

Unit 6 - Week 5

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

Week 4

Week 5

Friction and wear of HDPE-HA-Al₂O₃

Wear behavior of bioceramics and biocomposites

Tribological behavior of dental restorative materials

Wear of transformation toughened zirconia

Fretting wear of SiAlON Ceramics

Quiz : Assignment 5

Solution For Assignment 5

Week 6

Week 7

Week 8

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WEEKLY FEEDBACK

Assignment 5

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-04, 23:59 IST.

1) The material removed as a result of bio implant wear can cause

1 point

- toxicity
- inflammatory reaction
- systemic response
- all of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
all of the above

2) From the following, select self-mated material exhibiting the lowest wear

1 point

- HDPE
- Al
- SS 316L
- Al₂O₃

No, the answer is incorrect.
Score: 0

Accepted Answers:
Al₂O₃

3) From the following, the most preferred tribological test for bio implant application is

1 point

- erosion
- fretting wear in SBF
- sliding wear
- fretting wear at high temperature

No, the answer is incorrect.
Score: 0

Accepted Answers:
fretting wear in SBF

4) Fretting wear

1 point

- doesn't involve abrasive wear mechanism
- involves linear relative displacement of small amplitude
- does not depend on normal load
- doesn't involve adhesive wear mechanism

No, the answer is incorrect.
Score: 0

Accepted Answers:
involves linear relative displacement of small amplitude

5) Specific wear rate is

1 point

- Wear volume/ (load x traversed distance)
- Wear area/ (load x traversed distance)
- Wear volume / (COF x traversed distance)
- Wear volume / traversed distance

No, the answer is incorrect.
Score: 0

Accepted Answers:
Wear volume/ (load x traversed distance)

6) From the following, select factors that would influence the wear of ceramics.

1 point

- friction couple and experimental parameters
- contact conditions and configuration
- contact configuration and surface roughness of contacting surface
- microstructure and mechanical properties
- all of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
all of the above

7) In biotribology, SBF stands for

1 point

- simulated body fluid
- simulated blood flow
- standard body fluid
- simulated body flow

No, the answer is incorrect.
Score: 0

Accepted Answers:
simulated body fluid

8) From the following, scratch test is preferred

1 point

- to simulate the erosive wear phenomenon
- to simulate the surface roughness
- to simulate the abrasive wear phenomenon
- to find the surface chemical composition

No, the answer is incorrect.
Score: 0

Accepted Answers:
to simulate the abrasive wear phenomenon

9) In the given fretting wear conditions against alumina, the addition of alumina in HDPE-20vol% HAp composite leads to

1 point

- increased formation of transfer film
- protection of polymer matrix from asperity induced abrasive wear
- increased wear rate due to increased hardness and elastic modulus

No, the answer is incorrect.
Score: 0

Accepted Answers:
protection of polymer matrix from asperity induced abrasive wear

10) Instrumented indentation can be used to determine

1 point

- strength and hardness
- density and elastic modulus
- strength and elastic modulus
- hardness and elastic modulus

No, the answer is incorrect.
Score: 0

Accepted Answers:
hardness and elastic modulus