

S. B. Roll. No.....

ENGINEERING MATERIALS
3rd Exam/Mech./3053/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Fill in the blanks.

15x1=15

- a. Metals are _____ substances.
- b. Area under stress strain curve shows _____
- c. Smallest component of space lattice is known as _____
- d. Slip represents _____ deformation of the crystal.
- e. Gears, shafts and axles are made of _____
- f. High carbon steel has _____ structure.
- g. Cast iron is refined from _____ in cupola furnace.
- h. A solid solution is a _____ system.
- i. Heat treatment is done to change the _____ composition.
- j. Thermoplastics have _____ type of structures.
- k. Plastics are _____ conductor of electricity.
- l. _____ are metal ceramic composites.
- m. Photovoltaic materials convert light to _____
- n. Nylon and Teflon are _____ materials.
- o. The tin based alloys are called _____

SECTION-B

Q2. Attempt any six questions.

6x5=30

- i. Define non metals. What are their characteristics?
- ii. Differentiate between slip and twinning.
- iii. What are the advantages and disadvantages of Bessemer's process?
- iv. What do you mean by solid solution? Give its examples.
- v. Discuss the various additives used in plastics.
- vi. Give some applications of ceramics.
- vii. What are the properties of white metal or babbitt metal?

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. What are adhesives? Name the different types of adhesives with their uses.
- b. Why plastic coating is done on metal surface? Explain different methods of plastic coating.
- c. Describe with a neat sketch the iron-carbon equilibrium diagram.
- d. Explain different types of heat treatment furnaces.
- e. Write the detailed process of manufacturing pig iron in blast furnace.