



RM-6523

B. E. II (Sem. IV) (Instrumentation & Control) Examination

May / June – 2010

Properties of Engineering Material

Time : 3 Hours]

[Total Marks : 100

Instruction :

(1)

नीचे दशावलि निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="checkbox"/> B. E. 2 (Sem. 4) (Instrumentation & Control)	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="checkbox"/> Properties of Engineering Material	<input type="text"/>
Subject Code No. : <input type="text" value="6"/> <input type="text" value="5"/> <input type="text" value="2"/> <input type="text" value="3"/>	Section No. (1, 2,.....) : <input type="text" value="Nil"/>
Student's Signature	

- (2) Attempt all questions.
(3) Figures to the right indicates full marks.
(4) Answer of two sections must be written in separate answer books.

SECTION 1

- Q-1(A) Give the answers in brief (10)
- | | | |
|---|---|---|
| 1 | define electron affinity | 2 |
| 2 | Explain slip with diagram | 2 |
| 3 | Give the formula and unit of kinematic viscosity. | 2 |
| 4 | What is an asperity? | 1 |
| 5 | Define density of packing. | 1 |
| 6 | Explain the term 'static friction'. | 2 |
- Q-1(b) Explain sliding friction. 8
- Q-2 (a) Explain B-H curve with a neat diagram for a ferromagnetic material. 8
- (b) Classify magnetic materials and explain in detail. 8
- OR**
- Q-2(a) Explain the following terms : 8
- | | |
|---|----------------------|
| 1 | Ionization potential |
| 2 | Bond strength |
| 3 | Bond energy |
| 4 | Ionic radii |

Q-2(b)	1) state the laws of friction 2) explain rolling friction.	3 5
Q-3	Attempt any two 1 Explain energy levels for hydrogen atom 2 Explain thermoelastic effect 3 Explain fluid and boundry lubrication.	16

SECTION 2

Q-4(a)	Give answers in brief 1 Explain thermal conductivity 2 How can curie temperature of ferromagnetic materials be changed? 3 Define erosion corrosion. 4 Explain the following terms : 1) bond energy 2) fretting corrosion 3) ionization potential	1 2 1 6
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Q-4(b)	Explain electrode potential.	8
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Q-5(a)	Give the relation between parameters specified below : 1) permeability and susceptibility 2) magnetic induction, permeability and magnetic field	4
(b)	Define the following : 1) magnetization 2) ferromagnetism	4
c)	Describe quenching and tempering of materials	8

OR

Q-5(a)	Give the relation between the parameters specified below : 1) magnetization, magnetic field and magnetic induction. 2) Susceptibility, applied magnetic field and magnetization.	4
(b)	Define the following : 1) permeability 2) magnetic field strength	4
c)	Explain heat capacity.	8

Q-6	Attempt any two 1) Concentration cell corrosion 2) Explain heat capacity of substance 3) Explain i) magnetostriction ii) anisotropy	16
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