

MODEL QUESTION PAPER - II

Time : 3 Hrs.

Max.marks : 75

Part - A

Marks : 5x2=10

i) Answer any five questions.

ii) All questions carry equal marks.

1. Define : Radiation.
2. Define : Co-efficient of conductivity.
3. State first law of thermodynamics.
4. Define : Joule thompson effect.
5. Define : Refractive index.
6. Write abbreviation of LASER.
7. Define : Super conductivity.
8. What is doping?

Part-B Marks: 5x3=15

Note : i) Answer any five questions.

ii) All questions carry equal marks:

9. Explain C_p greater than C_v .
10. Define : Specific heat capacity of a gas at constant pressure.
11. State second laws of thermodynamics.
12. Write the disadvantages of cascade process
13. State laws of reflection.
14. Write any three properties of LASER.
15. State Flemming's left hand rule.
16. What is extrinsic semiconductor ? Give examples.

- Note :** i) Answer all questions from each divisions.
ii) All questions carry equal marks.

- 17.a) Explain conduction, convection and radiation.
b) Derive the expression for the pressure of a gas on the basis of Kinetic theory of gases.
c) Calculate the value of "R" from the gas equation $PV=RT$.
- 18.a) Explain the concept of carnot engine.
b) Describe with a neat sketch the Linde's process of liquefaction of air.
c) Write the advantages and disadvantages of renewable energy sources.
- 19.a) Explain the application of total internal reflection in optical fibre cable as a wave guide.
b) Explain the construction and working of Ruby Laser.
c) Explain the working of RADAR with a neat block diagram.
- 20.a) Derive the condition for balancing wheatstone's bridge network.
b) A current of 1A passing through a copper voltameter for one hour liberates 1.2gm of copper. Calculate the electro-chemical equivalent of copper.
c) Describe the construction and working of a moving coil galvanometer.
- 21.a) Explain P-type and N-type semiconductors.
b) Explain the working of fullwave rectifier using PN-junction diodes.
c) Explain NOR and NAND gates with symbols and truth tables.