K21U 6787

I Semester B.Sc. Degree (C.B.C.S.S.– O.B.E. – Regular/ Supplementary/ Improvement) Examination, November 2021
(2019 Admission Onwards)
COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/POLYMER CHEMISTRY
1C01CHE/PCH – Chemistry For Physical and Biological Sciences

Time : 3 Hours

Total Marks : 32

Instruction : Answers can be written only in **English**.

SECTION – A

(Very short answer type. **Each** carries **1** mark. Answer **all 5** questions)

1. What is meant by diagonal relationship ?

2. What is de Broglie wavelength for an electron travelling with a speed equal to 1% of the speed of light ?

3. Which p orbital is involved in sp^2 hybridization ?

4. What is Green house effect ?

5. What are the different segments of environment ?

SECTION – B

(Short answer type. **Each** carries **2** marks. Answer **4** questions out of 6)

6. State and explain modern periodic law.

7. Define Ionisation enthalpy.

8. How will you explain the bond angle of H_2O using VSEPR theory ?

9. How detergents cause water pollution ?

10. Write the effect of chlorofluorocarbon on ozone layer.

11. Explain Arrhenius and Lowry-Bronsted concepts of acids and base.

P.T.O.

SECTION – C

(Short essay type. **Each** carries 3 marks. Answer 3 questions out of 5)

12. Write Schrodinger wave equation and explain the terms.

13. Discuss hydrolysis between a strong base and a weak acid.

14. Discuss the environmental effect of pesticides.

15. Write the MO electronic configuration of N_2, O_2 and calculate the bond order.

16. What is the type of hybridization in the formation of BF_3 ? Discuss.

SECTION – D

(Long essay type. **Each** carries 5 marks. Answer 2 questions out of 4)

17. Define atomic radii, ionic radii and covalent radii. State how they vary down a group of periodic table.

18. Explain solubility product and common ion effect. Discuss the hydrolysis of strong acid and strong base.

19. How to determine water quality parametes ? Explain its effects.

20. a) Explain H-Bonding, types of hydrogen bonding using examples.

    b) Discuss the hydrogen bonding in water.

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