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**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY WAKNAGHAT**

**Test-3 2019**

Semester : 4<sup>th</sup> Sem B.Tech Biotechnology

COURSE : Cell Culture Technology

MAX.MARKS:35

COURSE CODE: 10B11BT412

TIME:2HRS

**All questions are compulsory and draw diagram where it is required.**

- Q1. Write in details about the production of Monoclonal antibodies. Explain the importance of HGPRT gene.(5) (CO1)
- Q2. List the processes involved in sample preparation for immunofluorescence. Explain the principle of fixation and permeabilization. (5) CO2
- Q3. Why cryopreservation of cells is performed? Explain the principle and processes involved in cryopreservation.?(5) (CO3)
- Q4.Picrosides are biosynthesized in the roots of *Pterorhiza* sp. Explain the methodology for in vitro production of picrosides and how you can commercialize its production. (5) CO5
- Q5.For developing the hybrid of mango and mandarins which technology you would like to use. Explain all the steps for production and screening of somatic hybrids. (5) CO6
- Q6.Gene R-1 is identified for disease resistance.Mention which technique of genetic modification can be employed for the development of transgenic potato. Explain the complete protocol for the same. (5)CO5
- Q7. Write short note on somaclonal variants ? What are their modes and mechanisms of development? How these variants are utilized for crop improvement? (5) CO 4