

AU-320

M.Sc. (Part—I) Semester—II (CBCS Scheme) Examination
CHEMISTRY (New)
(Optical Methods and Environmental Chemistry)
Paper—VIII

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory and carry equal marks.
 (2) Use of scientific calculator is allowed.

1. (a) What are photometric titrations ? Explain with one example. 5
- (b) Write short note on refractometry. 5
- (c) A solution absorbs 20% of incident radiation. Calculate percentage absorbance if the concentration is doubled. 6

OR

- (p) Explain working of single beam spectrophotometer with diagram. 5
- (q) Compare colorimeter with spectrophotometer. 5
- (r) Explain principles of fluorimetry and turbidimetry. 6
2. (a) Give analytical applications of AAS. 5
- (b) Give limitations of flame photometry. 5
- (c) Compare 'molecular spectra' with 'atomic spectra'. 6

OR

- (p) Explain working of premix burner and give its advantages. 5
- (q) Explain 'chemical' and 'ionization' interferences in FES. 5
- (r) Compare AAS with FES. 6
3. (a) How do you estimate Hg in water sample ? 5
- (b) Give various sources of water pollution. 5
- (c) Explain effects of lead and arsenic pollution in water. 6

OR

(p)	How do you estimate alkalinity of water sample ?	5
(q)	Compare COD and BOD in detail.	5
(r)	How is DO (Dissolved Oxygen) content of water determined ? Explain.	6
4.	(a) How is SO ₂ content of air determined ? Explain.	5
	(b) Explain reasons and consequences of greenhouse effect.	5
	(c) How is ammonia concentration in air determined ?	6
	OR	
(p)	Explain effects of air pollution.	5
(q)	What is 'smog' ? Give its types and effects.	5
(r)	What is role of CO ₂ in atmosphere ? How is it estimated ?	6
5	(a) Discuss composition of soil in detail.	6
	(b) What is meant by residual analysis ? How is it carried out for pesticides ?	5
	(c) Explain hazardous effects of ionizing radiations.	5
	OR	
(p)	Explain degradation of pesticides in nature.	5
(q)	Explain effects of DDT. How is it estimated in soil ?	5
(r)	Give controlling measures from radiation exposure.	6