
- ☐ Bone
- ☐ Fiberglass
- ☐ Cement

4. The main types of composites are structural, particle reinforced and fiber reinforced. (10 points)

- ☒ True
- ☒ False

5. Which of the following is a component of concrete? (10 points)

- ☐ Gravel
- ☐ Portland Cement
- ☐ Sand
- ☐ Water

6. In 1824, Joseph Aspdin obtained a patent for this composite material. (10 points)

- ☒ Aramid
- ☒ Cement
- ☒ Fiberglass
- ☒ Plywood

7. This modern composite material makes up about 65% of all composite materials produced today? (10 points)

- ☐ Carbon Fiber
- ☐ Concrete
- ☐ Fiberglass
- ☐ Plywood

8. In 3000 BC, Egyptians used this early known composite material. (10 points)

- ☐ Aramid
- ☐ Bow
- ☐ Brick
- ☐ Plywood

1. Which matrix composites are used extensively by the aviation industry?

- CMC (Ceramic Matrix Composites)
- MMC (Metal Matrix Composites)
- **PMC (Polymer Matrix Composites) (correct answer, your response)**
- SCMC (Semiconductor Matrix Composites)

2.

Points earned: 10 out of 10

2. Which of the following is not an example of an organic fiber?

- Polyester
- Aramid
- **Glass (correct answer, your response)**
- **Ceramic (correct answer, your response)**

3.

Points earned: 10 out of 10

3. Which of the following materials is an example of a composite material?

- **Wood (correct answer, your response)**
- **Bone (correct answer, your response)**
- **Fiberglass (correct answer, your response)**
- **Cement (your response)**

4.

Points earned: 0 out of 10

4. When was the plywood industry "born"?

- 1865
- 1905
- **1907 (correct answer, your response)**
- 1940

5.

Points earned: 10 out of 10

5. The main types of composites are structural, particle reinforced and fiber reinforced.

- **True (correct answer, your response)**
- False

6.

Points earned: 10 out of 10

6. Which of the following is a component of concrete?

- Gravel (correct answer, your response)
- Portland Cement (correct answer, your response)
- Sand (correct answer, your response)
- Water (correct answer, your response)

7.

Points earned: 10 out of 10

7. ____ and a matrix are the components of all composites.

- Binder
- Reinforcement (correct answer, your response)

8.

Points earned: 10 out of 10

8. In 1824, Joseph Aspdin obtained a patent for this composite material.

- Aramid
- Cement (correct answer, your response)
- Fiberglass
- Plywood

9.

Points earned: 10 out of 10

9. This modern composite material makes up about 65% of all composite materials produced today?

- Carbon Fiber
- Concrete
- Fiberglass (correct answer, your response)
- Plywood

10.

Points earned: 10 out of 10

10. In 3000 BC, Egyptians used this early known composite material.

- Aramid
- Bow
- Brick (correct answer, your response)
- Plywood

11.

Points earned: 10 out of 10

1. Composite materials are classified based on:
(a) Type of matrix (b) Size-and-shape of reinforcement (c) Both (d) None
2. Major load carrier in dispersion-strengthened composites
(a) Matrix (b) Fiber (c) Both (d) Can't define
3. Usually softer constituent of a composite is
(a) Matrix (b) Reinforcement (c) Both are of equal strength (d) Can't define
4. Usually stronger constituent of a composite is
(a) Matrix (b) Reinforcement (c) Both are of equal strength (d) Can't define
5. Last constituent to fail in fiber reinforced composites
(a) Matrix (b) Fiber (c) Both fail at same time (d) Can't define
6. Rule-of-mixture provides _____ bounds for mechanical properties of particulate composites.
(a) Lower (b) Upper (c) Both (d) None
7. Mechanical properties of fiber-reinforced composites depend on
(a) Properties of constituents
(b) Interface strength
(c) Fiber length, orientation, and volume fraction
(d) All the above
8. Longitudinal strength of fiber reinforced composite is mainly influenced by
(a) Fiber strength (b) Fiber orientation (c) Fiber volume fraction (d) Fiber length
9. The following material can be used for filling in sandwich structures
(a) Polymers (b) Cement (c) Wood (d) All
10. Not an example for laminated composite material
(a) Wood (b) Bimetallic (c) Coatings/Paints (d) Claddings

Answers:

1. c
2. a
3. a
4. b
5. a
6. c
7. d
8. a
9. d
10. a