

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2017

B.Tech (DD) / M.tech IX/III Semester

COURSE CODE: L-14B1WBT739

MAX. MARKS: 15

COURSE NAME: Stem Cell and regenerative medicine

COURSE CREDITS: 3

MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. XXXXXXXXXXXXXXXXXXXXXXXX

Part A: Short Answer Questions (1 mark each).

1. After fertilisation, cells are totipotent but by the time a blastocyst has formed the cells are pluripotent. Explain what is meant by the terms totipotent and pluripotent.
2. Define the term 'stem cell lineage'
3. Why meiosis is called reductional cell division?
4. What are induced pluripotent stem cells?
5. What are umbilical cord stem cells?
6. Explain the role of notch signaling in stem cells

Part B: Long Answer Questions.

1. What are adult stem cells and from where do they come? [1.5]
2. Explain the role of klf4 and Sox 2 in pluripotent stem cell generation [2]
3. Mechanism of Asymmetric cell division. [3]
4. Different approaches of nuclear reprogramming [2.5]