

Total number of printed pages-2

53 (IE 505) ANIN

2018

ANALYTICAL INSTRUMENTATION

Paper : IE 505

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions out of **seven**.

1. (a) With a neat diagram, explain the technique used to find the concentrations of Na, K and Ca in the blood plasma. 12
- (b) Define Chromatography. Write its classification. Explain *any two* principles of operation in it. 8
2. (a) With a neat diagram, explain the working of GC. 8

Contd.

- (b) Explain *any two* types of detectors used in GC. 12
3. Explain *any three* types of gas analyzers. 20
4. (a) Explain *two* techniques used to measure CO in air. 14
- (b) Explain Biosensor. 6
5. (a) Explain the following mass spectrometers : 14
- (i) Time-of-flight
- (ii) Quadrupole.
- (b) Explain digital pH meter. 6
6. (a) Explain *any two* types of detectors in LC. 12
- (b) Explain Magnetic Deflection Mass Spectrometer. 8
7. Write short notes on : 4×5=20
- (a) Sulphur detector in GC
- (b) Double beam photometer
- (c) Single beam photometer
- (d) Electrical conductivity detector in LC.