

Day : Saturday
Date : 01/12/2018

W-2018-2265

Time : 10.00 AM TO 01.00 PM
Max. Marks : 60

N.B. :

- 1) All questions are **compulsory**.
- 2) Figures to the right indicate full **marks**.
- 3) Draw neat labeled diagram **wherever** is necessary.
- 4) Assume suitable data if **required**.

Q. 1 Which are important chemical properties? What is their importance on selection of material for any particular application? (10)

OR

Why modification of material property is important? What are the methods of material modification? Explain in details. (10)

Q. 2 What is phase-diagram? How heat treatment varies properties of plain carbon steel? Explain with neat phase diagram. (10)

OR

Which are important properties of lead and lead alloys? Correlate the same with applicability. (10)

Q. 3 What is the composition of paint? What are their properties? (10)

OR

Which are the properties of Nylon-66? How they define applicability of Nylon-66? (10)

Q. 4 a) What is ceramic? How interaction between structures affects ceramic properties? (05)

b) Why glass is called non-crystalline ceramic? Explain the effect of structure on its properties. (05)

OR

Which are special cements? Explain their properties and applicability. (10)

Q. 5 Which are different crystal defects? How they affect material properties and applicability? (10)

OR

a) How does water lead to chemical corrosion? (05)

b) What is electro chemical failure? How does it lead to property loss? (05)

Q. 6 What is coating? What are the precautions required for surface preparation before coating? How coating is used in material failure prevention? (10)

OR

What is alloy? How alloy formation helps in property enhancement and failure prevention? (10)

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