

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-2 EXAMINATION OCTOBER 2018

BTDD (Biotech) 9th Semester

COURSE CODE: 14B1WBT739

MAX. MARKS: 25

COURSE NAME: Stem Cells & Regenerative Medicine

COURSE CREDITS: 03

MAX. TIME: 1HR 30 MIN

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

- 1) Define Totipotency and Pluripotency. [2Marks] (CO-I)
- 2) Why stem cells self renew and differentiate? [2Marks] (CO-I)
- 3) What are induced pluripotent stem cells? [2Marks] (CO-I/II)
- 4) Name the specialized cells derived from gut stem cells. [2Marks] (CO-I/II)
- 5) How can we differentiate human pluripotent stem cell into dopaminergic neurons (mDA)? Explain with diagram. [5Marks] (CO-II/III)
- 6) To identify the various stages of neurogenesis at molecular level, illustrate the different markers that can be found at different stages. Are there any markers present in more than one stage? If yes, name them. [2Marks] (CO-II/III)
- 7) Describe the two methods for isolation and culturing of neural stem cells. Name the type of cells used for both the methods. [2Marks] (CO-III)
- 8) Illustrate the three hypothesis made on the location of neural stem cells in case of vertebrate neural plate. [2Marks] (CO-III)
- 9) How stem cells division takes place in the mammalian CNS. Describe with the help of diagram at different stages/phases. [3Marks] (CO-II/III)
- 10) The stem cells extracted from different ages show differing responses to application of some growth factors. Explain the statement with example. [3Marks] (CO-II/III)