DJJ-003-013204 Seat No. _____

M. Sc. (Biotechnology) (Sem. II) (CBCS) Examination

May / June – 2015

BT - 210 : Biostatistics & Analytical Techniques

(New Course)

Faculty Code : 003

Subject Code : 013204

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Q.1. Answer the following (***any seven***) 2 x 7 = **14**

a) What is "r" ?
b) Write different measures of central tendency with suitable examples.
c) What are the properties of normal distribution?
d) Define half life and radio isotope.
e) What is the significance of exciter filter and dichromatic mirror.
f) Define clearly Lambert's Beer Law
g) What is X-ray diffraction ?
h) What are the properties of electromagnetic radiations?
i) How GC is different from HPLC in terms of Principle?
j) State the principle of Affinity Chromatography

Q.2. Answer the following (***any two***) 2 x 7 = **14**

a) Describe the various measures of dispersion you have studied and discuss their merits.
b) What is the difference between t-test and ANOVA? Describe any one with suitable example.
c) What is Chi square test? Describe with suitable example it's application in biology.

Q.3. Answer the following 2 x 7 = **14**

a) Discuss in detail the basic principle of TEM. Add a note on its application in biological science.
b) What is radioactivity? Describe the phenomenon of radioactive decay and its usefulness.

OR

Q.3. Answer the following 2 x7 = **14**

a) Discuss in detail the basic principle of SEM. Add a note on its application in biological science.
b) What are the advantages of electron microscopy over the optical microscopy ?

Q.4. Answer the following 2x7 = **14**

a) Describe the principle of MALDI TOF-MS and its application in Biological Sciences.
b) Describe the principle of UV and IR spectroscopies and write a note on their application in biology.

Q.5. Answer the following (***any two***) 2 x7 = **14**

a) Discuss briefly the difference between PAGE, SDS PAGE and 2D PAGE.

b) Write short note on Centrifugation technique

c) Outline the significance of purification of proteins from the different organisms.

d) Describe briefly Capillary Electrophoresis
