

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2018
(Fourth Semester)

Branch – **CHEMISTRY**

GENERAL CHEMISTRY - IV

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 2 = 20)

- 1 Which type of substances are extracted using a solvent?
- 2 Define R_f value.
- 3 List out various chemical methods of refining of metals.
- 4 Define (a) Gangue and (b) Concentrate.
- 5 What happens when nitroethane is reduced with Sn / HCl?
- 6 What is the major product formed when aniline is treated with nitrous acid at 0 - 5°C?
- 7 What is an asymmetric carbon? Give one example.
- 8 What do you mean by asymmetric synthesis?
- 9 What is flash point?
- 10 What do you understand by the term “antiknocking”?

SECTION - B (25 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Explain the theories of paper chromatography and gas-liquid chromatography.
OR
b Write the procedure adopted in thin layer chromatography.
- 12 a Explain, with a sketch, the magnetic separation of ores.
OR
b Explain the electrolytic method of reduction of mineral to the metal.
- 13 a Compare the basicity of methylamine, aniline and benzylamine.
OR
b Write a note on coupling reaction.
- 14 a Describe the methods used for resolving racemic mixture into optically active forms.
OR
b Write a short note on geometrical isomerism in oximes.
- 15 a Define octane number. How can we increase octane number of the fuel?
OR
b Explain the term cracking. Discuss various types of cracking.

Cont ...

SECTION - C (30 Marks)Answer any **THREE** Questions**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Explain extraction using Soxhlet apparatus with a neat diagram.
- 17 Write briefly the occurrence, extraction and metallurgy of iron.
- 18 How will you separate a mixture of primary, secondary and tertiary amines?
- 19 Using the symbols R and S, specify and justify the configuration of each of the following:
- (a) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H} - \text{C} - \text{Br} \\ | \\ \text{Cl} \end{array}$ (b) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H} - \text{C} - \text{NH}_2 \\ | \\ \text{C}_6\text{H}_5 \end{array}$ (c) $\begin{array}{c} \text{CHO} \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{CH}_2\text{OH} \end{array}$ (d) $\begin{array}{c} \text{NH}_2 \\ | \\ \text{CH}_3 - \text{C} - \text{H} \\ | \\ \text{COOH} \end{array}$
- 20 What is petroleum? How is it processed?

Z-Z-Z

END