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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.)

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Notice

20.11.2026

All the Students of Semester V of Department of Chemistry are asked to submit the assignment given below on or before **01/12/2026.**

SEM V (CCF-NEP)

CHEM-MAT-6

1. Construct the molecular orbital energy level diagram for NO, CN^- molecule and hence calculate bond order. Also discuss its magnetic behavior.
2. Synthesis, structural aspects and applications of silicones and phosphazines.
3. How to get pure titanium from impure titanium? Describe the process with the chemical reaction involved in it.
4. Explain the basic postulates of VSEPR theory with suitable example. Explain the shapes and geometry of NH_3, H_2O, SF_4, ClF_3 and XeF_2 on the basis of VSEPR theory.
5. Name the two ores of Ni. Draw the flow chart of Ni extraction from its ore. Discuss the Mond's process.

CHEM-MAT-7:

1.Define relative lowering of vapour pressure. Derive the mathematical expression for it in terms of mole fraction. (5 Marks)
2.Derive the relationship between van't Hoff factor and degree of dissociation. (5 Marks)

CHEM-MIT- 3: DA, SK

1) Show that for an ideal gas *P—V* curve for adiabatic reversible process is steeper than the same for isothermal reversible one. 3
2) Show that isothermal free expansion of an ideal gas has to be adiabatic. 2
3) How can you distinguish between primary (1°) secondary(2°) and tertiary (3°) alcohols using the Lucas test? Explain with examples. 2
4) Write a short note on the Cannizzaro reaction.

Head of the Department
Department of Chemistry
Dumkal College, Murshidabad