

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc.NFSMD - END SEMESTER EXAMINATIONS - APRIL 2025
SEMESTER - I

20UFMAT1001 - Allied Chemistry - I

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. a) Illustrate the common ion effect with an example. (3)
b) What is the role of a buffer in biological systems? (2)
2. Describe how reverse osmosis works and its significance in water purification.
3. a) Differences between addition and substitution reactions. (3)
b) Explain condensation reactions with an example. (2)
4. Give a detailed mechanism for the electrophilic substitution of furan.
5. Briefly explain the fundamental laws of photochemistry.
6. Analyse and compare Water Gas and Natural Gas.
7. a) What causes thiophene to be more aromatic than furan? (3)
b) How does the basicity of pyridine differ from that of pyrrole? (2)
8. Infer the following concepts with suitable example.
i) electrophiles ii) nucleophiles iii) free radicals

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Derive the Henderson equation and explain its importance.
10. a) Discuss the preparation and uses of (6)
(i) Urea (ii) Triple super phosphate
b) Compare temporary hardness and permanent hardness of water. (4)
11. a) Describe the type of hybridization present in ethylene (C_2H_4). (5)
b) Explain the mechanism of the sulphonation reaction in benzene. (5)
12. Discuss the preparation, properties and uses of
(i) pyrrole (ii) pyridine
13. Examine the following terms (3+3+4)
i) Chemiluminescence ii) Phosphorescence iii) Photosensitisation
