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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » **Fundamentals of Surface Engineering: Mechanisms, Processes and Characterizations (course)**

Announcements (announcements)

About the Course (https://swayam.gov.in/nd1_noc19_me69/preview) Ask a Question (forum)

Progress (student/home) Mentor (student/mentor)

Unit 2 - Week 1

Course outline

How to access the portal

Week 1

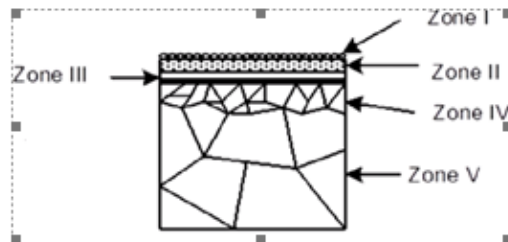
- Introduction and need of surface engineering (unit? unit=5&lesson=6)
- Surface/sub-surface regions and properties of importance for surface engineering (unit? unit=5&lesson=7)
- Surface properties and their modification (unit? unit=5&lesson=8)
- Classification of surface modification

Assignment No. 1

The due date for submitting this assignment has passed. **Due on 2019-08-14, 23:59 IST.**
As per our records you have not submitted this assignment.

1) The zone which constitutes oxides and nitrides is

1 point



- Zone I
- Zone II
- Zone III
- Zone IV

No, the answer is incorrect.

Score: 0

Accepted Answers:

Zone II

2) The depth of surface modification realized using different processes in ascending order will be **1 point**

- Electro plating, CVD, Laser Surface alloying, Hot dipping
- Electro plating, Laser Surface alloying, Hot dipping, CVD
- Laser Surface alloying, CVD, Hot dipping, Electro plating

techniques I
(unit?
unit=5&lesson=9)

- Classification of surface modification techniques II (unit?
unit=5&lesson=10)

Quiz :
Assignment No. 1
(assessment?
name=93)

- Solution for Assignment No. 1 (unit?
unit=5&lesson=107)

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

FEEDBACK FORM

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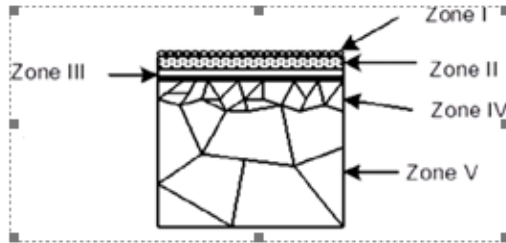
- CVD, Electro plating, Hot dipping, Laser Surface alloying

No, the answer is incorrect.
Score: 0

Accepted Answers:
CVD, Electro plating, Hot dipping, Laser Surface alloying

3) The zone which consists damaged crystalline structure is

1 point



- Zone I
 Zone II
 Zone III
 Zone IV

No, the answer is incorrect.
Score: 0

Accepted Answers:
Zone III

4) Physical property influencing the heat loss from IC engines is

1 point

- Thermal coefficient of expansion
 Thermal conductivity
 Refractoriness
 Density

No, the answer is incorrect.
Score: 0

Accepted Answers:
Thermal conductivity

5) According to Archard's law, wear volume is inversely proportional to

1 point

- Ductility
 Strength
 Hardness
 Toughness

No, the answer is incorrect.
Score: 0

Accepted Answers:
Hardness

6) Formation of oxide/nitride layer at the surface in case of Cr/Al metal system results in

1 point

- Coherent & non adherent layer
 Non coherent & adherent layer
 Coherent & adherent layer
 Non coherent & non adherent layer

No, the answer is incorrect.
Score: 0

Accepted Answers:

Coherent & adherent layer

7) Metal which shows highest percentage improvement for a given level of deformation in hardness through mechanical method of surface modification is **1 point**

- Martensitic stainless steel
- Mild steel
- Austenitic stainless steel
- Aluminium

No, the answer is incorrect.

Score: 0

Accepted Answers:

Austenitic stainless steel

8) Choose the correct statement, regarding application of coating metals different from substrate **1 point**

- I. To improve corrosion resistance
- II. To improve the surface hardness
- III. Reclamation of dimensions of base metal
- IV. To enhance the functionality of low quality metals

- I, II, IV
- I, II, III
- II, III, IV
- I, III, IV

No, the answer is incorrect.

Score: 0

Accepted Answers:

I, II, IV

9) The dilution percentage in case of surface modification through laser cladding generally observed is **1 point**

- 1-5%
- 20-30%
- 40-50%
- 70-80%

No, the answer is incorrect.

Score: 0

Accepted Answers:

1-5%

10) Electroplating of the metal combination which is used to improve the appearance of component such as bathroom fittings is **1 point**

- Ni-Cd
- Ni-Cr
- Cd-Zn
- Cu-Ag

No, the answer is incorrect.

Score: 0

Accepted Answers:

Ni-Cr

