This question paper contains **2** printed pages]

# Y—188—2019

## FACULTY OF SCIENCE

## B.Sc. (Third Year) (Sixth Semester) (Backlog) EXAMINATION

## OCTOBER/NOVEMBER, 2019

## (CBCS Pattern)

ANALYTICAL CHEMISTRY

Paper XIV (DSE-AC–VI) (Elective)

(Physical Methods in Analytical Chemistry)

**(Tuesday, 26-11-2019)** **Time : 10.00 a.m. to 12.00 noon**

*Time*—2 *Hours* *Maximum Marks*—40

*N.B.* :— (*i*) Attempt *All* questions.

(*ii*) *All* questions carry equal marks.

(*iii*) Figures to the right indicate full marks.

1. Attempt any *four* of the following : 4×2=8

(*a*) What are the different types of microscope ?

(*b*) Explain laser scanning confocal microscopy.

(*c*) Explain electrophoretic techniques.

(*d*) Give any *four* applications of eminofluorescence.

(*e*) What is ultracentrifugation ?

(*f*) What is phosphorescence spectroscopy ?

2. Attempt any *two* of the following : 2×4=8

(*a*) What is fluorescent microscopy ?

(*b*) Explain low and high voltage electrophoresis.

(*c*) What is preparative and analytical centrifuge ?

P.T.O.

3. Attempt any *one* of the following : 1×8=8

(*a*) Explain principle, working and application of atomic force microscope.

(*b*) What is SRID ? Give their applications.

4. Attempt any *two* of the following : 2×4=8

(*a*) What are differential centrifugation ? Give the types of centrifuge machine.

(*b*) Give in detail about atomic emission spectrometer.

(*c*) Explain various types of applications of surface plasma resonance in forensic biology.

5. Attempt any *one* of the following : 1×8=8

(*a*) Explain sedimentation velocity and sedimentation equilibrium methods.

(*b*) What is NMR and ESR spectroscopy ?