

**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)

School of Agriculture and Rural Development
Ramakrishna Mission Ashrama, Narendrapur, Kolkata-700103

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Question Nos.		Max. Marks	Marks Obtained
PHYSICS	SECTION-A: A.01—A.04 (Page No. 3)	08	
	SECTION-B: B.01 (Page No. 4)	05	
CHEMISTRY	SECTION-A: A.01—A.04 (Page No. 5)	08	
	SECTION-B: B.01 (Page No. 6)	05	
MATHEMATICS/ BIOLOGY	SECTION-A: A.01—A.07 (Page Nos. 7-8, 11-12)	14	
	SECTION-B: B.01—A.04 (Page Nos. 9-10, 13-14)	20	
TOTAL		60	

**ENTRANCE EXAMINATION FOR
ADMISSION TO B.Sc. (Hons.) AGRICULTURE – 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. Candidates must attempt questions from **Physics, Chemistry, and either Mathematics or Biology (as applicable)**.
6. Question Distribution: Physics and Chemistry each include four short-answer questions (Section-A), and one descriptive question (Section-B). Mathematics/Biology includes: Seven short-answer questions (Section-A), and four descriptive questions (Section-B).
7. Candidates must write their answers only in the space provided. **No additional sheets will be supplied.**
8. The use of **calculators, electronic devices, or any reference materials is strictly prohibited.**
9. 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

PHYSICS

SECTION -A: SHORT ANSWER QUESTIONS

A.01. Derive an expression for the torque experienced by an electric dipole placed in a uniform electric field.

A.02. Derive an expression for the magnetic field at the centre of a circular current-carrying loop.

A.03. Define half-life and decay constant. Find the relationship between them.

A.04. State Brewster's Law and show that the reflected and refracted rays are perpendicular.

SECTION -B: DESCRIPTIVE QUESTIONS

B.01. Derive an expression for the electric field intensity at any point on the axial line and equatorial line of an electric dipole.

CHEMISTRY

SECTION -A: SHORT ANSWER QUESTIONS

A.01. Define Faraday's first law of electrolysis and write its mathematical expression.

A.02. Explain the lowering in freezing points of water with the help of a suitable diagram.

A.03. What is chemisorption? Explain with an example.

A.04. Describe the mechanism of the Aldol condensation reaction.

SECTION -B: DESCRIPTIVE QUESTIONS

B.01. Explain the effect of a catalyst on activation energy and reaction rate. Distinguish between molecularity and order of reaction.

MATHEMATICS

SECTION -A: SHORT ANSWER QUESTIONS

A.01. Find the direction ratios of the x-axis.

A.02. Find the vector joining the points (1,2,3) and (4,5,6).

A.03. Define probability distribution.

A.04. If $A=\{1,2,3\}$ and $B=\{2,4,6\}$, find $A \cap B$.

A.05. Find the inverse of the matrix $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

A.06. Evaluate $\lim_{x \rightarrow 2} (x^2 + 3x)$.

A.07. State Rolle's Theorem.

SECTION -B: DESCRIPTIVE QUESTIONS

B.01. A bag contains 6 red, 5 blue, and 4 green balls. Two balls are drawn at random. Find the probability that both are blue.

B.02. Using matrices, solve the system of equations:

$$x+y+z=6$$

$$2x-y+z=3$$

$$x+2y-z=2$$

B.03. Verify Rolle's theorem for the function: $f(x)=x^2-5x+6$

B.04. Explain the geometrical meaning of the derivative of a function. How is it related to the slope of a tangent?

BIOLOGY

SECTION -A: SHORT ANSWER QUESTIONS

A.01. What are plasmodesmata? Mention their function.

A.02. Define imbibition. Give one example.

A.03. State Hardy–Weinberg principle.

A.04. What are sexually transmitted infections (STIs)? Give two examples.

A.05. What is photoperiodism?

A.06. What is PCR? Mention its importance.

A.07. What is biomagnification?

SECTION -B: DESCRIPTIVE QUESTIONS

B.01. Describe the steps involved in recombinant DNA technology.

B.02. Describe the structure of DNA and explain the Watson and Crick model.

B.03. Explain Mendel's laws of inheritance with suitable examples.

B.04. Explain biodiversity conservation through in situ and ex situ me