

**MASTER OF PHARMACY (M. PHARM.) (CBCS-2019 COURSE)**  
**M.Pharm. Sem-I Pharmaceutical Biotechnology : MARCH : 2022**  
**SUBJECT: MICROBIAL & CELLULAR BIOLOGY**

**Day : Monday**  
**Date 28-03-2022**

**M-20715-2022**

Time : 10:00 AM-01:00 PM  
Max. Marks: 75

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**N.B.**

- 1) **Q.No. 1 and Q.No. 5** are **COMPULSORY**. Out of remaining questions answer **ANY TWO** from **each** section.
  - 2) Answers to both sections should be written in **SEPARATE** answer books.
  - 3) Figures to the **RIGHT** indicate **FULL** marks.
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**SECTION – I**

- Q.1** Justify mitochondria as endo-symbiont. **(08)**
- Q.2** Discuss mechanism and importance of RNA splicing. **(15)**
- Q.3** Hyper-methylation of histone-tail is expected to affect gene expression describe how? **(15)**
- Q.4** Write notes on **ANY TWO** of the following : **(15)**
- a) Restriction enzymes
  - b) Meiotic prophase I
  - c) Gene copy number

**SECTION – II**

- Q.5** How do you establish primary cell culture? **(07)**
- Q.6** Write different methods of culturing viruses. **(15)**
- Q.7** What is IVF? Describe key steps involved in IVF. **(15)**
- Q.8** Write notes on **ANY TWO** of the following : **(15)**
- a) Differentiate apoptosis and necrosis
  - b) Applications of cell culture
  - c) Cell culture media

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