Exam.Code:0040
Sub. Code: 1368

1057

B. Sc. (Hons) Bioinformatics
Second Semester
BIN-2006: Physics
(Old Syllabus May – 2016)

Time allowed: 3 Hours Max. Marks: 60

***NOTE**: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

x-x-x

I.

i. Define weight and give its units?
ii. What is electric flux?
iii. What is the diffraction of light?
iv. What is known as magnification?
v. State Malus Law.
vi. What is the difference between x-rays and radioactive radiations? (6x2)

Unit-I

II. (i) Write down the measurement units of mass and length. Also give the suitable examples from bioscience. (5)

(ii) State Gauss law and prove that divergence E= ρ/ε_o. (7)

III. (i) Define and write coulomb law in vector form. Define dielectric of medium. (6)

(ii)Using Gauss law, determine the magnitude of electric intensity at a distance "r" from the line of charges. (6)

IV. (i) Show the energy stored in a capacitor is given by U= $\frac{1}{2}CV^2$ (5)

(ii) What is current and current density? Derive the equation of continuity. (7)

Unit-II

V. Discuss the principal, ray diagram and working of compound microscope and how it is different from simple microscope. (12)

VI. (i) What is interference? Discuss Young's double slit experiment. (8)
(ii) You have 20.0 grams of 32-P that decays 5% daily. How long will it take for half the original to decay? (4)

VII. (i) Differentiate between continuous and characteristic X-Rays. Derive the Bragg's Law of X-Ray diffraction. (8)

(ii) Can two real sources of light act as coherent sources? Explain. (4)

x-x-x