



9153549620 9153549620

dumkalcollege@gmail.com

Website: www.dumkalcollege.org

# DUMKAL COLLEGE

P.O- Basantapur, P.S- Dumkal, Dist.- Murshidabad, West Bengal, Pin- 742406  
(Govt. Aided, Affiliated to the: University of Kalyani Included under section 2(f) & 12 (B) of UGC Act.)

NOTICE

13.07.2023

## For Submission of assignments (10 Marks per paper)

All the students of **Semester-IV Chemistry Honours course and Semester-IV Programme Course**, are hereby instructed to submit their assignments according to the following topics. The hard copy of the assignments must be submitted to the department **within 25/07/2023**. **No assignments will be accepted after the due date.**

### • Assignments for Semester-IV Chemistry Honours Course

#### **Inorganic Chemistry (CC-9):**

- (i) What is the meaning of half-life of radioactive elements? (5 Marks)
- (ii) Derive the equation  $t_{1/2} = 0.693/k$  (5 Marks)

#### **Physical Chemistry (CC-8):**

- (i) Derive Duhem-Margules equation. Show that if in binary solution, component **A** obeys Raoult's law then component **B** also obey Raoult's law. (5 Marks)
- (ii) Briefly Discuss about phase diagram of CO<sub>2</sub> system and calculate degrees of freedom of every phase. (5 Marks)

#### **Organic Chemistry (CC-10):**

- (i) Define chromophores and auxochromes; Bathochromic and Hypsochromic shifts. (5 Marks)
- (ii) Briefly explain factors affecting stretching frequencies: effect of conjugation, electronic effects, mass effect, bond multiplicity, ring-size, solvent effect. (5 Marks)

### • Assignments for Semester-IV GE paper

#### **Chemistry (GE Course-2):**

- (i) Discuss Shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples from s and p block elements of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. (10 Marks)

### • Assignments for Semester-IV Programme Course

#### **Chemistry (Programme Core Course-4):**

- (i) Define Transport Number. (2 Marks)
- (ii) State principles of Hittorf's and Moving-boundary method and explain. (4 + 4 Marks)

By Order HOD  
Department of Chemistry