

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION)**

**CLASS: BT  
BRANCH: BIOTECHNOLOGY**

**SEMESTER: III  
SESSION : MO/2019**

**SUBJECT : BE202 CELL AND MOLECULAR BIOLOGY**

**TIME: 2:00 HOURS**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The total marks of the questions are 25.
  2. Candidates may attempt for all 25 marks.
  3. Before attempting the question paper, be sure that you have got the correct question paper.
  4. The missing data, if any, may be assumed suitably.
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- Q1 (a) Describe the molecular nature of Cell membrane and its fluidity. [2]  
Q1 (b) Compare the structure of eukaryotic and prokaryotic cells with suitable diagram. [3]
- Q2 (a) What is FRAP? Write some applications. [2]  
Q2 (b) Describe some properties of Mitochondria that support the endosymbiotic theory of the origin of eukaryotic cell from prokaryotic cells. [3]
- Q3 (a) What are cyclic-AMP? How they are activated? [2]  
Q3 (b) Which molecule is involved in opening calcium ion channel in ER? What will be the consequence of open calcium ion channel? [3]
- Q4 (a) Draw a schematic diagram of GPCR activating PKC. [2]  
Q4 (b) Describe the ways through which cells communicate. [3]
- Q5 (a) What are the components of cell cycle? [2]  
Q5 (b) Cell cycle progression is stopped at G2 check point, what are the possible causes? [3]

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