Dr. Anil Kant

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT**
**Test-1 Examination-September 2016**
**M.Tech. 1st Semester**

**Course Code: 13M11BT111** **Max. Marks: 15**
**Course Name: Advances in Molecular Cell Biology**
**Course Credit: 3** **Max. Time: 1 Hr**

Attempt all questions. Carrying of mobile phones will be treated as the case of unfair means.

**Q.1 Answer following questions briefly** **1X6=6**

a). What is central dogma of molecular biology? Tabulate different type of biological sequence transfers.
b). Why DNA is hypo chromic as compared to RNA?
c). Why DNA re-nature differently at rapid and slow cooling conditions?
d). Explain following terms; Twist, Writhe, Linking number
e). Differentiate between bacterial and eukaryotic topoisomersae I
f). Which property of following DNA entities is exploited to isolate DNA? Plasmid DNA, single stranded DNA from M13 phage, double stranded DNA from M13 phage

**Q.2** **1.5x2=3**

a). What is DNA gyrase? What do you understand by gyrase inhibition and gyrase poisoning? Give examples.
b). Write a short note on quinolones

**Q.3**

What are histone tails? How modification in histone tails influence DNA condensation and other processes of DNA metabolism? **3**

**Q.4**

Discuss organization of eukaryotic chromosomes by emphasizing on a) nucleosome and 30nm chromatin b) Chromosomes scaffolds c) role of non histone proteins **3**