

# DECOHERENCE

## Rules and Regulations

### Introduction and Motto

Popular culture gives a rather cliched (and incorrect) picture of how research is done; it usually involves a misguided soul working frantically in the lab to discover something that can save the world or a lone man (preferably working near a window overlooking an open space), scribbling on whatever surface he finds free (you get the reference!). It does capture some of the essence though indeed, research involves dealing with long moments of frustration followed by sudden flashes of insight. However, what differentiates real research from its popular rendition is that in the former, you can't rely on the director to ensure that you make a breakthrough; in fact, there is a very real chance that you never might make one. But then, it is this uncertainty and challenge that makes it so addicting to so many of us. We could go on rambling about research but it best understood by direct participation. This is precisely what we want to achieve through Decoherence - to give a feel for real research.

### Details of the Competition

**Dates :** Decoherence will be held on Saturday, 20th January 2018

#### **Eligibility :**

Students are allowed to form teams of maximum size two to participate in the competition. Participation is open to high school students and undergraduates. The team members need not be from the same institute. However, if they wish to avail travel allowance, they must be from the same city. Interested students can register for this event at <http://pravega.org>. Online registrations will be open till 19th January. On spot registrations on the day of the event are available upto logistical limits.

#### **Syllabus :**

The questions for prelims and finals will be based on the concepts generally covered in 11th and 12th but be warned! This competition isn't for the faint hearted. Physical intuition and logic will be required to solve the problems.

#### **Prelims :**

Prelims will consist mostly of objective questions.



IISc  
Bangalore

Title Sponsor  
**AIRBUS**

2018  
**Pra<sup>v</sup>ega**  
Indian Institute of Science

## **Timings :** 9:30 am to 11:00 am

Participants will be notified of the results of the prelims through Email and SMS on the same day, before 12:30 pm. Two of the highest scoring teams in the prelims will qualify for the finals.

The 3rd and 4th highest scoring teams in prelims will get consolation prizes of Rs 2000 and Rs 1000 respectively. They will be notified of their prize along with the result. The Email will carry instructions on how to avail the prize money.

## **Finals :**

This is the real deal! Here, the two teams who qualify get to choose from 5 questions, taken from the following branches of physics:

- Classical mechanics
- Thermodynamics
- Electromagnetism
- Optics
- Modern physics

Sounds easy right? Rest assured that it won't be. You will have to choose one question out of the five given and you get three hours to solve it. At the end of this time, the teams must present their solutions to a panel of judges from Indian Institute of Science who are eminent researchers in their respective fields. These judges will assign points to the teams in the final round. Decisions of judge will be final and binding. On the basis of these points, the winning team is decided.

## **Prizes :**

The winning team gets Rs.20,000/- while the team that comes second gets Rs.10,000/-  
Important: The final round starts at 1:00 pm on the same day as the prelims.

## **Travel Allowance (TA) :**

We recognise the difficulty of students from institutes outside Bangalore to attend this event. We are offering travel allowance for the students of the following institutes subject to rules:

- Birla Institute of Technology and Science, Goa
- Birla Institute of Technology and Science, Hyderabad
- Chennai Mathematical Institute
- Indian Institute of Science Education and Research, Bhopal
- Indian Institute of Science Education and Research, Pune
- Indian Institute of Science Education and Research, Thiruvananthapuram



IISc  
Bangalore

Title Sponsor  
**AIRBUS**

2018  
**Pravega**  
Indian Institute of Science

- Indian Institute of Science Education and Research, Tirupati
- Indian Institute of Space Science and Technology, Thiruvananthapuram
- Indian Institute of Technology, Bombay
- Indian Institute of Technology, Hyderabad
- Indian Institute of Technology, Madras
- National Institute of Science Education and Research, Bhubhaneshwar
- National Institute of Technology, Calicut
- National Institute of Technology, Surathkal
- National Institute of Technology, Tiruchirappalli
- National Institute of Technology, Warangal
- UMDAE-Center for Excellence in Basic Sciences
- University of Hyderabad

## Rules for availing TA :

1. TA will be paid to only one team from each institute. If more than one team participates from an institute, the team that gets the highest marks in the prelims from that institute will get TA.
2. TA will be calculated on the basis of standard (not tatkal) sleeper train fare from the location of institute to Bengaluru.
3. The prize money given above does not include TA. TA will be given in addition to prize money (if the team has been offered any prize money).
4. Instructions on how to collect TA will be issued at the venue of the competition.
5. For any dispute regarding TA, the decision of the organisers of Decoherence will be final.

## Contact :

For more information about Decoherence, contact:

Jeet Shah

Email: [jeet@pravega.org](mailto:jeet@pravega.org)

For more information about Pravega, visit <http://pravega.org>



IISc  
Bangalore

Title Sponsor  
**AIRBUS**

**Pravega** 2018  
Indian Institute of Science