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Unit 3 - Week 2

Assignment 2

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

Due on 2020-02-12, 23:59 IST.

1) The material removal from contacting surfaces involves: 1 point

○ linear relative motion
○ motion due to impact
○ motion due to application of torque to the loading system
○ all of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
all of the above

2) Choose appropriate example from the following where wear is not desirable   1 point

○ writing with pencil
○ machining
○ shaving
○ bearings

No, the answer is incorrect.
Score: 0
Accepted Answers:
bearings

3) Choose conformal contact from the following   1 point

○ flat bottom pin on flat
○ flat bottom block on ring
○ ball on disc
○ round bottom pin on flat

No, the answer is incorrect.
Score: 0
Accepted Answers:
flat bottom pin on flat

4) Under 10N normal load, a cylindrical bronze pin of radius 1 mm rests on a steel disk at a mean radius of 25 mm. When the disk rotates at 300 rpm for 10 hours, mass losses of the disk and pin are found to be 4 mg and 50 mg, respectively. The densities of bronze and steel are 9 g/cc and 8 g/cc, respectively. The hardness values for bronze and steel are 0.8 GPa and 2.5 GPa, respectively. The wear coefficient of steel disk (up to 1 decimal) is................ (X 10^-6).

[   ]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 4.0,5.0

                                                                                                    2 points

5) As per the indentation fracture mechanics, the minimum load required for a ceramic material in a point contact is 1 N. If the fracture toughness is increased by 1.5 times and the hardness decreased by 0.8 times, the minimum load (in N) required for fracture in the same contact (up to 1 decimal) is ....

[   ]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 9.5,10.0

                                                                                                    0 points

6) Choose correct combination for a abrasive wear condition   1 point
   i. ductile material   I. chipped out wear particle
   ii. brittle material   II. ribbon like wear particle

○ i-I, ii-II
○ i-II, ii-I
○ i-I, ii-I
○ i-II, ii-II

No, the answer is incorrect.
Score: 0
Accepted Answers:
i-II, ii-I

7) Choose the correct combination(s) for superior erosive wear resistant material.   1 point

i. tough and extremely hard
ii. tough and low elastic modules
iii. extremely tough and less hard
iv. low elastic modulus and low hard

○ i and ii
○ i
○ ii
○ iii
○ iv

No, the answer is incorrect.
Score: 0
Accepted Answers:
i and ii

8) Adhesion contribution to friction will be: 1 point

○ larger for self-mated couple
○ larger for dissimilar material couple
○ smaller for self-mated couple
○ independent of material combination

No, the answer is incorrect.
Score: 0
Accepted Answers:
larger for self-mated couple