Reg. No. :

Question Paper Code: 52192

M.E.DEGREE EXAMINATION, NOV 2016

Elective

CAD / CAM

15PCD502 - TRIBOLOGY IN DESIGN

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain in detail about

(i) Adhesive theory of sliding friction

(ii) Rolling friction   (20)

Or

(b) Explain in detail about the friction properties of metallic and non-metallic materials.

(20)

2. (a) State the law of wear and explain about theoretical wear models in detail.   (20)

Or

(b) Discuss in brief about

(i) Surface treatment

(ii) Surface modifications

(iii) Surface coating   (20)

3. (a) With a case study, give a detailed procedure for selection of lubricant for a particular application. Enhance your procedure with various lubrication standards. (20)

Or

(b) Explain in detail about

(i) magneto hydro dynamic lubrication

(ii) Gas lubrication (20)

4. (a) Derive the two dimensional Reynolds equation for the summer-field boundary condition. (20)

Or

(b) Explain the following with neat sketch

(i) Partial journal bearing

(ii) Full journal bearing

(iii) Fixed bearing

(iv) Pivoted bearing (20)

5. (a) What are the advantages and disadvantages of anti- frictional bearings when compared with oil lubricated bearings. (20)

Or

(b) Write short note on

(i) Contact stresses

(ii) Contact fatigue life

(iii) Oil film effects (20)

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