

**UGC – Human Resource Development Centre
Jawaharlal Nehru University, New Delhi**

**1st Refresher Course in Physics
5th October – 30th October, 2015**

Course coordinators:

1. Dr. Aranya Bhuti Bhattacharjee

School of Physical Sciences, JNU

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2. Dr Kedar Singh

School of Physical Sciences, JNU

Email: kedar@mail.jnu.ac.in, kedarbhp@rediffmail.com

1. Summary

| | |
|---|----|
| Total no. of applicants Selected by selection Committee | 45 |
| Total no. of confirmations till 24 th October 2015 | 32 |
| Total no. of cancellations/No response | 13 |
| Total no. of applicants reported | 28 |
| Total no. of last minute cancellations | 4 |

2. List of participants

| Sr. No. | NAME | STATE |
|---------|---------------------------|----------------|
| 1 | AMAN PAL SINGH | UTTAR PRADESH |
| 2 | ANANT PANDEY | DELHI |
| 3 | B. RAVINDER REDDY | TELANGANA/ AP |
| 4 | BALAJI BIRAJDAR | DELHI |
| 5 | BHAWANA JOSHI | UTTAR PRADESH |
| 6 | DHARMENDRA SINGH | JHARKHAND |
| 7 | DIVYA HARIDAS | DELHI |
| 8 | FARHIN HAZARIKA | ASSAM |
| 9 | GOPI SHARMA | PUNJAB |
| 10 | HARSUPREET KAUR | DELHI |
| 11 | INDRA SEN RAM | DELHI |
| 12 | J. EBENEZAR | TAMIL NADU |
| 13 | JAGJIWAN RAM BALAI | DELHI |
| 14 | JASMEET SINGH | DELHI |
| 15 | KALPANA MASKI | MADHYA PRADESH |
| 16 | LALIT KUMAR | DELHI |
| 17 | MADHURJYA MODHUR BOGOHAIN | ASSAM |
| 18 | MAHIPAL SINGH | UTTARAKHAND |
| 19 | MAYA VERMA | DELHI |
| 20 | MOHD. SHAHID KHAN | DELHI |
| 21 | PRADEEP KUMAR | DELHI |
| 22 | RISHI PAL SINGH | UTTAR PRADESH |
| 23 | SIMANTA HAZARIKA | ASSAM |
| 24 | SONIA LUMB | DELHI |
| 25 | SUNIL KUMAR | UTTAR PRADESH |
| 26 | SURESH KUMAR | DELHI |
| 27 | UPDESH VERMA | UTTAR PRADESH |
| 28 | VIKASH DUBEY | UTTARAKHAND |

3. Schedule

Yoga Classes from 6.00am to 7.00am thrice a week Monday, Wednesday, & Friday
WEEK -I

| DATE | 9:30am-10: 30am | 11:00am-01: 00pm | 01:00pm-2:00pm | 2.15pm to 3.30pm | 3:45pm-5:00 pm |
|------------------------------------|--|--|----------------|---|---|
| Monday, 05th October2015 | <i>Registration</i> | “Combined Inaugural Session” Prof. Pramath Raj Sinha <i>“Higher Education in India: Vision 2030”</i> | Lunch | Prof. R. Ramaswamy <i>“What Biology does to Physics”</i> | Prof. Patrick Das Gupta <i>“Relativistic quantum mechanics - Dirac equation, anti-particles and quantum spin”</i> |
| DATE | 9:30am-11: 00am | 11:30am-01: 00pm | 01:00pm-2:00pm | 2.15pm to 3.30pm | 3:45pm-5:00 pm |
| Tuesday, 06th October 2015 | Prof. Subhasis Ghosh <i>“Physics of low dimensional Systems I.”</i> | Prof. Patrick Das Gupta <i>“Two dimensional hexagonal lattice and Dirac equation - Bose-Einstein condensates and Graphene”</i> | Lunch | Dr. Aranya B. Bhattacharjee <i>“The Enigma of Optical Momentum”</i> | Prof. Daksh Lohia <i>“Impact of electromagnetic theory on early 20th century physics”</i> |
| Wednesday, 07th October 2015 | Prof. Debashish Ghoshal <i>“Solving Quantum Problems by Factorizing Hamiltonians - I”</i> | Prof. A.K. Rastogi <i>“Classical measurements and discoveries in physics”</i> | Lunch | Prof. Amitabh Mukherjee <i>“Challenges in teaching Physics”</i> | Prof. Subhasis Ghosh <i>“Physics of Low Dimensional Systems II”</i> |
| Thursday, 08th October 2015 | Prof. A.K. Rastogi <i>“Physics at low temperatures”</i> | Prof. Subir Sarkar <i>“Pedagogical use of computation in Physics - I”</i> | Lunch | Dr. Avdhesh Prasad <i>“Synchronization in coupled systems”</i> | Dr. Sourin Das <i>“Introduction to concept of Berry phase (geometric phase) in quantum mechanics”</i> |
| Friday, 09th October 2015 | Prof. Debashish Ghoshal <i>“Solving Quantum Problems by Factorizing Hamiltonians - II”</i> | Prof. Subir Sarkar <i>“Pedagogical use of computation in Physics - II”</i> | Lunch | Prof. Debjyoti Choudhury <i>“Kepler and the Hydrogen Problem”</i> | Prof. Debjyoti Choudhury <i>“Symmetries and Forces”</i> |

WEEK- II

| <i>DATE</i> | 9:30am-11: 00am | 11:30am-01: 00pm | 01:00pm-2:00pm | 2.15pm to 3.30pm | 3:45pm-5:00 pm |
|------------------------------------|---|---|-----------------------|--|--|
| Monday, 12th October 2015 | Prof. Satyabrata Patnaik <i>“New Materials for energy storage and transmission”</i> | Dr. Subhadeep De <i>“An Overview of Atomic Clocks”</i> | Lunch | Dr. Subhadeep De <i>“Optical Atomic Clocks”</i> | Prof. Vinay Gupta <i>“Surface Plasmon Resonance Technique: A versatile tool to probe optical property of unknown materials and efficient optical sensors”.</i> |
| Tuesday, 13th October 2015 | Prof. Satyabrata Patnaik <i>“Quasiparticles and its experimental manifestation”</i> | Dr. Ashim Kr. Pramanik <i>“Superconductivity: Refreshing memories”</i> | Lunch | Dr. Rabindra Nath Mahato <i>“Structural, magnetic and magneto caloric properties of perovskite oxides”</i> | Dr. Sourin Das <i>“Application of Berry phase in quantum electronics”.</i> |
| Wednesday, 14th October 2015 | Dr. Amita Chandra <i>“Solid State Ionics: How it began”</i> | Dr. Amita Chandra <i>“Solid state devices using confined geometry”</i> | Lunch | Dr. Virendra Shanker <i>“Development of Luminescent Materials and Devices for Displays”</i> | Dr. D. Haranath <i>“Progress in Nanophase Luminescent Materials for Strategic Applications”</i> |
| Thursday, 15th October 2015 | Prof. Sanjay Puri <i>“Kinetics of Phase Transitions”</i> | Dr. Rabindra Nath Mahato <i>“Fabrication and characterization of organic semiconductor devices”</i> | Lunch | Dr. Sobhan Das <i>“Molecular Spectroscopy :An overview”</i> | Dr. Tanuja Mohanty <i>“Surface Studies of Nanomaterials”</i> |
| Friday, 16th October 2015 | Dr. Sankalpa Ghosh <i>“Ultra-cold atoms in artificial gauge field: A general introduction “</i> | Dr. Sankalpa Ghosh <i>“Massless dirac fermions in scalar and vector potentials and their optical analogy with a special reference to Graphene”.</i> | Lunch | Dr. Sobhan Das <i>“Applications of molecular spectroscopy”</i> ; | |

WEEK- III

| DATE | 9:30am-11: 00 am | 11:30am-01:00 pm | 01:00pm-2:00pm Lunch | 2:15pm to 3:30pm | 3:45pm-5:00pm |
|---------------------------------|---|--|---------------------------------|--|---|
| Monday, 19th October 2015 | Dr. Ashim Kr. Pramanik <i>“Transition Metal Oxides”</i> | Dr Shefali Kanwar <i>“Deformation study in nuclear structure and low energy fusion-fission reaction”</i> | Lunch | Prof. Tabish Qureshi <i>“Introduction to Quantum Information and Quantum Cryptography”</i> | Prof. T. R. Seshadri <i>“Structures in the Universe”</i> |
| Tuesday, 20th October 2015 | Dr. Anu Venugopalan <i>“Quantum Information-I: Quantum Cryptography”</i> | Prof. V K Tripathi <i>“Laser Driven Fusion”</i> | Lunch | Prof. Tabish Qureshi <i>“Quantifying Wave-Particle Duality”</i> | Dr. Kedar Singh <i>“Recent Developments in Quantum Dots”</i> |
| Wednesday, 21st October 2015 | Dr. Anu Venugopalan <i>“Quantum Information – II : Quantum Teleportation”</i> | Prof. Rita Kakkar <i>“Molecular Spectroscopy I”</i> | Lunch | Prof. Rita Kakkar <i>“Molecular Spectroscopy II”</i> | Dr. Poonam Mehta <i>“Neutrinos and New Physics”</i> |
| Thursday, 22nd October 2015 | Dussehra Holiday | | | | |
| Friday 23rd October 2015 | Dr. Deepak Tripathy <i>“Recent Developments in Plasma Physics”</i> | Prof. Ramesh Agarwal <i>“Data Mining Techniques for Astronomy”</i> | Lunch | Dr. Brijesh Kumar <i>“Correlated Quantum Systems-I”</i> | Dr. Aranya B. Bhattacharjee <i>“Ultra-cold quantum gases”</i> |

WEEK - IV

| DATE | 9:30am-11: 00 am | 11:00am-01: 00pm | 01:00pm to 2:00pm Lunch | 2:15pm to 3:30pm | 3:45pm-5: 00 pm |
|---|---|--|--|--|--|
| Monday, 26 th October 2015 | AIRF VISIT | | | | |
| Tuesday, 27 th October 2015 | Dr. Ravi Kant Choubey <i>“Nonlinear Optics I”</i> | Prof. Ramesh Agarwal <i>“Neural Network for classification and foreca”</i> | Lunch | Dr. Brijesh Kumar <i>“Correlated Quantum Systems-II”</i> | Dr. Ravi Kant Choubey <i>“Nonlinear Optics II”</i> |
| Wednesday, 28 th October 2015 | 10.00 am – 1.00 pm <i>“EVALUATION”</i> Dr. Ashim Kr. Pramanik | | Lunch | 02.00 pm – 05.00 pm <i>“EVALUATION”</i> Dr. Rabindra Nath Mahato | |
| Thursday, 29 th October 2015 | 10.00 am – 1.00 pm <i>“EVALUATION”</i> Dr. Poonam Mehta | | | | |
| Friday, 30 th October 2015 | 09.30 am to 10.00 am <i>“Feed Back Session”</i> | 10.00 am to 10.30 am <i>“Photo Session”</i> | 11.00 am to 12.00 pm <i>“Combined Interactive Session in the Committee Room”</i> | | |