Total No. of pages-2 *Roll No.....*

SIXTH SEMESTER **B.TECH. (BIOTECHNOLOGY)**

MID SEMESTER EXAMINATION **MARCH-2019**

BT304: ANIMAL BIOTECHNOLOGY

Time: 1.30 Hours **Max. Marks: 20**

Note: **Answer *All* questions.**
Assume suitable missing data, if any.

Q1. Briefly answer **all** of the following questions (1×8)

(a) How does CO_2 help in the cell metabolism during cell culture?
(b) How does Ca & Mg ions influences the cell density in a culture plate.
(c) Describe the role of L-glutamine in culture medium.
(d) Describe the principle of any viability assay for cell metabolism.
(e) Describe metabolic shift in fed batch culture.
(f) Name the genes responsible for pluripotency of stem cells
(g) Define cell line and cell strain.
(h) Range of optimum glucose concentration present in the culture media is?

Q2. Answer **any four** of following questions. (1.5×4)

(a) Explain in brief the role of p53 in cell cycle check points.
(b) Write down the principle of two apoptosis assays for cytotoxicity
(c) State the difference between 2D and 3D cell culture.
(d) Describe the structure and function of Fibronectin.
(e) Discuss the advantage and disadvantage of perfusion technology over contemporary batch culture techniques.
(f) Describe the methods can be used to bypass the application of viable embryo for the development of pluripotent stem cells

P.T.O

Q3. Answer <u>any two</u> of following questions (3×2)

(a) Write the type of stem cells and its applications in human therapy.

(b) Enlist the advantage and disadvantages of serum and serum free medium in context of fibroblast cell culture.

(c) Explain the significance of following in the context of cell growth

i. Surface area to media volume

ii. Hyperoxia and hypoxia

iii. Hydrophilicity and hydrophobicity

-END-