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**D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1****SEMESTER EXAMINATIONS**

APRIL - 2016

15CPCH2C

**PHYSICAL CHEMISTRY - II****Time : 3 Hrs****Max.Marks : 75****SECTION-A (5x 6 =30)****Answer ALL the questions.**

1. (a) Explain in detail about the consecutive reaction.  
(Or)  
(b) Write notes on heterogeneous catalytic reaction.
2. (a) Explain in detail about the effect of substrate concentration on enzyme catalyzed reaction.  
(Or)  
(b) Derive Fermi – Dirac statistics.
3. (a) Explain Translational partition function.  
(Or)  
(b) Discuss Debye theory of heat capacity of solids.
4. (a) Explain Franck – Condon Principle.  
(Or)  
(b) Explain excimers and exciplexes.
5. (a) Explain photovoltaic and photogalvanic cells.  
(Or)  
(b) Explain Photoredox and Photosubstitution reactions with examples.

**SECTION-B (3x15 =45)****Answer any THREE of the following questions.**

6. Explain chain length reaction and Rice Herzfeld mechanism.
7. (a) Derive Bose – Einstein statistics (10)  
(b) Compare Maxwell – Boltzmann Distribution law with B.E and F.D statistics. (5)
8. Derive Sekur tetraode equation for the entropy of a monoatomic gas.
9. Draw and discuss the Jablonski diagram for depicting various photophysical processes.
10. Write notes on
  - i) Photoassisted electrolysis of water. (5)
  - ii) Photoisomerisation and solar energy conversion with examples. (10)

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