Registration no: | | | | | | | | | | |

Total Number of Pages: 02 **MTECH**
BTPE207

2nd Semester Regular / Back Examination – 2015-16
Protein Engineering
Q Code : W958
Time: 3 Hours
Max marks: 70

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: (2 x 10)

a) What is Gyromagnetic ratio?

b) Give the tentative wavelength range of X-Ray.

c) Explain protein domain with example.

d) Name the scale used in NMR spectroscopy ?

e) What do you mean by fluorescence?

f) What do you mean by chimeragenesis?

g) What is protein folding?

h) Explain nature of peptide bond.

i) What is London force?

j) What is SAGE technique?

Q2 Explain different methods of site directed mutagenesis with suitable diagram. (10)

Q3 a) Draw peptide plate structure. (5)

b) Explain chemical methods for mimicking post-translational modifications (5)

Q4 (5)

a) Explain Bragg equation.

b) Describe hyperfine splitting with example. (5)

Q5 a) Explain characterization of folding pathways (5)

b) Explain the principle and instrumentation of FTIR. (5)

Q6 a) Explain the principle of NMR spectroscopy. (5)

b) Explain CD with suitable diagram. (5)

Q7 a) What is enzyme engineering? Describe an industry based application. (5)

b) Describe various synthetic and semisynthetic peptides and proteins, (5)

Q8 Answer any two (5 x 2)

a) Crystallization for XRD.
b) shielding
c) Rational design
d) Hydrogen-deuterium exchange