

#### "Education for Knowledge, Science, and Culture" - Shikshanmaharshi Dr. Bapuji Salunkhe

#### Shri Swami Vivekanand Shikshan Sanstha's

# Vivekanand College, Kolhapur (Autonomous)



### B.Sc. Physics CO-PO attainment 2020-21

### CO attainment

| Course Code     | Course Name  | CO Target | CO<br>attainment | Full<br>Attained<br>or Not | Action<br>Taken                   |
|-----------------|--|-----------|------------------|----------------------------|-----------------------------------|
| C1(DSE-1001E1)  | Classical Mechanics and<br>Quantum Mechanics                                   | 3         | 2.8              | Not<br>Attained            | Need to focus on CIE              |
| C2 (DSE-1001E2) | Nuclear and Particle Physics and Mathematical Physics                          | 3         | 2.8              | Not<br>Attained            | Need to focus on CII              |
| C3 (DSE-1001F1) | Semiconductor Devices and<br>Instrumentation and<br>Elements of Modern Physics | 3         | 1.2              | Not<br>Attained            | Need of focus of ESE and CIE both |
| C4 (DSE-1001F2) | Solid State Physics  | 3         | 2.6              | Not<br>Attained            | Need to focus on CIE              |



### PO attainment

| POs | PO attainment | Level     |
|-----|---------------|-----------|
| PO1 | 2.350         | Excellent |
| PO2 | 2.340         | Excellent |
| PO3 | 2.309         | Excellent |
| PO4 | 2.222         | Excellent |
| PO5 | 2.200         | Excellent |

## PSO attainment

| PSOs | PSO attainment | Level     |
|------|----------------|-----------|
| PSO1 | 2.350          | Excellent |
| PSO2 | 2.350          | Excellent |
| PSO3 | 2.309          | Excellent |
| PSO4 | 2.332          | Excellent |



#### PO's of B.Sc. programme

- 1. Acquire the knowledge with facts.
- 2. Acquire the skills in handling scientific instruments.
- 3. Develop scientific outlook with respect to science subjects.
- 4. Analyse the given scientific data critically and systematically.
- 5. Realize ethical moral and social values in personal and social life.

#### PSO's of B.Sc. (Physics) programme:

- 1. Understand basic mechanics and properties of matter.
- 2. Students should understand mathematical concepts needed for understanding Physics.
- 3. Students should understand fundamental basic theories of General Physics, Classical Mechanics. Quantum mechnics, Electricity and magnetism, Modern Physics, Space Science. Semiconducts Physics and able to apply this knowledge to analyze the variety of physics phenomenon.
- 4. Students should learn laboratory skills, students should take measurements in Physics laboratory and analyze the measurements to draw valid conclusions.



#### B. Sc. Part – I Semester -I PHYSICS (Syllabus w.e.f. 2018-19)

Course Code: DSC1001A

#### Mechanics

Course Outcomes: After the completion of the course the student will be able to -

CO1: Demonstrate and understand the basic primary knowledge of Mechanics theories in Physics and develop the critical skill in students to understand mechanics.

CO2: get a proficiency in solving problems in Vectors, Ordinary Differential Equations, basic concepts of dot product, cross product, Ordinary Differential Equations, laws of motion, rotational motion, momentum.

CO3: get a proficiency in solving problems in Elasticity, gravitation, oscillation, Differential equation of Simple harmonic motion, special theory of relativity etc.

CO4: Understand the basic concepts of elastic constants, gravitation and Kepler's laws, Simple harmonic motion, etc.

#### B. Sc. Part - I Semester - II Physics

Course Code: DSC1001

**Electricity and Magnetism** 

Course Outcomes: After the completion of the course the student will be able to -

CO1: Demonstrate and understand the basic primary knowledge of Electricity, Magnetism end Electromagnetic Theory and will demonstrate a proficiency in solving problems in Thevenin's theorem, and Norton's theorem, magnetism, electrostatics etc.

CO2: Understand the basic concepts of Ballistic galvanometer, networks theorem, magnetostatics end electrostatics, electricity, and magnetism etc.

CO3: get a proficiency in solving problems in gradient, divergence, Curl and their significance. Vector Integration, Line, surface and volume integrals of Vector fields, Maxwell's equations, and Electromagnetic wave propagation.

CO4: Understand the basic concepts of gradient, divergence, Curl and their significance, Gauss-divergence theorem and Stoke's theorem of vectors, Electromagnetic Induction. Maxwell's equations, and Electromagnetic wave propagation etc.

### B. Sc. Part – II Semester -III PHYSICS (Syllabus w.e.f. 2019-20)

Course Code: DSC1001C

### Thermal Physics, Statistical Mechanics, Waves and Optics Part I

Course Outcomes: After the completion of the course the student will be able to -

CO1: Demonstrate and understand the basic primary knowledge of Thermal Physics, Statistical Mechanisms, and Optics.

CO2: get a proficiency in solving problems in Thermal Physics, Statistical Mechanics,

CO3: Understand the basic concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of kinetic theory of gases, transport phenomena, the file of the concepts of

oscillations, oscillations of different frequencies, Lissajous figures, coupled oscillations, ultrasonic waves their applications, acoustic of building and reverberations

CO4: Develop the critical skill in students to understand Thermal Physics, Statistical Mechanics, waves and Optics.

#### B. Sc. Part – II Semester -IV PHYSICS

Course Code: DSC1001D

### Thermal Physics, Statistical Mechanics, waves and Optics Part II

Course Outcomes: After the completion of the course the student will be able to -

CO1: Demonstrate and understand the basic primary knowledge of Electricity, Magnetism and Electromagnetic Theory and will demonstrate a proficiency in solving problems in Thevenin's theorem, and Norton's theorem, magnetism, electrostatics etc.

CO2: Understand the basic concepts of Ballistic galvanometer, networks theorem, magnetostatics and electrostatics, electricity, and magnetism etc.

CO3: get a proficiency in solving problems in gradient, divergence, Curl and their significance, Vector Integration, Line, surface and volume integrals of Vector fields, Maxwell's equations, and Electromagnetic wave propagation.

CO4: Understand the basic concepts of gradient, divergence, Curl and their significance, Gauss-divergence theorem and Stoke's theorem of vectors, Electromagnetic Induction, Maxwell's equations.

#### B. Sc. Part - III Semester -V PHYSICS

Course Code: DSC1001E1

### Classical Mechanics and Quantum Mechanics

CO's: After completion, students are able to

CO<sub>1</sub>: demonstrate and understand the knowledge of classical and quantum mechanics.

CO<sub>2</sub>: get a proficiency in solving problems in classical and quantum mechanics.

CO<sub>3</sub>: understand the basic concepts like Virtual work, D'Alembert's Principle, Lagrangian and Hamilton Principle, Euler's Theorem, Elastic and inelastic scattering, De-Broglie's Hypothesis, Schrodinger's Equations, Operators, Hydrogen Problems, Eigen's values and functions.

CO<sub>4</sub>: develop the critical skill in students to understand classical and quantum mechanics.

#### B. Sc. Part – III Semester -V PHYSICS

Course Code: DSC1001E2

### Nuclear and Particle Physics and Mathematical Physics

CO's: After completion, students are able to

CO1: demonstrate and understand the knowledge of Nuclear and Particle Physics and Mathematical Physics

CO2: get a proficiency in solving problems in Nuclear and Particle Physics and Mathematical Physics

CO<sub>3</sub>: understand the basic concepts like properties of nucleus, nuclear forces, nuclear models, nuclear reactions, accelerators and detectors and various co-ordinate systems, Differential equations, complex numbers, Fourier series and integrals etc.

CO<sub>4</sub>: develop the critical skill in students to understand Nuclear and Particle Physics and Mathematical Physics.

#### B. Sc. Part - III Semester -VI PHYSICS

Course Code: DSC1001F1

### Semiconductor devices and instrumentation and elements of modern physics

CO's: After completion, students are able to

CO<sub>1</sub>: demonstrate and understand the knowledge of Semiconductor devices and modern physics

CO<sub>2</sub>: demonstrate a proficiency in solving problems in Semiconductor devices and modern physics

CO<sub>3</sub>: understand the basic concepts like transistor, diodes, SCR, Solar cell, Photocell, LRD, etc. and vector atom model, Zeeman effect, laser technology, etc.

CO<sub>4</sub>: develop the critical skill in students to understand Semiconductor devices and modern physics.

#### B. Sc. Part - III Semester -VI PHYSICS

Course Code: DSC1001F2

### Solid State Physics I and Solid-State Physics II

CO's: After completion, students are able to

CO<sub>1</sub>: demonstrate and understand the knowledge of crystal structure, lattice theory, magnetic properties and band theory, dielectric properties, X-ray diffraction, etc.

CO<sub>2</sub>: demonstrate a proficiency in solving problems in solid state physics.

CO<sub>3</sub>: understand the basic concepts like crystal structure, types of crystal, miller indices, defects, lattree constants, etc. and superconductivity, Types of superconductors, etc.

CO<sub>1</sub>: develop the critical skill in students to understand the basic theory of solid state physics which is used for further higher studies.



# Articulation matrix for all courses taught in B.Sc. Physics programme

|                |               |        |               | Sc.III F |          |               | ec mercine |        |                  |
|----------------|---------------|--------|---------------|----------|----------|---------------|------------|--------|------------------|
|                | CO-           | PO, CO | )-PSO         | Mappi    | ng Art   | iculatio      | n Matrix   |        |                  |
|                |               |        | Cour          | se I (DS | SE1001   | E1)           |            |        |                  |
| outcome        | PO1           | PO2    | PO3           | PO4      | PO5      | PSO1          | PSO2       | PSO3   | PSO4             |
| 201            | 3             | 2      | 1             | 1)       | 2        | 3             | 3          | 2      | 2                |
| CO2            | 3             | 3      | 2             | 1,       | 3        | 3             | 3          | 2      | 2                |
| CO3            | 3             | 3      | 2             | 1        | 2        | 3             | 3          | 2      | 2                |
| CO4            | 3             | 3      | 3             | 1        | 3        | 3             | 3          | 2      | 2                |
| <br>\verage    | 3             | 2.75   | 2             | 1        | 2        | 3             | 3          | 2      | 2                |
|                |               |        |               |          |          |               |            |        |                  |
|                |               |        |               |          |          |               |            |        |                  |
|                |               |        |               |          |          |               |            | l      | 1                |
|                |               |        |               | Cour     | se II (I | <b>OSE100</b> | 1E2)       |        |                  |
|                | PO1           | PO2    | PO3           | PO4      | PO5      | PSO1          | PSO2       | PSO3   | PSO4             |
| CO1            | 3             | 3      | 3             | 3        | 1        | 3             | 3          | 3      | 2                |
| CO2            | 3             | 3      | 3             | 2        | 1        | 3             | 3          | 3      | 2                |
| CO3            | 3             | 3      | 3             | 2        | 1        | 3             | 3          | 3      | 2                |
| CO4            | 3             | 3      | 3             | 3        | 1        | 3             | 3          | 3      | 1                |
| Average        | 3             | 3      | 3             | 2.5      | 1        | 3             | 3          | 3      | 2                |
|                |               |        |               |          |          |               |            |        |                  |
|                |               |        |               | V        |          |               |            |        |                  |
|                |               |        |               |          |          |               |            |        |                  |
|                |               |        |               | Cour     | se III   | (DSE10        | 01F1)      |        |                  |
| Outcome        | POI           | PO2    | PO3           | PO4      | PO5      | PSOI          | PSO2       | PSO3   | PSO4             |
| COI            | 3             | 3      | 3             | 3        | 1        | 3             | 3          | 3      | 2                |
| CO2            | 3             | 3      | 3             | 3        | 1        | 3             | 3          | 3      | 2                |
| CO3            | $\frac{3}{3}$ | 3      | 3             | 2        | 1        | 3             | 3          | 3      | 1                |
| CO4            | 3             | 3      | 3             | 3        | 1        | 3             | 3          | 3      | 2                |
| Average        | 3             | 3      | 3             | 2.75     | 1        | 3             | 3          | 3      | 1.7:             |
| Average        |               |        |               |          |          |               |            |        |                  |
|                |               |        |               |          |          |               |            |        |                  |
|                |               |        |               |          |          |               |            |        |                  |
|                |               |        |               | Cou      | rse IV   | (DSE10        | 01F2)      |        |                  |
| Outcomo        | POI           | PO2    | PO3           | PO4      | PO5      | PSOI          | PSO2       | PSO3   | PSO <sub>2</sub> |
| Outcome<br>CO1 | 3             | 3      | 3             | 3        | 1        | 3             | 3          | 3      | 2                |
|                | 3             | 3      | $\frac{3}{3}$ | 3        | 1        | 3             | 3          | 3      | 2                |
| CO2            | 3             | 3      | 3             | 2        | 1        | 3             | 3          | 3      |                  |
| CO3            | 3             | 3      | $\frac{3}{3}$ | 3        | 1        | 3             | 3          | 3      | 2                |
| CO4            | 3             | 3      | $\frac{3}{3}$ | 2.75     |          | 3             | 3          |        | 1.1              |
| Average        | _)            | .,     | J             |          |          |               |            | *WEGAN | ESTO             |

| Chart:   |
|----------|
| MERKS    |
| Students |

| No.         Appetite of the student of the studen                               |          |                         | v+/Int mar | ks for CO               | attainmer               | nt Direct I             | Aethod (P               | hysics B.Sc     | (E ::       |                |             |
|--|----------|-------------------------|------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------------|-------------|----------------|-------------|
| Homitico Intro Ruther   Internal   External   Internal   Interna |          |                         | Roll No    | Course I (DSE           | 1001E1)                 | Course II (DS           | E1001E2)                | Course III (DSE | 1001F1)     | Course IV (DSE | E1001F2)    |
| Patient Annie   Patient Anni | Sr.      | Name of the Student     | 200        | בסמו זה ו (בס           |                         |                         |                         | 1000            | Internal    | External       | Internal    |
| Abstraction of Channel         8001         72         18         80         18         56         15         72           Absished Ashlot Channel         8002         80         19         80         18         48         16         68           Santosh Vashude Dayma         8002         80         12         80         19         52         16         66           Abstractay Vashud Ghorpade         8004         80         12         80         19         66         16           Akthul Sancebuda         8005         60         18         80         18         60         18         66           Phykhril Sancebuda         8007         60         18         80         18         60         18         60           Phykhril Sancebuda         8007         60         18         80         18         76         18         60           Sanife Sanjay Khandekar         8003         60         18         80         18         80         18         60         18         60           Sanife Sanjay Khandekar         8001         68         18         80         18         60         18         60         18         60         1  | No       |                         |            | External<br>(Out of 80) | Internal<br>(Out of 20) | External<br>(Out of 80) | Internal<br>(Out of 20) | (Out of 80)     | (Out of 20) | (Out of 80)    | (Out of 20) |
| Ramericandical Astrock Cirabactin         800.02         80         19         80         18         48         16         68           Santostic Astrock Cirabactin         800.03         60         12         80         19         52         16         64           Santostic Astrock Coaywili         800.03         60         12         80         19         52         16         64           Dattastray Vishnu Ghorpade         800.05         64         17         80         18         76         15         60           Nichil Sandoep Jadhav         800.05         60         18         80         18         76         18         60           Nichil Sandoep Jadhav         800.05         60         18         80         18         76         18         60           Sayli Santosh Koli         800.05         72         19         80         18         76         18         60           Sayli Santosh Koli         800.10         66         18         80         18         60         13         60           Sayli Santosh Koli         800.10         67         18         80         18         60         17         64           Akana  |          | -                       | 000        | 77                      | 4                       | 80                      | 18                      | 26              | 15          | 72             | 18          |
| Abilishek Ashlok Dayma         8002         60         12         80         19         55         16         64           Santoshi Vastodev Gavalin         8003         60         12         80         15         36         15         64           Dattarshi Vastodev Gavalin         8004         80         18         76         15         36         16         64           Ruttija Ravindra Curlav         8005         60         18         80         18         76         18         66           Projata Sanjay Khandekar         8007         60         18         80         16         48         17         60           Projata Sanjay Khandekar         8009         72         19         80         18         80         18         76         13         66           Sayli Santosk Kolin         8009         72         19         80         18         80         19         67         14           Sayli Santosk Kolin         801         68         16         80         18         80         17         68           Akansira Binimao Patil         801         68         16         80         18         61         17         68  | $\vdash$ | Ramchandra Ashok Chavan | SOOS       | 2,                      | 10                      | CX                      | 200                     | 48              | 16          | 89             | 15          |
| Santosh Vasudev Gavali         8003         60         12         50         15         56         64           Dattatray Vishnu Ghorpade         8004         80         18         76         15         36         15         60           Putuja Ravindra Gurav         8005         64         17         80         18         76         18         60           Nikhil Sandedeep Jadhav         8006         60         18         80         18         76         18         60           Pryanka S. Ranade         8007         64         17         80         18         76         18         60           Pryanka S. Ranade         8009         72         19         80         18         80         18         76         14         44           Pooja Sanjay Khandekar         8009         72         19         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18         80         18  | 2        | Abishek Ashok Dayma     | 8007       | 80                      |                         |                         | 7 0                     | 52              | 16          | 64             | 15          |
| Datatatray Vishtan Ghorpade         8004         80         18         76         15         50         19         60           Rutuja Ravindra Gurav         8005         64         17         80         19         52         9         60           Nithil Sandeep Jadhav         8006         60         18         80         18         76         18         <  | 3        | Santosh Vasudev Gavali  | 8003       | 09                      | 17                      | 08                      | CT :                    | 20              | 7           | 8              | 1,3         |
| Riching Ravindra Gurav         8005         64         17         80         19         52         50         60           Nikhil Sandeep Jadhav         8006         60         18         80         18         76         18         60           Priyanka S. Kanade         8007         64         18         80         16         48         14         60           Pooja Sanjav Khandekar         8008         72         19         80         16         48         14         60           Sayli Santosh Kolin         8001         68         18         80         18         60         13         68           Sayli Santosh Kolin         8011         68         18         80         18         60         13         68           Sayli Santosh Kolin         8011         68         16         80         18         60         13         68           Gayli Santosh Kolin         8011         68         16         80         18         60         17         68           Gayli Santosh Kolin         8012         68         16         80         18         61         61         61           Mandar Dyandev Patil         8015   | 4        | -                       | 8004       | 80                      | 18                      | 76                      |                         | 36              | CT          | 40             | 7 7         |
| Nikhigandeed Jacksen Seed         660         18         80         18         48         15         60           Priyanke S. Kanade         8007         64         17         80         18         76         18         76         18         76         18         76         18         76         18         76         18         76         18         76         18         76         18         76         18         76         13         66         76         18         76         13         66         76         18         76         13         66         76         18         76         13         66         76         14         44   | .   4    | +                       | 8005       | 64                      | 17                      | 80                      | 19                      | 52              | 6           | 09             | 21          |
| Vikility Sanderey South         800         17         80         18         76         18         72           Proje Sanderey South         8008         60         18         80         16         48         14         60           Proje Sanderey Koli         8008         60         18         80         19         66         13         66           Sammed Rajendra Latthe         8010         68         16         80         18         60         14         66           Gaurav Gaotam Mane         8011         68         16         80         18         64         17         64           mayuresh Laxman More         8012         68         16         80         18         64         17         64           Aranja D. Patil         8013         64         18         80         19         67         17         64           Anuja D. Patil         8014         80         18         80         19         66         17         64           Anuja D. Patil         8015         68         18         80         18         60         17         64           Anuja D. Patil         8016         80         18  |          | +                       | 8006       | 09                      | 18                      | 80                      | 18                      | 48              | 15          | 09             | 1/          |
| Projective Almanue         800         18         80         16         48         14         60           Poojs Sanjay Khandekar         8008         72         19         80         19         60         13         68           Sayli Santok Khandekar         8009         72         19         80         19         60         13         68           Sayli Santok Khandekar         8010         68         16         80         18         60         17         64           Gaurav Gaotam Mane         8011         68         16         80         18         60         17         64           mayuresh Laxman More         8012         68         16         80         18         60         17         64           Akansina Bhimrao Patil         8014         80         18         80         18         60         17         68           Anuja D. Patil         8016         78         18         80         18         80         18         60         17         64           Anuja D. Patil         8016         18         80         18         80         18         18         18         18         18         18  | 1 0      | +                       | 8007       | 64                      | 17                      | 80                      | 18                      | 92              | 18          | 72             | 15          |
| Pooja Sanjay Khandekar         Sout         Color         Color<   |          | -                       | 0000       | 9                       | α -                     | 80                      | 16                      | 48              | 14          | 09             | 11          |
| Sayli Santosh Koli         8009         72         19         60         18         50         18         50         18         50         18         40         44         44           Sammed Rajendra Latthe         8010         68         16         80         18         40         17         64           Gaurav Gaotam Mane         8011         68         16         80         18         60         17         64           Akanstra Brimmao Patil         8013         64         16         80         18         80         17         68           Akanstra Brimmao Patil         8014         76         18         80         19         60         17         68           Akanstra Brimmao Patil         8014         76         18         80         19         60         17         68           Anuja D. Patil         8015         72         18         80         18         60         15         62         17         64           Onmkar J. Patil         8018         68         18         80         19         72         18         72         18         72         18         72         18         72         18         <  | ∞        | -                       | 0000       |                         | 2 6                     | Co                      | 10                      | 09              | 13          | 89             | 15          |
| Sammed Rajendra Latthie         801         68         18         80         18         90         18         90         18         90         18         90         18         90         17         64         90           Gaurav Gaotam Mane         8011         68         16         80         18         64         17         64         16         80         18         64         17         64         80         10         68         17         64         80         10         68         17         68         80         10         68         17         68         80         10         68         17         68         80         10         68         17         68         70         80         10         60         17         64         80         10         60         10         60         10         60         10         60         10         60         10         60         10         60         10         60         10         60         10         60         10         60         10         10         60         10         60         10         10         60         10         10         10         10 </td <td>6</td> <td>_</td> <td>8008</td> <td>7/</td> <td>TA</td> <td></td> <td>1</td> <td>99</td> <td>1/1</td> <td>44</td> <td>14</td>  | 6        | _                       | 8008       | 7/                      | TA                      |                         | 1                       | 99              | 1/1         | 44             | 14          |
| Gaurav Gaotam Mane         801         68         16         80         18         40         17         64           mayuresh Laxman More         8012         68         16         80         18         64         17         64           Akansha Bhimrao Patil         8013         64         16         80         18         76         17         68           Anuja D. Patil         8014         80         18         80         19         60         17         64           Anuja D. Patil         8015         76         18         80         19         68         15         64           Onkar Dhanaji Patil         8016         72         18         80         20         68         15         76           Onmkar J. Patil         801         68         18         80         19         64         15         76           Prajakta K. Patil         801         68         18         80         19         76         18         76           Prajakta K. Patil         802         18         80         19         76         18         60           Rajat J. patil         802         18         80         19   | 10       | -                       | 8010       | 89                      | 18                      | 80                      | XI.                     | ac :            | +   -       |                |             |
| Adamsha Bhimrao Patil         8012         64         16         80         18         64         17         64           Adamsha Bhimrao Patil         8013         64         16         80         18         76         17         68           Anuja D. Patil         8014         80         18         80         19         60         17         68           Anuja D. Patil         8015         76         18         80         19         66         17         64           Mandar Dyandev Patil         8016         72         18         80         20         68         15         72         17         64         72         <   | 11       | +                       | 8011       | 89                      | 16                      | 80                      | 18                      | 40              | 1/          | 04             |             |
| Akanasha Bhimrao Patil         8013         64         16         80         18         76         17         68           Akanasha Bhimrao Patil         8014         80         18         80         19         66         17         68           Anuja D. Patil         8015         76         18         80         19         66         17         64         72           Onkar Dhanaji Patil         8016         72         18         80         18         80         18         60         18         72         72           Onkar Dhanaji Patil         8016         72         18         80         18         60         18         72         18         72   | 17       | +-                      | 8012       | 89                      | 16                      | 80                      | 18                      | 64              |             | 94             |             |
| Anuja D. Patili         8014         80         18         80         19         60         17         72           Anuja D. Patili         8015         76         18         80         19         52         17         64           Mandar Dyandev Patili         8015         72         18         80         19         68         15         72         76           Onwkar Dhanaji Patili         8017         68         20         80         18         60         15         76   | 5        | ┿                       | 8013       | 64                      |                         | 80                      | 18                      | 2/2             |             | 89             |             |
| Anulja D. Patul         S015         76         18         80         19         52         17         64           Mandar Dyandev Patil         8015         72         18         80         18         80         15         72         72           Onkar Dhanaji Patil         8016         72         18         80         18         60         15         76         76           Onmkar J. Patil         8018         68         18         80         18         64         15         64         76         <  |          | Andribila Diffilias     | 8014       |                         |                         | 80                      | 19                      | 09              |             | 72             | 18          |
| Mandar Dyandev Patil         8015         70         18         80         10         68         15         75           Onkar Dhanaji Patil         8016         72         18         80         18         60         15         76           Onmkar J. Patil         8018         68         18         80         19         64         15         64           Prajakta K. Patil         8019         64         18         80         19         72         18         44           Prajakta K. Patil         8020         80         16         80         19         72         18         60           Rajat J. patil         8021         80         18         80         19         76         18         60           Saivogeetra S. Patil         8021         80         18         80         19         76         14         60           Vijayraj M. Patil         8023         65         17         80         19         66         80           Shivanand S. Sharbedre         8024         72         18         80         19         66         80           Pranav S. Sharbedre         8024         72         18         72  | 14       | -                       | 0000       |                         |                         | 08                      | 19                      |                 |             | 64             | 14          |
| Onkar Dhanaji Patil         801b         72         10         20 </td <td>15</td> <td>-</td> <td>8015</td> <td></td> <td></td> <td>08</td> <td>20</td> <td></td> <td>1</td> <td>72</td> <td>17</td>   | 15       | -                       | 8015       |                         |                         | 08                      | 20                      |                 | 1           | 72             | 17          |
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| Prajakta K. Patil         8018         68         18         80         19         64         19         64         19         64         19         64         19         64         19         64         18         64         44           Prakash A. Patil         8020         80         16         80         19         76         18         60         80           Saiyogeeta S. Patil         8021         80         18         80         19         76         14         60         80           Vijayraj M. Patil         8023         65         17         55         10         36         84         80         <  | 17       |                         | 8017       | 89                      | 7                       | 08                      | LO                      |                 |             | 64             |             |
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