

PhD in Computer Science at Ashoka

Entrance Test Rules and Requirements

Computer Used for the Test

- The Ashoka PhD@CS Entrance Test is proctored via webcam. Candidates must use a computer with a webcam built in or obtain an add-on webcam to be used for the Test. Ashoka does not provide webcams for the test. Candidates are responsible for ensuring that the webcam software works before they take the test.
- Candidates must have a strong Internet connection to take the test.
- The computer used to take the test must not have more than one display or monitor. (For example, you may need to disconnect extra monitors from a laptop.)
- Candidates must close all other programs or windows on the testing computer before beginning the test.
- The test will be held on *Zoom*. *Computer systems must meet the minimum hardware and software requirements to ensure smooth delivery of the examination via Zoom.* A few system requirements are specified below:

Windows Requirements

Operating system: Windows 10+

Browser: Chrome v110.0+, Firefox v110.0+, Edge v110.0+

Internet connection: DSL, cable modem, or other high-speed connection

Macintosh Requirements

Operating system: Mac OS X 11+

Browser: Mozilla Firefox v110.0+, Safari 16+, Chrome v110.0+

Internet connection: DSL, cable modem, or other high-speed connection

Note: It is advised that candidates check their system requirements and make sure that Zoom is working properly on their computers. It will be difficult for the invigilators to provide any kind of technical help regarding system issues, during the examination.

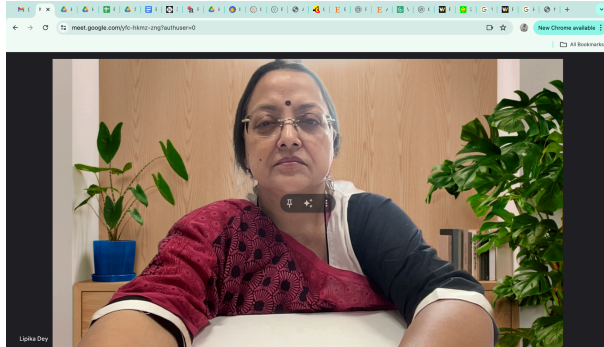
Test Environment Rules

- Your face must clearly be visible on camera and facing forward throughout the duration of the test (your image will appear in the window on the monitor). Additionally, the computer/webcam should be placed at a distance such that both your hands are clearly visible, along with your face (see reference picture below).
- You must keep your eyes on the computer or on the writing material (you must use standard A4/letter sheets to write down the solutions) at all times. Taking your eyes off to look around, up, or down will be flagged as suspicious activity and may result in disqualification.

Note: You will not see an alert on your end so you will not know when the suspicious activity was flagged.

- If you are using your hand or arm, as reference, make sure to raise it high enough for the camera to record.
- You must take the test in the same room (preferably without a window to prevent distractions) throughout the duration of the test.
- You must sit and remain seated at a clean desk or table throughout the test.
- The lighting in the room must be bright enough to be considered “daylight” quality. Overhead lighting is preferred. If overhead lighting is not available, the source of light must not be behind you.
- The desk or walls around you must not have anything written on them.
- The room must be as quiet as possible. Sounds such as music or television are not permitted.
- No other person is allowed to enter the room while you are taking the proctored test.
- The following items must not be on your desk or used during your proctored test:
 - Books
 - Textbooks
 - Phones
 - Any other electronic device/gadget (ipads, smart watches, etc.) other than the computer on which you are viewing the question paper

Reference image



Behavior

- You must verify your identity using a photo ID that has your name and photo on the same side. The name must match the full name used when registering for the test.
- You must dress as though you are in a public/work setting.
- You must not communicate with any other person (other than the invigilators) by any means.
- You must not use a phone for any reason (unless calling our office for technical support).
- You must not leave the room for any reason. Limit fluid intake if needed, and be sure to use the restroom prior to starting the test.

Additional Time or Special Allowances

If you have a disability and need additional time or specific accommodations, you must send an email to cs.dept@ashoka.edu.in in advance, before the test. The test committee must approve your request and make any adjustments before you start your test.

Consequences of Rule Violations

Candidates who violate the online proctoring rules, engage in any kind of malpractice, or receive an unsatisfactory review of the proctored video will automatically warrant a disqualification.

Details of the Test

1. The test has two parts. The first part (part A) of the test will consist of questions on basic Mathematics (including but not limited to basic Probability, Statistics, Linear Algebra, and Calculus) and basic programming. The second part (part B) will consist of questions from basic Computer Science concepts (including but not limited to Data Structures, Algorithms, and Computer Organization).
2. Candidates who have applied for a regular PhD need to answer both parts of the test. Integrated MSc-PhD applicants need to answer only the first part (part A).
3. Each part of the test will be one hour long, with a gap of 10 minutes in between.
4. Once you have written down all solutions clearly and concisely on A4 sheets, you will be given 5 minutes to scan and upload your answer

scripts on a Google Drive folder (the link will be shared with you immediately before the Test).

Detailed Syllabus

Syllabus for Part A (For both Integrated PhD and Regular PhD Applicants)

- Elementary Mathematics: Set theory and functions, Sequences and series, Elementary combinatorics.
- Elementary calculus
- Basic Probability and Statistics
- Matrix and Linear algebra: Matrices, determinants, systems of linear equations, linear independence and dependence, eigenvectors and eigenvalues
- Basic knowledge of computer programming

Syllabus for Part B (For Regular PhD applicants only)

- Programming and Data Structures: Programming in C, array, stack, queue, linked list, binary tree, heap, etc.
- Design and analysis of algorithms: Asymptotic notation, basic algorithms for searching, sorting, selection, graph traversal, minimum spanning tree, etc.