



UNIVERSITY OF CALCUTTA

Notification No. CSR/14/2026

It is notified for information of all concerned that in terms of the provisions of Section 54 of the Calcutta University Act, 1979, (as amended), and, in the exercise of his powers under 9(6) of the said Act, the Vice-Chancellor has, by an order dated 15.12.2025, approved the Question Patterns for Semester-5 of 4-year Honours & Honours with Research and 3-year MDC in Physics under CCF, 2022.

The above shall take immediate effect.

SENATE HOUSE

Kolkata-700073

30.01.2026

Prof.(Dr.) Debasis Das

Registrar

Paper Structure for Sem-V

The evaluation of papers in semester-5 will be as follows:

4-Year Honours (Major Papers)

1. Papers: PHSM-DSCC-9 (PHS-DSCC-5-1) [Electronics I]

[3(Th)+1(P) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.
- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks out of a set of 8 questions.
- iii. Students will be expected to answer 5 long questions each carrying 12 marks from a set of 8 questions. No part of a long question will carry more than 6 marks.
- iv. Paper setters will be expected to provide solutions for problems.

b) Practical (25 Marks; 3 Hrs)

- i. There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
- ii. LNB and *Viva-Voce* will carry 5 marks each.
- iii. Students will be expected to perform 1 experiment and the performance will carry 15 marks.

2. Papers: PHSM-DSCC-10 (PHS-DSCC-5-2) [Nuclear and Particle Physics]

[3(Th)+1(Tu) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.
- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks out of a set of 8 questions.
- iii. Students will be expected to answer 5 long questions each carrying 12 marks from a set of 8 questions. At least 5 questions will be set from the first four modules of the syllabus: 'Rutherford scattering', 'Nuclear properties and structure', 'Interaction with and within the nucleus' and 'Nuclear reactions'. No part of a long question will carry more than 6 marks.

iv. Paper setters will be expected to provide solutions for problems.

b) Tutorial (25 Marks; 1 Hr):

- i. Evaluation will be based on at least one assignment given to the students by the college, comprising a collection of problems and/or questions.
- ii. Colleges will be expected to preserve the answer scripts for six months after the publication of results.

3. Paper: PHSM-DSCC-11 (PHS-DSCC-5-3) [Quantum Mechanics]

[3(Th)+1(P) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.
- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks from a set of 8 questions out of which 5 questions will be set from the module 'Quantum Mechanics' and 3 questions will be set from the module 'Quantum Statistical Mechanics' of the syllabus.
- iii. In the section of long questions, there will be **two** groups corresponding to the two modules of the syllabus: 'Quantum Mechanics' and 'Quantum Statistical Mechanics'. Students will be expected to answer 5 long questions each carrying 12 marks, taking at least 2 questions out of 5 from the module 'Quantum Mechanics' and at least 1 question out of 3 from the module 'Quantum Statistical Mechanics'. No part of a long question will carry more than 6 marks.

iv. Paper setters will be expected to provide solutions for problems.

b) Practical (25 Marks; 3 Hrs)

- i. There will be three components of evaluation - Lab Note Book (LNB), Viva-Voce and Experiment.
- ii. LNB and Viva-Voce will carry 5 marks each.
- iii. Students will be expected to write one or two programs and this part will carry 15 marks.

4. Paper: PHSM-DSCC-12 (PHS-DSCC-5-4) [Thermal Physics and Statistical Mechanics]

[3(Th)+1(P) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.

- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks from a set of 8 questions out of which 2 questions will be set from the module 'Kinetic Theory of Gases', 4 questions will be set from the module 'Thermodynamics' and 2 questions will be set from the module 'Classical Statistical Mechanics' of the syllabus.
 - iii. In the section of long questions, there will be **three** groups corresponding to the three modules of the syllabus: 'Kinetic Theory of Gases', 'Thermodynamics' and 'Classical Statistical Mechanics'. These groups will comprise 2, 4 and 2 questions respectively carrying 12 marks each. Students will be expected to answer 5 long questions taking at least one from each group.
 - iv. Paper setters will be expected to provide solutions for problems.
- b) Practical (25 Marks; 3 Hrs)
- i. There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
 - ii. LNB and *Viva-Voce* will carry 5 marks each.
 - iii. Students will be expected to perform 1 experiment and the performance will carry 15 marks.

4-Year Honours (Minor Papers)

1. Paper: MPHS-MN-3 (PHS-Minor4/(1,2)-5-1) [Waves and Optics]
[3(Th)+1(P) = 4 credits]
- (a) Theory (75 Marks; 3 Hrs):
- i. There will be two sections, one for short questions and the other for long questions.
 - ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks from a set of 8 questions out of which 3 questions will be set from the modules 1-3 (Oscillations and Waves) and 5 questions will be set from the module 4-7 (Optics) of the syllabus.
 - iii. In the section of long questions, there will be **two** groups corresponding to the modules 1-3 (Oscillations and Waves) and 4-7 (Optics) of the syllabus.. Students will be expected to answer 5 long questions each carrying 12 marks, taking 2 questions out of 3 from the first group (Oscillations and Waves) and 3 questions out of 5 from the second group (Optics). No part of a long question will carry more than 6 marks.
 - iv. Paper setters will be expected to provide solutions for problems.

- b) Practical (25 Marks; 3 Hrs)
- There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
 - LNB and *Viva-Voce* will carry 5 marks each.
 - Students will be expected to perform 1 experiment and the performance will carry 15 marks.
2. Paper: MPHS-MN-4 (PHS-Minor4/(1,2)-5-2) [Modern Physics]
[3(Th)+1(P) = 4 credits]
- a) Theory (75 Marks; 3 Hrs):
- There will be two sections, one for short questions and the other for long questions.
 - In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks out of a set of 8 questions.
 - Students will be expected to answer 5 long questions each carrying 12 marks from a set of 8 questions. No part of a long question will carry more than 6 marks.
 - Paper setters will be expected to provide solutions for problems.
- b) Practical (25 Marks; 3 Hrs)
- There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
 - LNB and *Viva-Voce* will carry 5 marks each.
 - Students will be expected to perform 1 experiment and the performance will carry 15 marks.

3-Year MDC (Core Papers)

1. Papers: MPHS-CC-6 (PHS-CC-5-1) [Electronics I]
[3(Th)+1(P) = 4 credits]
- a) Theory (75 Marks; 3 Hrs):
- There will be two sections, one for short questions and the other for long questions.

- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks out of a set of 8 questions with 4 questions being set from each of the two modules of the syllabus (“Basic Analog Electronics” and “Basic Digital Electronics”).
- iii. In the section of long questions, there will be two groups corresponding to the two modules of the syllabus (‘Basic Analog Electronics’ and ‘Basic Digital Electronics’). Students will be expected to answer 5 long questions each carrying 12 marks taking at least one from each group with 4 questions being set from the first group (‘Basic Analog Electronics’) and 4 questions from the second group (‘Basic Digital Electronics’). No part of a long question will carry more than 6 marks.

Paper setters will be expected to provide solutions for problems.

b) Practical (25 Marks; 3 Hrs)

- i. There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
- ii. LNB and *Viva-Voce* will carry 5 marks each.
- iii. Students will be expected perform 1 experiment and the performance will carry 15 marks.

2. Papers: MPHS-CC-7 (PHS-CC-5-2) [Nuclear and Particle Physics]

[3(Th)+1(P) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.
- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks out of a set of 8 questions.
- iii. Students will be expected to answer 5 long questions each carrying 12 marks from a set of 8 questions. No part of a long question will carry more than 6 marks.
- iv. Paper setters will be expected to provide solutions for problems.

b) Tutorial (25 Marks; 1 Hr):

- i. Evaluation will be based on at least one assignment given to the students by the college, comprising a collection of problems and/or questions.
- ii. Colleges will be expected to preserve the answer scripts for six months after the publication of results.

Practical (25 Marks; 3 Hrs)

3-Year MDC (Minor Papers)

1. Paper: MPHS-MN-3 (PHS-Minor3-5-1) [Waves and Optics]

[3(Th)+1(P) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.
- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks from a set of 8 questions out of which 3 questions will be set from the modules 1-3 (Oscillations and Waves) and 5 questions will be set from the module 4-7 (Optics) of the syllabus.
- iii. In the section of long questions, there will be **two** groups corresponding to the modules 1-3 (Oscillations and Waves) and 4-7 (Optics) of the syllabus.. Students will be expected to answer 5 long questions each carrying 12 marks, taking 2 questions out of 3 from the first group (Oscillations and Waves) and 3 questions out of 5 from the second group (Optics). No part of a long question will carry more than 6 marks.
- iv. Paper setters will be expected to provide solutions for problems.

b) Practical (25 Marks; 3 Hrs)

- i. There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
- ii. LNB and *Viva-Voce* will carry 5 marks each.
- iii. Students will be expected to perform 1 experiment and the performance will carry 15 marks.

2. Papers: MPHS-MN-4 (PHS-Minor3-5-2) [Electronics I]

[3(Th)+1(P) = 4 credits]

a) Theory (75 Marks; 3 Hrs):

- i. There will be two sections, one for short questions and the other for long questions.
- ii. In the section of short questions, students will be expected to answer 5 questions each carrying 3 marks out of a set of 8 questions with 4 questions being set from each of the two modules of the syllabus ("Basic Analog Electronics" and "Basic Digital Electronics").
- iii. In the section of long questions, there will be two groups corresponding to the two modules of the syllabus ('Basic Analog Electronics' and 'Basic Digital Electronics'). Students will be expected to answer 5 long questions each carrying 12 marks taking

at least one from each group with 4 questions being set from the first group ('Basic Analog Electronics') and 4 questions from the second group ('Basic Digital Electronics'). No part of a long question will carry more than 6 marks.

Paper setters will be expected to provide solutions for problems.

b) Practical (25 Marks; 3 Hrs)

- i. There will be three components of evaluation - Lab Note Book (LNB), *Viva-Voce* and Experiment.
- ii. LNB and *Viva-Voce* will carry 5 marks each.
- iii. Students will be expected perform 1 experiment and the performance will carry 15 marks.