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Total Number of Pages: 2

B.Tech
PME4D002

4th Semester Regular / Back Examination 2017-18
SURFACE ENGINEERING
BRANCH: MECH
Time: 3 Hours
Max Marks: 100
Q.CODE:C1162

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Part – A (Answer all the questions)

- Q1** Answer the following questions: *multiple type or dash fill up type* **(2 x 10)**
- a) The process of removing oxide from surface is called.....
 - b)process is used to prepare cutting tool inserts.
 - c)coating is used in GI sheets.
 - d)process is used to give nickel coating.
 - e)used for corrosion resistance of iron.
 - f)cleaning process is used to clean hot rolled sheets.
 - g)process is used to increase wear resistance.
 - h)process of painting consumes less paint.
 - i)process is used for Zinc coating.
 - j)non metal is used in surface of springs for better sound proofing.
- Q2** Answer the following questions: *Short answer type* **(2 x 10)**
- a) Differentiate between alkaline cleaning and emulsion cleaning.
 - b) What is Surface preparation?
 - c) What is electroless deposition?
 - d) Differentiate between batch coating and continuous coating process.
 - e) What is a phosphating primer?
 - f) What is the use of enamels?
 - g) What is plasma coating?
 - h) Explain use spray fused coatings.
 - i) What is ultrasonic cleaning?
 - j) Explain Cladding-vacuum deposition.

Part – B (Answer any four questions)

- Q3** a) Explain basic mechanisms of wear. **(10)**
- b) Write about fretting corrosion. **(5)**
- Q4** a) Explain general cleaning process for ferrous, non ferrous metals and alloys. **(10)**

- b)** Differentiate between polishing and buffing shot peening. **(5)**
- Q5 a)** Explain Thermal Spraying Processes. **(10)**
b) Explain principles of electroplating. **(5)**
- Q6 a)** Differentiate between Chemical vapour deposition (CVD) and Physical vapour deposition (PVD). **(10)**
b) Explain properties and applications of electrodeposits. **(5)**
- Q7 a)** Differentiate between Hot Dip Coating and Diffusion Coating. **(10)**
b) Explain principles of cementation. **(5)**
- Q8 a)** Explain different Non-Metallic Coating. **(10)**
b) Write application of aluminum, magnesium, tin, zinc, cadmium, copper and silver in coating. **(5)**
- Q9 a)** Explain Quality Assurance, Testing and Selection of Coatings. **(10)**
b) Write about Industrial applications of engineering coatings. **(5)**