(Pages : 3) **D – 2525**

Reg. No. : .....

Name : .....

Fifth Semester B.Sc. Degree Examination, December 2017
(First Degree Programme Under CBCSS)
Open Course – I
CH 1551.1 : ESSENTIALS OF CHEMISTRY
(2013 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in **one** word to **maximum of two** sentences. **Each** question carries **1** mark.

1. Write the electronic configuration of chromium (z = 24).
2. What are the possible values of quantum numbers l, if n = 4) ?
3. What are isotopes ? Give one example.
4. Name the purine bases found in RNA.
5. Name any two inorganic polymers.
6. Pick out homopolymers from the following Bakelite, Nylon 6, Nylon 66, PVC.
7. Write Pauli's exclusion principle.
8. What are tranquilizers ?
9. Name any two green house gases.
10. Define Hund's rule of maximum multiplicity. **(10×1=10 Marks)**

SECTION – B

Answer **any eight** questions. Short answer type. **Each** question carries **2** marks

11. State and explain Aufbau principle.
12. The second ionization energy of sodium is very high as compared to its first ionization energy. Why ?

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13. What are the different types of radio active rays ? How they can be distinguished ?

14. Explain what is vulcanization.

15. State and explain group displacement law.

16. What are the main sources of Vitamin K ? What are its functions ?

17. Distinguish between DNA and RNA.

18. What are dyes ? Give one example for a nitro dye.

19. Draw the structure of TNT and TNG.

20. What is rock dating ?

21. What is Eutrophication ?

22. Explain cleansing action of soaps. **(8×2=16 Marks)**

SECTION – C

Answer **any six** questions. Short essay type. **Each** question carries **4** marks.

23. Discuss the limitations of Bohr theory of atom.

24. Explain the term artificial ratio activity with suitable examples.

25. Write a short note on radio carbon dating.

26. How polymers are classified on the basis of their structure ?

27. What are enzymes ? Give two examples and characteristics of enzymes.

28. Write a short note on cortical hormones.

29. Discuss various factors affecting purity of water.

30. What is green house effect ? Explain its consequences.

31. Discuss the pollution of air by oxides of C, N and S and particulate matter.

(6×4=24 Marks)

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SECTION – D

Answer **any two** questions. Long essay type. **Each** question carries **15** marks.

32. Define the following and explain their trends in a period and in a group.
    a) Electron affinity
    b) Electro negativity
    c) Ionization energy
    d) Atomic radii

33. i) Discuss the application of following polymers.
        a) Bakelite
        b) Melamin
        c) Nylon-6
    ii) Name two synthetic rubbers. Name their monomers and explain their structure and uses.

34. a) Explain the term hard soaps and soft soap.
    b) Explain the disadvantages of hard water. What are the different methods for removing hardness of water ?

35. Write short notes on :
    a) Acid rain
    b) Pesticide pollution
    c) Ozone layer depletion and its chemistry.

(2×15=30 Marks)

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