

(FOR THE CANDIDATES ADMITTED

SUBCODE

25PCY2E1

DURING THE ACADEMIC YEAR 2025-2026 ONLY)

REG.NO. :

N.G.M. COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2026

MSC CHEMISTRY

SEMESTER: II

MAXIMUM MARKS: 75

TIME:3 HOURS

GREEN CHEMISTRY, RESEARCH METHODOLOGY AND CYBER SECURITY

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

(K1)

1. The principles of green chemistry include
 - a) Atom economy
 - b) safer solvent usage
 - c) hazardous chemical synthesis
 - d) both a and b
2. Quaternary ammonium salt is an example of
 - a) Auto catalyst
 - b) biocatalyst
 - c) negative catalyst
 - d) phase transfer catalyst
3. When certain pages of a book is reproduced with permission from the author, it is called as
 - a) acopyright
 - b) palagarism
 - c) patent
 - d) IPR
4. Consolidation of 100 research articles in a single write up and publishing for a topic is Called
 - a) Copyright
 - b) review article
 - c) original research article
 - d) news letter
5. among the following which are the pillars of information security
 - a) Confidentiality
 - b) Integrity
 - c) Authenticity
 - d) All the above

ANSWER THE FOLLOWING IN ONE (or) TWO SENTENCES (K2)

6. Explain the term atom economy in green chemistry
7. What are ionic liquids? Mention an example.
8. List the basic structure of a scientific paper.
9. Name any four malicious software's
10. What are the functions of a firewall in computers?

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Explain solvent less reactions with examples.

(OR)

b) Describe the microwave synthesis of any one the organic reaction with example

12. a) List the challenges faced by chemist in designing safer chemical reactions.

(OR)

b) Explain the role of water as a green solvent.

ETHICAL PAPER

(CONTD..2)

13. a) Describe the criteria's of a good research.
(OR)
b) Explain the terms IPR and patents with examples.
14. a) Explain the terms Confidentiality, integrity and availability in cyber security.
(OR)
b) Explain the functions of malicious software with example.
15. a) Explain vulnerability auditing in cyber security,
(OR)
b) Explain the term control flow integrity in cyber security,

SECTION – C

(5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(K4 (Or) K5)

16. a) Discuss the twelve basic principles of green chemistry in detail.
(OR)
b) Explain atom efficient, economy and atom efficient processes with example.
17. a) Discuss the synthesis of any two organic reactions using sonication technique.
(OR)
b) Discuss the role of PTC in organic synthesis. Mention two PTC reactions
18. a) Explain the terms Web of science, Scopus, citations, H – Index, and I-10 Index.
(OR)
b) Discuss the different types of scientific writing for various publications
19. a) Discuss how authentication process and password systems help in protecting windows security.
(OR)
b) Illustrate the types of memory exploits known.
20. a) Discuss in detail the Software security features with examples.
(OR)
b) Discuss in detail the Network security features available in a system
