

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

COURSE CODE: 13B11BI112

MAX.MARKS: 35

COURSE NAME: CELL AND MOLECULAR BIOOLOGY

MAX. TIME: 2 Hrs

COURSE CREDITS: 04

Note: All questions are compulsory. Carrying of mobile phone and calculator during examinations will be treated as case of unfair means. Marks are indicated in brackets.

1. What are the major differences between a prokaryotic and eukaryotic cell? Explain with diagram if required (3)
2. Write on protein sorting/trafficking? Give a flow chart on how proteins are sorted to different organelles (3)
3. Draw the structure of Glucose, Fructose, and Alanine? Also, draw peptide bond between any two amino acids? (3)
4. Describe different types of active and passive transport? (3)
5. Write the genome size and gene number of *E. coli* and human genome? (3)
5. Write on carbohydrate, what are their types, with examples? Draw the structure maltose sugar representing glycosidic bond? Highlights the major function of carbohydrate in the cell system? (5)
6. What is protein? Describe how proteins are synthesized in a prokaryotic cell? (5)
7. What is function of DNA polymerase? Draw a well labeled diagram representing replication process? (5)
8. What is transcription; describe the steps involved in teh process of transcription of a prokaryotic cell? (5)