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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
T-1 EXAMINATION, Feb 2020  
B. Tech. (Bioinformatics) VIII Semester

COURSE CODE: 15B1WBI832  
COURSE NAME: NGS Data Analysis and Applications

MAX MARKS: 15  
MAX. TIME: 1 Hr.

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*Note: All questions are compulsory. Attempt all questions of a particular section at one place.  
Answer each question to the point.*

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1. Answer the following:

- a. What is pyrosequencing? What are the steps involved in it? (1.5 marks)
- b. What are the different applications of pyrosequencing? (1.5 marks)
- c. How this sequencing technique is different from Sanger sequencing and why pyrosequencing is also known as next generation sequencing? (2 marks)

2. Answer the following:

- a. What are Phred Quality Scores? (1 mark)
- b. Describe phred 33 and phred 64 scores with the help of suitable examples. (2 marks)
- c. Give the formula to convert inaccuracies in base call to the phred scores. (1 mark)
- d. Comment on the importance of quality scores in Next Generation Sequencing base calls. (1 mark)

3. Answer the following:

- a. Describe quality check step in NGS data analysis. (2 marks)
- b. What is fastQC program and where does it fit in NGS data analysis? (1.5 marks)
- c. Comment on the need of read trimming and how could you decide upto what length the read trimming is required. (1.5 Mark)