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Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2022

First Degree Programme Under CBCSS

Chemistry

Elective Course

CH 1661.1 –– SUPRAMOLECULAR, NANO PARTICLES AND GREEN CHEMISTRY

(2017 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions. **Each** question carries **1** mark.

1. Write one example for nano carbon materials.
2. Define atom economy.
3. What is Hydrogen bonding?
4. What is the hybridization of carbon in CNT?
5. Write any two applications of SEM.
6. What are the values of ΔG, ΔH, ΔS for hydrophobic interaction?
7. Expand SAMS.
8. What are quantum dots?

P.T.O.

9. Write any two advantages of SCF.

10. Which gas is released in Bhopal gas tragedy?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks.

11. What are molecular tweezers?

12. Write two medical application of nano materials.

13. Write a note on fullerenes.

14. Give any two lab safety signs with its meaning.

15. Define Carbon efficiency.

16. What are the optical properties of nanoparticles?

17. Define host and guest in supramolecular chemistry.

18. What are limitations of conventional waste management?

19. Mention the advantages and disadvantages of AFM.

20. Point out difference between single walled and multiwalled nanotubes.

21. Write a note on Bhopal Tragedy.

22. What are Secondary electrons?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. **Each** question carries **4** marks.

23. Write a note on safer solvents and auxiliaries.

24. What are microscale experiments and why they are important?

25. Briefly describe about properties of nano materials.

26. Explain about uses of nanomaterial in computer sensors and electronic devices.

27. Write a note on Bio diesel. Mention its advantages.

28. Explain methods for preparation of SAM.

29. Write a note on hydrothermal method for synthesis of nanoparticle.

30. What are ionic liquids and their advantage as green solvents?

31. Explain Ionic bonding and Vander walls interaction.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks.

32. (a) Explain the 12 principles of green chemistry. **10**

    (b) Explain the principle of microwave oven and microwave assisted organic synthesis with an example **5**

33. (a) Write a note carbon nano tube. **8**

    (b) Briefly describe the applications of STM. **7**

34. Write a note on (a) Cyclophanes (b) Cyclodextrins (c) Calixarenes.

35. Describe about the various aspects of molecular recognition in structure of protein.

(2 × 15 = 30 Marks)

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