



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc.DEGREE EXAMINATION – PHYSICS& MATHEMATICS

THIRD SEMESTER – NOVEMBER 2018

CH 3200/ CH 3202- ADV. GENERAL CHEMI. FOR PHYS. & MATHS /

GEN. CHEMI. FOR PHYS. & MATHS

Date: 26-10-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

Part-A

Answer ALL questions.

(10 × 2= 20)

1. Define ionic radius.
2. Why does ice float on water?
3. What are chromophores?
4. What is aspirin? Mention its uses.
5. State the first law of thermodynamics.
6. Why is the heat of neutralization between a strong acid and a strong base always a constant?
7. What is the effect of temperature on enzymatic reactions?
8. Draw the open structures of glucose and fructose.
9. Distinguish between renewable and non-renewable sources of energy.
10. Define octane number.

Part-B

Answer any EIGHT questions.

(8 × 5= 40)

11. Discuss the theory of hydrogen bonding.
12. Explain ion exchange method of separation of lanthanides.
13. Describe the classification of dyes based on the mode of dyeing process.
14. Define the following and cite an example for each.
(a) Antibiotics (b) Anti-inflammatory drugs
15. How naphthalene is prepared by Haworth synthesis?
16. Derive Kirchoff's equation.
17. What are primary and secondary electrodes? Cite examples.
18. Explain the calculation of lattice energy of an ionic compound by Born-Haber cycle.
19. Discuss the properties of enzymes.
20. Describe a method to determine N-terminal amino acid of proteins.
21. Compare nuclear fusion and nuclear fission reactions.
22. Discuss the various types of soil.

Part-C

Answer any FOUR questions.

(4 × 10= 40)

- 23a. Explain the classification of hydrogen bonding with suitable examples.
b. Write a note on lanthanide contraction. **(6+4)**
24. Suggest a method of preparation for the following:
(a) furan (b) congored (c) sulphanilamide **(2+4+4)**
- 25a. Describe the conductometric titration between a weak acid and a strong base.
b. State and explain Hess's law of heat of summation. **(5+5)**
26. Discuss the primary and secondary structures of proteins.
27. Explain the fractional distillation of petroleum and mention the uses of any four fractions.
28. Discuss the role of macro and micro nutrients in the growth of plants.

