

P44/P45/CMP301/EE/20170114

Time : 3 Hours

Marks : 80

Instructions :

1. All Questions are Compulsory.
 2. Each Sub-question carry 5 marks.
 3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
 4. Question paper of 80 Marks, it will be converted in to your programme structure marks.
-

1. Solve any **four** sub-questions.
 - a) Define the following terms : (One Mark Each) 5
 - i) $N\text{-s/m}^2$
 - ii) V_c
 - iii) η
 - iv) SI unit
 - v) CGS unit
 - b) Describe Viscosity with an example. 5
 - c) Explain the following terms using expression. 5
 - i) Stokes law
 - ii) Reynolds number
 - d) Describe the Advantages of NDT. 5
 - e) Explain the term Valence Electron with types and example. 5
2. Solve any **four** sub-questions.
 - a) Give the names of Element as per Mass numbers given below : 5
Atomic Numbers = 1, 3, 4, 7, 9, 11, 13, 16, 18, 19
 - b) Explain ionic bond formation with any one example. 5
 - c) Differentiate Electrovalent and Covalent bond. 5
 - d) Write a descriptive note on Metallic Bonding. 5

- e) Define the following terms : (One Mark Each) 5
- i) Y
 - ii) N/m^2
 - iii) K
 - iv) Atomic Mass Number (A)
 - v) E

3. Solve any **four** sub-questions.

- a) Define the following terms : (One Mark Each) 5
- i) NDT
 - ii) MPT
 - iii) CT
 - iv) PIPA
 - v) NR
- b) A plate of area 10 cm^2 is separated from a large plate by a layer of glycerine 1 mm thick. If the viscous coefficient of glycerine 1 mm thick. If the viscous coefficient of glycerine is 20 poise, What force is required to keep the plate moving at 1cm/s. 5
- c) Describe Young's Modulus with expressions. 5
- d) State the applications of Radiography. 5
- e) Describe Hooke's Law with expressions. 5

4. Solve any **four** sub-questions.

- a) Define the following : (One Mark Each) 5
- i) Atom
 - ii) Nucleus
 - iii) Neutron
 - iv) Proton
 - v) Electron
- b) Describe Stress and Strain with expressions. 5
- c) Describe the Advantages Ultrasonic Testing. 5
- d) Describe the Advantages Polyurethane. 5
- e) Write down the importance properties of thermocols. 5

