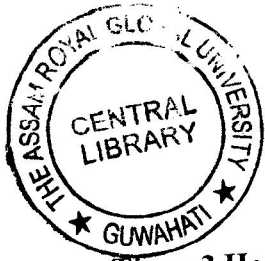


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Time: 3 Hours

# The Assam Royal Global University, Guwahati

Royal School of Biosciences  
M. Sc. Biotechnology, 3<sup>rd</sup> Semester  
Semester End Examination, January 2023  
Course Title : Animal Biotechnology  
Course Code : BTC154C301

Maximum Marks: 70

**Note: Attempt all questions as per instructions given.**  
*The figures in the right-hand margin indicate marks.*

## Section – A

1. Attempt **all** questions. (Maximum word limit 50) 2 x 8
- Define stem cells. Mention its characteristics.
  - Mention the role of FBS in animal cell culture.
  - Write down the differences between monoclonal and polyclonal antibodies.
  - What is subunit vaccine? Give example.
  - What are the characteristics of restriction enzymes?
  - Define metabolomics.
  - Mention the ovum pickup procedure.
  - What is embryo biotechnology?

## Section – B

2. Attempt **any two** of the following: 6 x 2
- Discuss the media composition of mammalian cell culture.
  - Explain the various classes of stem cells based on their potency.
  - Elaborate the process of *in-vitro* fertilization.
3. Attempt **any two** of the following: 7 x 2
- What is vaccine? Explain the conventional method of vaccine production.
  - What is HAT media? How HAT media helps in selection of hybridoma cells?
  - Explain how DNA forensics helps in animal species identification.
4. Attempt **any two** of the following: 7 x 2
- Why sticky ends are better than blunt ends? Explain the principle and applications of SNP, AFLP marker.
  - Briefly discuss gene knockout technique and their applications.
  - Discuss human genetic disorders with examples.
5. Attempt **any two** of the following: 7 x 2
- How biotechnology is useful in the reproduction of animals?
  - What is the most common hormone replacement therapy? Explain.
  - Discuss briefly the diseases which directly affect the reproductive system.