



# TAMIL NADU OPEN UNIVERSITY

Chennai - 15  
School of Science

Programme Code No : 181  
Programme Name : B.Sc., Physics  
Course Code & Name : BPHY-21: Heat and Thermodynamics  
Batch : AY 2019-20  
No.of Assignment : One Assignment for Each 2 Credits  
Maximum CIA Marks : 25 ( Average of Total no of Assignments)

## ASSIGNMENT -I

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Explain Debye theory of heat capacity.
2. Derive an expression for Maxwell distribution of molecular velocity
3. Derive an expression for thermal conductivity of gases

## ASSIGNMENT -II

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Derive an expression for Clausius specific latent heat equation
2. State and explain Carnot engine
3. Derive an expression for entropy of perfect gas using T-S diagram

## ASSIGNMENT -III

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Describe Lee's disc method to find the coefficient of thermal conductivity of a poor conductor.
2. How will you determine the specific heat of liquid by Newton's law of cooling
3. Define solar constant. How is it experimentally determined? Comment on the source of energy in the sun

## ASSIGNMENT -IV

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Explain Maxwell distribution law
2. Derive an expression for fermi energy using FD statistics.
3. Discuss the application of photon gas

1. Date of Publication : 07.01.2020
2. Last date of submission of answer script by the student to the study centre /LSC : 05.04.2020
3. Last date of submission of marks by the examiner to the study centre/LSC : 12.04.2020
4. Last date of submission of marks by the study centre/LSCs to the office of C.O.E. on or before 25.04.2020



# TAMIL NADU OPEN UNIVERSITY

Chennai - 15  
School of Science

Programme Code No : 181  
Programme Name : B.Sc., Physics  
Course Code & Name : BPHY-22: ELECTRICITY AND MAGNETISM  
Batch : AY 2019-20  
No. of Assignment : One Assignment for Each 2 Credits  
Maximum CIA Marks : 25 ( Average of Total no of Assignments)

## ASSIGNMENT - I

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Explain the applications of gauss law.
2. Derive an expression for electric potential due to a uniformly charged non-conducting solid sphere
3. Discuss in detail about Thermodynamics of thermocouple.

## ASSIGNMENT - II

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Derive an expression for self-induction of long solenoid.
2. Explain Experimental determination of mutual inductance
3. Explain Measurement of high resistance by leakage

## ASSIGNMENT - III

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Explain principle, construction and working of transformer
2. Obtain an expression for impedance and current in series LCR circuit. Deduce an expression for the frequency of an LCR series resonating circuit?
3. Explain the phenomena of resonance and parallel resonance circuit

## ASSIGNMENT - IV

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Derive the relationship between B,H and M
2. Explain Curie's law. What are the importances of hysteresis curve? Explain.
3. Discuss the Energy loss due to Hysteresis.

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# TAMIL NADU OPEN UNIVERSITY

Chennai - 15  
School of Science

Programme Code No : 181  
Programme Name : B.Sc., Physics  
Course Code & Name : BCHEA-02: GENERAL CHEMISTRY  
Batch : AY 2019-20  
No.of Assignment : One Assignment for Each 2 Credits  
Maximum CIA Marks : 25 ( Average of Total no of Assignments)

## ASSIGNMENT -I

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Discuss about the following
  - a. Autocatalysts (b)Positive/Negative catalysts (c) Homogeneous/Heterogeneous catalysts
  - b. Natural rubber
2. Describe in details about the Volumetric analysis.
3. Write short notes on Chemical bonds with its types.

## ASSIGNMENT -II

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Write about the storage and handling of the following
  - a. Vaporizable chemicals
  - b. Inflammable chemicals
  - c. Carcinogenic chemicals
  - d. Poisonous chemicals
2. Discuss the following.
  - a. Standard solution
  - b. Indicators
  - c. Titration
  - d. Equivalent/End points
3. Discuss in details about the Mass units and purification of Organic compounds with Examples.

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