

RAMAKRISHNA MISSION VIVEKANANDA EDUCATIONAL AND RESEARCH INSTITUTE**NARENDRAPUR CAMPUS**

(Deemed-to-be University declared by Govt. of India under Section 3 of UGC Act, 1956)

Head Quarter: Belur Math, Howrah, West Bengal: 711202

(Accredited by NAAC with A++ Grade)

Division of Agricultural Biotechnology | School of Agriculture and Rural Development**Department of Biomedical Science and Technology | School of Biological Science**

Ramakrishna Mission Ashrama, Narendrapur, Kolkata-700103

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Question Nos.	Max. Marks	Marks Obtained
SECTION-A: A.01—A.15 (Page Nos. 03-05)	30	
SECTION-B: B.01—B.06 (Page Nos.06-08)	30	
TOTAL	60	

**ENTRANCE EXAMINATION FOR
ADMISSION TO M.Sc. in AGRICULTURAL BIOTECHNOLOGY/
M.Sc. in MEDICAL BIOTECHNOLOGY– 2026**

(Model Question)

Maximum Marks: 60**Duration:** 2 Hours**SECTION-A:** 2 marks each**SECTION-B:** 5 marks each**INSTRUCTIONS**

1. ALL questions are COMPULSORY.
2. The question paper consists of two sections: Section-A (Short Answer Type Questions) and Section-B (Descriptive Type Questions).
3. Section-A carries 2 marks each. Answers should be brief and precise -not exceeding 60–80 words per answer.
4. Section-B carries 5 marks each. Write focused, organized answers -not exceeding 200–250 words per answer.
5. Question Distribution: Section-A includes 15 short-answer questions, and Section-B includes 6 descriptive questions.
6. Candidates must write their answers only in the space provided. **No additional sheets will be supplied.**
7. The use of **calculators, electronic devices, or any reference materials is strictly prohibited.**
8. Marks will be awarded based on: Clarity of expression, Relevance of content, Use of appropriate examples (where applicable) and Correct terminology.

(To be filled by the Candidates)

Name	
Signature	
Application ID	

Invigilator's Signature:

SPACE FOR ROUGH WORK

SECTION -A: SHORT ANSWER QUESTIONS

A.01. Differentiate between sterilization and disinfection.

A.02. What do you mean by “Palindromic sequence”?

A.03. A DNA double strand contains 40% adenine, estimate the other three bases in %.

A.04. What are the “molecular glue” and “molecular scissors” in genetic engineering?

A.05. Write down the name of the intercalating agent used in gel electrophoresis.

A.06. What is the basic purpose of the probe and primer in molecular biology?

A.07. Write down the name of the first efficient type II restriction enzyme with its source.

A.08. What is the function of DNA Ligase?

A.09. Define the term explant.

A.10. Write the role of cytokinin and auxin in plant tissue culture.

A.11. Which phytohormone acts as an "Apical dominance inhibitor"?

A.12. What is micropropagation?

A.13. Mention any plant tissue culture method through haploid plant can be generated.

A.14. Differentiate between somatic embryogenesis and Zygotic embryogenesis.

A.15. Why is oxygen essential for cellular respiration?

SECTION -B: DESCRIPTIVE QUESTIONS

B.01. Name an extrachromosomal DNA in bacteria and what selective advantage it can provide to bacteria under different conditions

B.02. Why are viruses considered obligate intracellular parasites? What is a viral envelope? Mention its function.

B. 03. Why do Gram-negative bacteria show greater antibiotic resistance?

B.04. During intense exercise, a person experiences muscle cramps. Explain the possible physiological reasons.

B.05. A transplanted kidney is rejected after a few weeks. Explain the immunological basis of graft rejection.

B.06. A patient with a low CD4+ T-cell count develops repeated infections. Explain the connection between CD4+ cells and immunity.