

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY & ADV. ZOOLOGY

THIRD SEMESTER – NOVEMBER 2013

PH 3206 - PHYSICS FOR BIOLOGY

Date : 13/11/2013

Dept. No.

Max. : 100 Marks

Time : 9:00 - 12:00

PART - A

Answer **ALL** questions

(10 x 2 = 20)

1. Define Surface Tension of liquid and give its unit.
2. What are the factors affecting viscosity?
3. Give any four characteristics of Laser action.
4. What is the principle of a Laser?
5. Give the functioning of objective lens in compound microscope.
6. Define magnifying power of a microscope.
7. What is artificial radioactivity? Give examples of artificial radio isotopes.
8. Define one Curie and one Roentgen.
9. What is a transducer?
10. Write a note on pressure Transducer.

PART - B

Answer any **FOUR** questions

(4 x 7.5 = 30)

11. Explain capillary flow method to determine the viscosity of liquid.
12. Describe construction and working of Nd-YAG laser with suitable diagram.
13. Draw the schematic diagram of Ultra-Violet microscope and explain its operation and uses.
14. Explain the construction and working of Scintillation counter with suitable diagram.
15. Explain various types of electrodes used in Biomedical Instrumentation.

PART - C

Answer any **FOUR** questions

(4 x 12.5 = 50)

16. i) Explain capillary rise method of determination of surface tension of liquid. (6.5)
ii) Describe drop weight method of determination of absolute and interfacial surface tension of a liquid. (6)
17. Derive Einstein's A and B coefficients for Laser action.
18. Explain Transmission Electron Microscope(TEM) and Scanning Electron Microscope (SEM). (6+6.5)
19. i) Describe Natural Radio activity (4)
ii) Explain the biological effect of radiations (4)
iii) Explain archeological dating by C¹⁴ method. (4.5)
20. i) Explain the operation of inverting and non-inverting bio-amplifiers with neat circuit diagram. (3+3)
ii) Write a note on bio-chemical transducer. (6)
