



(2)

*Please write the sem., subject code and subject name in the respective column as per the Subject Reference List*

**CERTIFICATE FROM THE PRINCIPAL OF THE COLLEGE**  
(Certificate to be signed by the Principal of the College at which the candidate has studied.)

- SYTYBSc\_Sem\_2003 Revised 2008 (vocational) (07-2011)

S.Y. B.Sc (Sem. I ) students shall offer three out of four subjects offered by him in the First Year B.Sc. In addition, he shall offer one subject of one language. **Backlog students of Sem I (2003 Patt.) will have to appear for equivalence Sem . I (2008 Patt) subjects.**

### Semester I 2003 Pattern with Equivalence

| Subject Name                    | Equiv. New Subject code (2008 Patt) Paper I | Equiv . New Subject code (2008 Patt) Paper II | Equiv. New Subject code (2008 Patt) | Old Subject code 2003<br>Paper I, Paper II, Practical<br><br>(Only for office Information) |       |                |  |
|---------------------------------|---------------------------------------------|-----------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------|-------|----------------|--|
|                                 | (For Students ) (2003 Pattern)              |                                               |                                     | I                                                                                          | II    | III            |  |
| 11. Mathematics                 | 51132<br>(Practical)                        | 51111                                         | 511A1<br>or<br>511B1                | 21111                                                                                      | 21121 | 21131 OR 21141 |  |
| 12. Physics                     | 51211                                       | 512A1<br>or<br>512B1                          |                                     | 21211                                                                                      | 21221 |                |  |
| 13. Chemistry                   | 51311                                       | 51321                                         |                                     | 21311                                                                                      | 21321 |                |  |
| 14. Botany                      | 51411                                       | 51421                                         |                                     | 21411                                                                                      | 21421 |                |  |
| 15. Zoology                     | 51511                                       | 51521                                         |                                     | 21511                                                                                      | 21521 |                |  |
| 16. Geology                     | 51611                                       | 51621                                         |                                     | 21611                                                                                      | 21621 |                |  |
| 17. Statistics                  | 51711                                       | 51721                                         |                                     | 21711                                                                                      | 21721 |                |  |
| 18. Geography                   | 51811                                       | 51821                                         |                                     | 21811                                                                                      | 21821 |                |  |
| 19. Microbiology                | 51911                                       | 51921                                         |                                     | 21911                                                                                      | 21921 |                |  |
| 20. Exp. Psychology             | 52011                                       | 52021                                         |                                     | 22011                                                                                      | 22021 |                |  |
| 21. Stat. Techniques            | 52111                                       | 52121                                         |                                     | 22111                                                                                      | 22121 |                |  |
| 22. Electronic Science          | 52211                                       | 52221                                         |                                     | 22211                                                                                      | 22221 |                |  |
| 23. Defence & Strategic Studies | 52311                                       | 52321                                         | 52331                               | 22311                                                                                      | 22321 | 22331          |  |
| 24. Environmental Science       | 52411                                       | 52421                                         |                                     | 22411                                                                                      | 22421 |                |  |
| 32. English                     | 53011                                       |                                               |                                     | 23011                                                                                      |       |                |  |
| 33. Marathi                     | 53111                                       |                                               |                                     | 23111                                                                                      |       |                |  |
| 34. Hindi                       | 53211                                       |                                               |                                     | 23211                                                                                      |       |                |  |
| 35. Sanskrit                    | 53311                                       |                                               |                                     | 23311                                                                                      |       |                |  |
| 37. Arabic Functional           | 53711                                       |                                               |                                     |                                                                                            |       |                |  |
| 38. Urdu General Paper II       | 53811                                       |                                               |                                     |                                                                                            |       |                |  |

S.Y. B.Sc. (Sem.II) students shall offer three subject offered by him in the S.Y. B.Sc. (Sem.I) . In addition, he shall offer one subject of previous language and compulsory Environment Awareness (held at college only). (10+1=11 subjects). **Backlog students of Sem II (2003 Patt.) will have to appear for equivalence Sem. II (2008 Patt) subjects.**

### S.Y.B.Sc. (Semester Pattern)

#### Semester II 2003 Pattern with Equivalence

| Subject Name                                             | Equiv. New Subject code (2008 Patt) Paper I | Equiv. New Subject code (2008 Patt) Paper II | Equiv. New Subject code (2008 Patt) Paper III | Equiv. New Subject code (2008 Patt) Prac. | Old Subject code 2003 paper I, paper II, paper III, Practical<br><br>(Only for Office Information) |       |                |       |
|----------------------------------------------------------|---------------------------------------------|----------------------------------------------|-----------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------|-------|----------------|-------|
|                                                          |                                             |                                              |                                               |                                           | (For Students) (2003 Pattern)                                                                      |       |                |       |
|                                                          |                                             |                                              |                                               |                                           | I                                                                                                  | II    | III Pra.       |       |
| 11. Mathematics                                          | 51112                                       | 511A2                                        | 511B2                                         | 511B2                                     | 21112                                                                                              | 21122 | 21132 OR 21142 |       |
| 12. Physics                                              | 51212                                       | 51222                                        |                                               | 51232                                     | 21212                                                                                              | 21222 |                | 21232 |
| 13. Chemistry                                            | 51312                                       | 51322                                        |                                               | 51332                                     | 21312                                                                                              | 21322 |                | 21332 |
| 14. Botany                                               | 51412                                       | 51422                                        |                                               | 51432                                     | 21412                                                                                              | 21422 |                | 21432 |
| 15. Zoology                                              | 51512                                       | 51522                                        |                                               | 51532                                     | 21512                                                                                              | 21522 |                | 21532 |
| 16. Geology                                              | 51612                                       | 51622                                        |                                               | 51632                                     | 21612                                                                                              | 21622 |                | 21632 |
| 17. Statistics                                           | 51712                                       | 51722                                        |                                               | 51732                                     | 21712                                                                                              | 21722 |                | 21732 |
| 18. Geography                                            | 51812                                       | 51822                                        |                                               | 51832                                     | 21812                                                                                              | 21822 |                | 21832 |
| 19. Microbiology                                         | 51912                                       | 51922                                        |                                               | 51932                                     | 21912                                                                                              | 21922 |                | 21932 |
| 20. Exp. Psychology                                      | 52012                                       | 52022                                        |                                               | 52032                                     | 22012                                                                                              | 22022 |                | 22032 |
| 21. Stat. Techniques                                     | 52112                                       | 52122                                        |                                               | 52132                                     | 22112                                                                                              | 22122 |                | 22132 |
| 22. Electronic Science                                   | 52212                                       | 52222                                        |                                               | 52232                                     | 22212                                                                                              | 22222 |                | 22232 |
| 23. Defence & Strategic Studies                          | 52312                                       | 52322                                        |                                               | 52332                                     | 22312                                                                                              | 22322 |                | 22332 |
| 24. Environmental Science                                | 52412                                       | 52422                                        |                                               | 52432                                     | 22412                                                                                              | 22422 |                | 22432 |
| 32. English                                              | 53012                                       |                                              |                                               |                                           | 23012                                                                                              |       |                |       |
| 33. Marathi                                              | 53112                                       |                                              |                                               |                                           | 23112                                                                                              |       |                |       |
| 34. Hindi                                                | 53212                                       |                                              |                                               |                                           | 23212                                                                                              |       |                |       |
| 35. Sanskrit                                             | 53312                                       |                                              |                                               |                                           | 23312                                                                                              |       |                |       |
| 37. Arabic Functional                                    | 53712                                       |                                              |                                               |                                           |                                                                                                    |       |                |       |
| 38. Urdu General Paper II                                | 53812                                       |                                              |                                               |                                           |                                                                                                    |       |                |       |
| 36. Environmental Awareness (Compulsory at college only) | 59992                                       |                                              |                                               |                                           | 29992                                                                                              |       |                |       |

S.Y.B.Sc. (Sem. I) students shall offer three out of four subjects offered by him in the First Year B.Sc. In addition, he shall offer one subject of one language

**S.Y.B.Sc. (Semester Pattern )**

**Semester I**

| <b>SEM. I (Revised 2008 Pattern)</b> |                     |                     |                     |                                                            |
|--------------------------------------|---------------------|---------------------|---------------------|------------------------------------------------------------|
| <b>Subject Name</b>                  | <b>Subject Code</b> | <b>Subject Code</b> | <b>Subject Code</b> | <b>Subject Code (out of 40 (Practical) from Oct. 2011)</b> |
| 11. Mathematics                      | 51111               | 511A1               | OR 511B1            | 511511                                                     |
| 12. Physics                          | 51211               | 512A1               | OR 512B1            |                                                            |
| 13. Chemistry                        | 51311               | 51321               |                     |                                                            |
| 14. Botany                           | 51411               | 51421               |                     |                                                            |
| 15. Zoology                          | 51511               | 51521               |                     |                                                            |
| 16. Geology                          | 51611               | 51621               |                     |                                                            |
| 17. Statistics                       | 51711               | 51721               |                     |                                                            |
| 18. Geography                        | 51811               | 51821               |                     |                                                            |
| 19. Microbiology                     | 51911               | 51921               |                     |                                                            |
| 20. Exp.Psychology                   |                     |                     |                     |                                                            |
| 20. Psychology                       | 52011               | 52021               |                     |                                                            |
| 21. Stat.Techniques                  | 52111               | 52121               |                     |                                                            |
| 22. Electronic Science               | 52211               | 52221               |                     |                                                            |
| 23. Defence & Strategic Studies      | 52311               | 52321               | 52331               |                                                            |
| 24. Environmental Science            | 52411               | 52421               |                     |                                                            |
| 32. English                          | 53011               |                     |                     |                                                            |
| 33. Marathi                          | 53111               |                     |                     |                                                            |
| 34. Hindi                            | 53211               |                     |                     |                                                            |
| 35. Sanskrit                         | 53311               |                     |                     |                                                            |
| 37. Arabic Functional                | 53711               |                     |                     |                                                            |
| 38. Urdu General Paper II            | 53811               |                     |                     |                                                            |

S.Y.B.Sc. (Sem. II) students shall offer three subjects offered by him in the S.Y.B.Sc. (Sem. I). In addition, he shall offer one subject of previous language and compulsory Environmental Awareness (held at college only). (10+1=11 subjects)

**S.Y.B.Sc. (Semester Pattern )**

**Semester II**

| <b>SEMESTER II (2008 Pattern)</b>                         |                     |                      |                                             |                                                              |
|-----------------------------------------------------------|---------------------|----------------------|---------------------------------------------|--------------------------------------------------------------|
| <b>Subject Name</b>                                       | <b>Subject Code</b> | <b>Subject Code</b>  | <b>Subject Code (Practical) (out of 80)</b> | <b>Subject Code (Practical) (From Oct. 2011) (out of 40)</b> |
| 11. Mathematics                                           | 51112               | 511A2<br>OR<br>511B2 | 51132                                       | 51152                                                        |
| 12. Physics                                               | 51212               | 51222                | 51232                                       |                                                              |
| 13. Chemistry                                             | 51312               | 51322                | 51332                                       |                                                              |
| 14. Botany                                                | 51412               | 51422                | 51432                                       |                                                              |
| 15. Zoology                                               | 51512               | 51522                | 51532                                       |                                                              |
| 16. Geology                                               | 51612               | 51622                | 51632                                       |                                                              |
| 17. Statistics                                            | 51712               | 51722                | 51732                                       |                                                              |
| 18. Geography                                             | 51812               | 51822                | 51832                                       |                                                              |
| 19. Microbiology                                          | 51912               | 51922                | 51932                                       |                                                              |
| 20. Psychology                                            | 52012               | 52022                | 52032                                       |                                                              |
| 21. Stat. Techniques                                      | 52112               | 52122                | 52132                                       |                                                              |
| 22. Electronic Science                                    | 52212               | 52222                | 52232                                       |                                                              |
| 23. Defence & Strategic Studies                           | 52312               | 52322                | 52332                                       |                                                              |
| 24. Environmental Science                                 | 52412               | 52422                | 52432                                       |                                                              |
| 32. English                                               | 53012               |                      |                                             |                                                              |
| 33. Marathi                                               | 53112               |                      |                                             |                                                              |
| 34. Hindi                                                 | 53212               |                      |                                             |                                                              |
| 35. Sanskrit                                              | 53312               |                      |                                             |                                                              |
| 37. Arabic Functional                                     | 53712               |                      |                                             |                                                              |
| 38. Urdu General Paper II                                 | 53812               |                      |                                             |                                                              |
| *36. Environmental Awareness (Compulsory at college only) | 59992               |                      |                                             |                                                              |

T.Y.B.Sc. students shall offer one of the three subjects offered by him in Second Year B.Sc. as his Principal Subject.

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| Special Subject Code & Name   | T.Y.B.Sc. Semester Pattern 2003 SEMESTER III |       |       |       |       |               |                 |               |          |
|-------------------------------|----------------------------------------------|-------|-------|-------|-------|---------------|-----------------|---------------|----------|
| Theory Paper                  | I                                            | II    | III   | IV    | V     | VI            | VII             | VIII          | IX       |
| 11. (A) Mathematics           | 31113                                        | 31123 | 31133 | 31143 | 31153 | 31163         | Elective Code   | Elective Code |          |
| 12. (B) Physics               | 31213                                        | 31223 | 31233 | 31243 | 31253 | Elective Code |                 |               |          |
| 13. (C) Chemistry             | 31313                                        | 31323 | 31333 | 31343 | 31353 | Elective Code |                 |               |          |
| 14. (D) Botany                | 31413                                        | 31423 | 31433 | 31443 | 31453 | 31463         |                 |               |          |
| 15. (E) Zoology               | 31513                                        | 31523 | 31533 | 31543 | 31553 | 31563         |                 |               |          |
| 16. (F) Geology               | 31613                                        | 31623 | 31633 | 31643 | 31653 | 31663         |                 |               |          |
| 17. (G) Statistics            | 31713                                        | 31723 | 31733 | 31743 | 31753 | Elective Code |                 |               |          |
| 18. (H) Geography             | 31813                                        | 31823 | 31833 | 31843 | 31853 | 31863         |                 |               |          |
| 19. (I) Microbiology          | 31913                                        | 31923 | 31933 | 31943 | 31953 | 31963         |                 |               |          |
| 22. (L) Electronics           | 32213                                        | 32223 | 32233 | 32243 | 32253 | Elective Code |                 |               |          |
| 23. (M) Defence Studies       | 32313                                        | 32323 | 32333 | 32343 | 32353 | Elective      | Elective        | Elective      | Elective |
| 24. (N) Environmental Science | 32413                                        | 32423 | 32433 | 32443 | 32453 | 32463         |                 |               |          |
| SEMESTER IV                   |                                              |       |       |       |       |               | PRACTICAL PAPER |               |          |
| Theory Paper                  | I                                            | II    | III   | IV    | V     | VI            | I               | II            | III      |
| 11. (A) Mathematics           | 31114                                        | 31124 | 31134 | 31144 | 31154 | 31164         | Elective Code   | Elective Code | 31194    |
| 12. (B) Physics               | 31214                                        | 31224 | 31234 | 31244 | 31254 | Elective      | 31274           | 31284         | 31294    |
| 13. (C) Chemistry             | 31314                                        | 31324 | 31334 | 31344 | 31354 | Elective      | 31374           | 31384         | 31394    |
| 14. (D) Botany                | 31414                                        | 31424 | 31434 | 31444 | 31454 | Elective      | 31474           | 31484         | 31494    |
| 15. (E) Zoology               | 31514                                        | 31524 | 31534 | 31544 | 31554 | 31564         | 31574           | 31584         | 31594    |
| 16. (F) Geology               | 31614                                        | 31624 | 31634 | 31644 | 31654 | 31664         | 31674           | 31684         | 31694    |
| 17. (G) Statistics            | 31714                                        | 31724 | 31734 | 31744 | 31754 | Elective      | 31774           | 31784         | 31794    |
| 18. (H) Geography             | 31814                                        | 31824 | 31834 | 31844 | 31854 | 31864         | 31874           | 31884         | 31894    |
| 19. (I) Microbiology          | 31914                                        | 31924 | 31934 | 31944 | 31954 | 31964         | 31974           | 31984         | 31994    |
| 22. (L) Electronics           | 32214                                        | 32224 | 32234 | 32244 | 32254 | Elective      | 32274           | 32284         | 32294    |
| 23. (M) Defence Studies       | 32314                                        | 32324 | 32334 | 32344 | 32354 | Elective      | Elective        | Elective      | Elective |
| 24. (N) Environmental Science | 32414                                        | 32424 | 32434 | 32444 | 32454 | 32464         | 32474           | 32484         | 32494    |

T.Y.B.Sc. students shall offer one of the three subjects offered by him in Second Year B.Sc. as his Principal Subject.

| Special Subject Code & Name   |       | T.Y.B.Sc. Semester Pattern 2008 SEMESTER III |       |       |                      |               |                 |               |              |
|-------------------------------|-------|----------------------------------------------|-------|-------|----------------------|---------------|-----------------|---------------|--------------|
| Theory Paper                  | I     | II                                           | III   | IV    | V                    | VI            | VII             | VIII          | IX Practical |
| 11. (A) Mathematics           | 61113 | 61123                                        | 61133 | 61143 | 61153                | 61163         | Elective Code   | Elective Code | 61193        |
| 12. (B) Physics               | 61213 | 61223                                        | 61233 | 61243 | 61253                | Elective Code |                 |               |              |
| 13. (C) Chemistry             | 61313 | 61323                                        | 61333 | 61343 | 61353                | Elective Code |                 |               |              |
| 14. (D) Botany                | 61413 | 61423                                        | 61433 | 61443 | 61453                | 61463         |                 |               |              |
| 15. (E) Zoology               | 61513 | 61523                                        | 61533 | 61543 | 615A3<br>OR<br>615B3 | 61563         |                 |               |              |
| 16. (F) Geology               | 61613 | 61623                                        | 61633 | 61643 | 61653                | 61663         |                 |               |              |
| 17. (G) Statistics            | 61713 | 61723                                        | 61733 | 61743 | 61753                | Elective Code |                 |               |              |
| 18. (H) Geography             | 61813 | 61823                                        | 61833 | 61843 | 61853                | 61863         |                 |               |              |
| 19. (I) Microbiology          | 61913 | 61923                                        | 61933 | 61943 | 61953                | 61963         |                 |               |              |
| 22. (L) Electronics           | 62213 | 62223                                        | 62233 | 62243 | 62253                | Elective Code |                 |               |              |
| 23. (M) Defence Studies       | 62313 | 62323                                        | 62333 | 62343 | 62353                | Elective      | Elective        | Elective      | Elective     |
| 24. (N) Environmental Science | 62413 | 62423                                        | 62433 | 62443 | 62453                | 62463         |                 |               |              |
| SEMESTER IV                   |       |                                              |       |       |                      |               | PRACTICAL PAPER |               |              |
| Theory Paper                  | I     | II                                           | III   | IV    | V                    | VI            | I               | II            | III          |
| 11. (A) Mathematics           | 61114 | 61124                                        | 61134 | 61144 | 61154                | 61164         | Elective Code   | Elective Code | 61194        |
| 12. (B) Physics               | 61214 | 61224                                        | 61234 | 61244 | 61254                | Elective      | 61274           | 61284         | 61294        |
| 13. (C) Chemistry             | 61314 | 61324                                        | 61334 | 61344 | 61354                | Elective      | 61374           | 61384         | 61394        |
| 14. (D) Botany                | 61414 | 61424                                        | 61434 | 61444 | 61454                | 61464         | 61474           | 61484         | 61494        |
| 15. (E) Zoology               | 61514 | 61524                                        | 61534 | 61544 | 615A4<br>OR<br>615B4 | 61564         | 61574           | 61584         | 61594        |
| 16. (F) Geology               | 61614 | 61624                                        | 61634 | 61644 | 61654                | 61664         | 61674           | 61684         | 61694        |
| 17. (G) Statistics            | 61714 | 61724                                        | 61734 | 61744 | 61754                | Elective      | 61774           | 61784         | 61794        |
| 18. (H) Geography             | 61814 | 61824                                        | 61834 | 61844 | 61854                | 61864         | 61874           | 61884         | 61894        |
| 19. (I) Microbiology          | 61914 | 61924                                        | 61934 | 61944 | 61954                | 61964         | 61974           | 61984         | 61994        |
| 22. (L) Electronics           | 62214 | 62224                                        | 62234 | 62244 | 62254                | Elective      | 62274           | 62284         | 62294        |
| 23. (M) Defence Studies       | 62314 | 62324                                        | 62334 | 62344 | 62354                | Elective      | Elective        | Elective      | Elective     |
| 24. (N) Environmental Science | 62414 | 62424                                        | 62434 | 62444 | 62454                | 62464         | 62474           | 62484         | 62494        |

## VOCATIONAL & RESTRUCTURE COURSES

(Any one Group of the following)

**S.Y.B.Sc. (Semester)**

| Subject                                           | Semester I         |                 |
|---------------------------------------------------|--------------------|-----------------|
|                                                   | NEW (2008 Pattern) |                 |
|                                                   | Theory Paper I     | Theory Paper II |
| 56. Industrial Chemistry                          | 55611              | 55621           |
| 57. Bio-Technology                                | 55711              | 55721           |
| 80. Photography Audio<br>Visual Production        | 58011              | 58021           |
| 81. Electronic Equip.<br>& Maintenance            | 58111              | 58121           |
| 87. Computer Hardware &<br>Administration Network | 58711              | 58721           |
| 89. Seed Technology                               | 58911              | 58921           |
| 82. Ind. Microbiology                             | 58211              | 58221           |
| <b>RESTRUCTURE:</b>                               |                    |                 |
| 'C' Component<br>* _____                          |                    |                 |
| D/E Component<br>* _____                          |                    |                 |

(Any one of the following)

| Subject                                           | Semester II        |        |               |
|---------------------------------------------------|--------------------|--------|---------------|
|                                                   | NEW (2008 Pattern) |        |               |
|                                                   | Theory             | Theory | Practical III |
| 56. Industrial Chemistry                          | 55612              | 55622  | 55632         |
| 57. Bio-Technology                                | 55712              | 55722  | 55732         |
| 80. Photography Audio<br>Visual Production        | 58012              | 58022  | 58032         |
| 81. Electronic Equip.<br>& Maintenance            | 58112              | 58122  | 58132         |
| 87. Computer Hardware &<br>Administration Network | 58712              | 58722  | 58732         |
| 89. Seed Technology                               | 58912              | 58922  | 58932         |
| 82. Ind. Microbiology                             | 58212              | 58222  | 58232         |
| <b>RESTRUCTURE:</b>                               |                    |        |               |
| 'C' Component<br>* _____                          |                    |        |               |
| D/E Component<br>* _____                          |                    |        |               |

**Backlog students of Sem I & II (2003 patt.) will have to appear equivalence Sem I & II (2008 Patt.) subject.**  
**(Pattern with Equivalence)**

Sem. I & II (2003)

VOCATONAL & RESTRUCTURE COURES

(Any one Group of the following)

S.Y.B.Sc. (Semester)

(Reference List)

|                                         | <b>Semester I</b>                                        |                 | <b>Semester I</b>                               |                 |
|-----------------------------------------|----------------------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Subject                                 | NEW (2008 pattern)<br>Equivalence Subject (for Students) |                 | OLD (2003 pattern)<br>(Only office information) |                 |
|                                         | Theory Paper I                                           | Theory Paper II | Theory Paper I                                  | Theory Paper II |
| 56. Industrial Chemistry                | 55611                                                    | 55621           | 25611                                           | 25621           |
| 57. Bio-Technology                      | 55711                                                    | 55721           | 25711                                           | 25721           |
| 80. Still Photography and Audio Product | 58011                                                    | 58021           | 28011                                           | 28021           |
| 81. Electronic Equip. & Maintenance     | 58111                                                    | 58121           | 28111                                           | 28121           |
| 87. Computer Maintenance                | 58711                                                    | 58721           | 28711                                           | 28721           |
| 89. Seed Technology                     | 58911                                                    | 58921           | 28911                                           | 28921           |
| 82. Ind. Microbiology                   | 58211                                                    | 58221           | 28211                                           | 28221           |
| <b>RESTRUCTURE</b><br>"C" Component     |                                                          |                 |                                                 |                 |
| D/E/ Component                          |                                                          |                 |                                                 |                 |

(Any one Group of the following)

S.Y.B.Sc. (Semester)

(Reference List)

|                                         | <b>Semester II</b>                                       |                 |                     | <b>Semester II</b>                              |                 |                     |
|-----------------------------------------|----------------------------------------------------------|-----------------|---------------------|-------------------------------------------------|-----------------|---------------------|
| Subject                                 | NEW (2008 pattern)<br>Equivalence Subject (for Students) |                 |                     | OLD (2003 pattern)<br>(Only office information) |                 |                     |
|                                         | Theory Paper I                                           | Theory Paper II | Practical Paper III | Theory Paper I                                  | Theory Paper II | Practical Paper III |
| 56. Industrial Chemistry                | 55612                                                    | 55622           | 55632               | 25612                                           | 25622           | 25632               |
| 57. Bio-Technology                      | 55712                                                    | 55722           | 55732               | 25712                                           | 25722           | 25732               |
| 80. Still Photography and Audio Product | 58012                                                    | 58022           | 58032               | 28012                                           | 28022           | 28032               |
| 81. Electronic Equip. & Maintenance     | 58112                                                    | 58122           | 58132               | 28112                                           | 28122           | 28132               |
| 87. Computer Maintenance                | 58712                                                    | 58722           | 58732               | 28712                                           | 28722           | 28732               |
| 89. Seed Technology                     | 58912                                                    | 58922           | 58932               | 28912                                           | 28922           | 28932               |
| 82. Ind. Microbiology                   | 58212                                                    | 58222           | 58232               | 28212                                           | 28222           | 28232               |
| <b>RESTRUCTURE</b><br>"C" Component     |                                                          |                 |                     |                                                 |                 |                     |
| D/E/ Component                          |                                                          |                 |                     |                                                 |                 |                     |

| Subject                                         | T.Y.B.Sc. (Semester Pattern) Vocational (2003 Pattern) |             |                         |             |                             |                  |
|-------------------------------------------------|--------------------------------------------------------|-------------|-------------------------|-------------|-----------------------------|------------------|
|                                                 | Semester III<br>(Theory)                               |             | Semester IV<br>(Theory) |             | Semester IV<br>(Practical ) |                  |
| 56. (O) Industrial Chemistry                    | 35653<br>V                                             | 35663<br>VI | 35654<br>V              | 35664<br>VI | 35694<br>III                |                  |
| 57. (P) Bio-Technology                          | 35753<br>V                                             | 35763<br>VI | 35754<br>V              | 35764<br>VI | 35794<br>III                |                  |
| 80. (Q) Still Photography & Audio Product       | 38053<br>V                                             | 38063<br>VI | 38054<br>V              | 38064<br>VI | 38094<br>III                |                  |
| 81. (R) Electronic Equip. & Maintenance         | 38153<br>V                                             | 38163<br>VI | 38154<br>V              | 38164<br>VI | 38194<br>III                |                  |
| 82. Ind. Microbiology                           | 38253<br>V                                             | 38263<br>VI | 38254<br>V              | 38264<br>VI | 38294<br>III                |                  |
| 87. (S) Computer Maintenance                    | 38753<br>V                                             | 38763<br>VI | 38754<br>V              | 38764<br>VI | 38794<br>III                |                  |
| 89. (T) Seed Technology                         | 38953<br>V                                             | 38963<br>VI | 38954<br>V              | 38964<br>VI | 38994<br>III                |                  |
| 92. Business Entrepreneurship & Development     |                                                        |             |                         |             |                             | 39214<br>(Grade) |
| <b>RESTRUCTURE:</b><br>'C' Component<br>* _____ |                                                        |             |                         |             |                             |                  |
| D/E Component<br>* _____                        |                                                        |             | 35504<br>* Project work |             |                             |                  |

\* Please write name of the Subject and Code No. of Restructure Course given in the list available in the college office.

| Subject                                          | T.Y.B.Sc. (Semester Pattern) Vocational (2008 Pattern) |             |                         |             |                             |                  |
|--------------------------------------------------|--------------------------------------------------------|-------------|-------------------------|-------------|-----------------------------|------------------|
|                                                  | Semester III<br>(Theory)                               |             | Semester IV<br>(Theory) |             | Semester IV<br>(Practical ) |                  |
| 56. (O) Industrial Chemistry                     | 65653<br>V                                             | 65663<br>VI | 65654<br>V              | 65664<br>VI | 65694<br>III                |                  |
| 57. (P) Bio-Technology                           | 65753<br>V                                             | 65763<br>VI | 65754<br>V              | 65764<br>VI | 65794<br>III                |                  |
| 80. (Q) Photography Audio Visual Production      | 68053<br>V                                             | 68063<br>VI | 68054<br>V              | 68064<br>VI | 68094<br>III                |                  |
| 81. (R) Electronic Equip. Maintenance            | 68153<br>V                                             | 68163<br>VI | 68154<br>V              | 68164<br>VI | 68194<br>III                |                  |
| 82. Ind. Microbiology                            | 68253<br>V                                             | 68263<br>VI | 68254<br>V              | 68264<br>VI | 68294<br>III                |                  |
| 87. (S) Computer Hardware Administration Network | 68753<br>V                                             | 68763<br>VI | 68754<br>V              | 68764<br>VI | 68794<br>III                |                  |
| 89. (T) Seed Technology                          | 68953<br>V                                             | 68963<br>VI | 68954<br>V              | 68964<br>VI | 68994<br>III                |                  |
| 92. Business Entrepreneurship & Development      |                                                        |             |                         |             |                             | 69214<br>(Grade) |
| <b>RESTRUCTURE:</b><br>'C' Component<br>* _____  |                                                        |             |                         |             |                             |                  |
| D/E Component<br>* _____                         |                                                        |             | 65504<br>* Project work |             |                             |                  |

\* Please write name of the Subject and Code No. of Restructure Course given in the list available in the college office.

**BIOTECHNOLOGY****SEMESTER - I**

| Subject Name                                     | Sem-patt-2006 | Revised Course (Sem.-pat-2008) |
|--------------------------------------------------|---------------|--------------------------------|
| Genetics & Immunology (Theory)                   | 24011         | 54011                          |
| Cell Biology (Theory)                            | 24021         | 54021                          |
| Metabolic Pathways (Theory)                      | 24041         |                                |
| Molecular Biology (Theory)                       |               | 54041                          |
| Fundamentals of Ecology & Environment (Theory)   | 24051         |                                |
| Exercises In Cell Biology & Genetics (Practical) | 24131         | 54131                          |
| Techniques in Molecular Biology (Practical)      |               | 54231                          |

**SEMESTER - II**

| Subject Name                                | Sem. Pattern 2006 |
|---------------------------------------------|-------------------|
| Molecular Biology (Theory)                  | 24062             |
| Plant & Animal Tissue Culture (Theory)      | 24082             |
| English (Theory)                            | 24072             |
| Techniques in Molecular Biology (Practical) | 24232             |
| Tissue Culture Techniques (Practical)       | 24332             |

  

| Subject Name                                   | Sem. Pattern 2008 |
|------------------------------------------------|-------------------|
| Metabolic Pathways (Theory)                    | 54042             |
| Environmental Biology & Biotechnology (Theory) | 54062             |
| English (Theory)                               | 54072             |
| Plant & Animal Tissue Culture (Theory)         | 54082             |
| Tissue Culture Techniques (Practical)          | 54332             |

**SEMESTER - III**

| Subject Name                                      | <u>2006 Pattern</u> |
|---------------------------------------------------|---------------------|
| Microbial Biotechnology (Theory)                  | 34013               |
| Recombinant DNA Technology (Theory)               | 34023               |
| Biodiversity & Systematics (Theory)               | 34043               |
| Techniques in Genetics Engg. (Theory) (Practical) | 34133               |
| Project (to be continued) (Semester IV)           | 34233               |

**SEMESTER - IV**

| Subject Name                                                   | <u>2006 Pattern</u> |
|----------------------------------------------------------------|---------------------|
| Large Scale Manufacturing Process (Theory)                     | 34014               |
| Applications of Biotechnology in Agriculture & Health (Theory) | 34024               |
| Animal and Plant Development (Theory)                          | 34044               |
| Development Biology (Practical)                                |                     |
| Development Biology & Fermentation (Practical)                 | 34134               |
| Project                                                        | 34234               |

**SEMESTER - III**

| Subject Name                                                | <u>2008 Pattern</u> |
|-------------------------------------------------------------|---------------------|
| Microbial Biotechnology                                     | 64013               |
| Animal and Plant Development                                | 64023               |
| Biodiversity & Systematics                                  | 64043               |
| Development Biology and Microbial Biotechnology (Practical) | 64133               |
| Project (to be continued in Sem. IV)                        | 64233               |

**SEMESTER - IV**

| Subject Name                            | <u>2008 Pattern</u> |
|-----------------------------------------|---------------------|
| Large Scale Manufacturing Process       | 64014               |
| Biotechnology in Agriculture & Health   | 64024               |
| Recombinant DNA Technology              | 64044               |
| Techniques in Genetic Engg. (Practical) | 64134               |
| Project                                 | 64234               |

| <i>Subject Code</i>         | <i>Subject Name</i>                        | <i>Theory/ Practical</i> | <i>Subject Code</i>             | <i>Subject Name</i>                      | <i>Theory/ Practical</i> |
|-----------------------------|--------------------------------------------|--------------------------|---------------------------------|------------------------------------------|--------------------------|
| <b>Sem. III—Mathematics</b> |                                            |                          | 313E4                           | Agriculture and Dairy Chemistry          | Practical                |
| 311A3                       | Operation Research I                       | Theory                   | 313F4                           | Medicinal Chemistry                      | Theory                   |
| 311B3                       | Graph Theory                               | Theory                   | <b>Sem. IV—Botany</b>           |                                          |                          |
| 311C3                       | Computational Mathematics I                | Theory                   | 314A4                           | Mushroom Technology                      | Theory                   |
| 311D3                       | Combinatorics                              | Theory                   | 314B4                           | Poly-house Technology                    | Theory                   |
| 311N3                       | Number Theory                              | Theory                   | 314C4                           | Medico Botany                            | Theory                   |
| 311P3                       | Differential Geometry I                    | Theory                   | <b>Sem. III—Statistics</b>      |                                          |                          |
| 311R3                       | Computational Mathematics III              | Theory                   | 317A3                           | Operations Management                    | Theory                   |
| 311T3                       | Astronomy I                                | Theory                   | 317B3                           | Actuarial Statistics                     | Theory                   |
| <b>Sem. IV—Mathematics</b>  |                                            |                          | 317C3                           | Statistical Computing using R Software   | Theory                   |
| 311A4                       | Operation Research II                      | Theory                   | <b>Sem. IV—Statistics</b>       |                                          |                          |
| 311B4                       | Lattice Theory                             | Theory                   | 317A4                           | C++ Programming                          | Theory                   |
| 311C4                       | Computational Mathematics II               | Theory                   | 317B4                           | Statistical Ecology                      | Theory                   |
| 311D4                       | Computational Geometry                     | Theory                   | 317C4                           | Time Series Analysis                     | Theory                   |
| 311N4                       | Lebsegue Integration                       | Theory                   | <b>Sem. III—Electronics</b>     |                                          |                          |
| 311P4                       | Differential Geometry II                   | Theory                   | 322A3                           | Computer Hardware                        | Theory                   |
| 311R4                       | Computational Mathematics IV               | Theory                   | 322B3                           | Computer Network Design & Maintenance    | Theory                   |
| 311T4                       | Astronomy II                               | Theory                   | 322C3                           | Biomedical Instrumentation I             | Theory                   |
| <b>Sem. III—Physics</b>     |                                            |                          | 322D3                           | Electronic Instrumentation               | Theory                   |
| 312A3                       | Astronomy and Astrophysics                 | Theory                   | 322E3                           | Agri Electronics I                       | Theory                   |
| 312B3                       | Biophysics I                               | Theory                   | 322F3                           | Fiber Optics & Fiber Optic Communica. I  | Theory                   |
| 312C3                       | Communication Electronics I                | Theory                   | <b>Sem. IV—Electronics</b>      |                                          |                          |
| 312D3                       | Electro-Ascoustics & Enterin-Electronics   | Theory                   | 322A4                           | Computer Networking                      | Theory                   |
| 312E3                       | Medical Instrumentation I                  | Theory                   | 322B4                           | Network Operating Systems                | Theory                   |
| 312F3                       | Motion Picture Physics I                   | Theory                   | 322C4                           | Biomedical Instrumentation II            | Theory                   |
| 312G3                       | Renewable Energy Sources I                 | Theory                   | 322D4                           | Medical Instrumentation                  | Theory                   |
| 312H3                       | Basic Microprocessor & Programming         | Theory                   | 322E4                           | Agri Electronics II                      | Theory                   |
| 312K3                       | Auxiliary Electronics                      | Theory                   | 322F4                           | Fiber Optics & Fiber Optic Communica. II | Theory                   |
| 312L3                       | Elements of Materials Sciences             | Theory                   | <b>Sem. III—Defence Studies</b> |                                          |                          |
| 312M3                       | Lasers                                     | Theory                   | 323A3                           | Strategic Thinkers                       | Theory                   |
| 312N3                       | Vacuum Technology                          | Theory                   | 323B3                           | International Law                        | Theory                   |
| <b>Sem. IV—Physics</b>      |                                            |                          | 323C3                           | Refuges Studies                          | Theory                   |
| 312A4                       | Astronomy and Astrophysics II              | Theory                   | 323F3                           | Maratha Art of War & Military System     | Theory                   |
| 312B4                       | Biophysics II                              | Theory                   | 323G3                           | International Organization               | Theory                   |
| 312C4                       | Communication Electronics II               | Theory                   | 323H3                           | Evaluation of Western Art of War         | Theory                   |
| 312D4                       | Electro-Ascoustics & Enteri. Electronic II | Theory                   | 323M3                           | Armed Forces & Society                   | Theory                   |
| 312E4                       | Medical Instrumentation II                 | Theory                   | 323N3                           | Geopolitics                              | Theory                   |
| 312F4                       | Motion Picture Physics II                  | Theory                   | 323T3                           | Defence Production in India              | Theory                   |
| 312G4                       | Renewable Energy Sources II                | Theory                   | 323U3                           | Defence Management in India              | Theory                   |
| 312H4                       | Basic Microprocessor & Programming II      | Theory                   | <b>Sem. IV—Defence Studies</b>  |                                          |                          |
| 312K4                       | Vacuum Technology                          | Theory                   | 323A4                           | Strategic Thinkers                       | Theory                   |
| 312L4                       | Lasers (PH-346)                            | Theory                   | 323B4                           | International Law                        | Theory                   |
| 312M4                       | Auxiliary Electronics                      | Theory                   | 323C4                           | Refuges Studies                          | Theory                   |
| 312N4                       | Elements of Materials                      | Theory                   | 323F4                           | Maratha Art of War & Military System     | Theory                   |
| <b>Sem. III—Chemistry</b>   |                                            |                          | 323G4                           | International Organization               | Theory                   |
| 313A3                       | Nuclear Chemistry                          | Theory                   | 323H4                           | Evaluation of Western Art of War         | Theory                   |
| 313B3                       | Polymer Chemistry                          | Theory                   | 323M4                           | Armed Forces & Society                   | Theory                   |
| 313C3                       | Bio-Chemistry                              | Theory                   | 323N4                           | Geopolitics                              | Theory                   |
| 313D3                       | Environmental Chemistry                    | Theory                   | 323T4                           | Defence Production in India              | Theory                   |
| 313E3                       | Agriculture and Dairy Chemistry            | Theory                   | 323U4                           | Defence Management in India              | Theory                   |
| 313F3                       | Medicinal Chemistry                        | Theory                   |                                 |                                          |                          |
| <b>Sem. IV—Chemistry</b>    |                                            |                          |                                 |                                          |                          |
| 313A4                       | Nuclear Chemistry                          | Theory                   |                                 |                                          |                          |
| 313B4                       | Polymer Chemistry                          | Theory                   |                                 |                                          |                          |
| 313C4                       | Bio-Chemistry                              | Theory                   |                                 |                                          |                          |
| 313D4                       | Environmental Chemistry                    | Theory                   |                                 |                                          |                          |

## T.Y.B.Sc. Elective Paper Subject Coding List

| Sub. Code                    | Subject Name                                  | Sub. Code                                                                                | Subject Name                                                  |
|------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| <b>Sem. III Mathematics</b>  |                                               | <b>Sem.- III Defence and Strategic Studies</b><br>(Choose any one Paper from each group) |                                                               |
| 611A3                        | Operation Research                            | <b>Paper - VI</b>                                                                        | 623A3 Indian Military System (I)                              |
| 611D3                        | Combinatorics                                 |                                                                                          | 623B3 Maratha Military System (I)                             |
| 611E3                        | Lattice Theory                                |                                                                                          | 623C3 Indian War since Independence ( I )                     |
| 611F3                        | 'C' Programming                               | <b>Paper – VII</b>                                                                       | 623D3 Military Sociology                                      |
| 611N3                        | Number Theory                                 |                                                                                          | 623E3 Defence Journalism                                      |
| 611P3                        | Differential Geomtry                          |                                                                                          | 623F3 Defence Preparedness of India ( I )                     |
| <b>Sem. IV Mathematics</b>   |                                               | <b>Paper – VIII</b>                                                                      | 623G3 Armed Conflict and Human Rights                         |
| 611D4                        | Computational Geomtry                         |                                                                                          | 623H3 International Organisation and National Security        |
| 611E4                        | Optimization Techniques                       |                                                                                          | 623J3 International Law                                       |
| 611F4                        | Improper Integrals and Laplace Transforms     | <b>Paper-IX</b>                                                                          | 623K3 Defence Management In India                             |
| 611G4                        | 'C' Programming                               |                                                                                          | 623L3 Internal Security of India ( I )                        |
| 611H4                        | Dynamics                                      |                                                                                          | 623M3 India's Maritime Security ( I )                         |
| 611N4                        | Lebseque Integration                          | <b>Sem.- IV Defence and Strategic Studies</b><br>(Choose any one Paper from each group)  |                                                               |
| <b>Sem. III Physics</b>      |                                               | <b>Paper-VI</b>                                                                          | 623A4 Indian Military System ( II )                           |
| 612A3                        | Astronomy and Astrophysics                    |                                                                                          | 623B4 Maratha Military System ( II )                          |
| 612B3                        | Biophysics                                    |                                                                                          | 623C4 Indian War since Independence ( II )                    |
| 612F3                        | Motion Picture Physics                        | <b>Paper-VII</b>                                                                         | 623D4 Military Psychology                                     |
| 612J3                        | Medical Electronics                           |                                                                                          | 623E4 Defence Journalism and National Security                |
| 612L3                        | Elements of Materials Science                 |                                                                                          | 623F4 Defence Preparedness of India ( II )                    |
| <b>Sem. IV Physics</b>       |                                               | <b>Paper-VIII</b>                                                                        | 623G4 Refugees Studies                                        |
| 612D4                        | Electro Acoustics & Entertainment Electronics |                                                                                          | 623H4 Study of United Nations                                 |
| 612G4                        | Renewable Energy Sources                      |                                                                                          | 623J4 Laws of War and Peace                                   |
| 612J4                        | Physics of Nanomaterials                      | <b>Paper-IX</b>                                                                          | 623K4 Management of Defence Production and Logistics in India |
| 612L4                        | Lasers                                        |                                                                                          | 623L4 Internal Security of India ( II )                       |
| 612P4                        | Microcontrollers                              |                                                                                          | 623M4 India's Maritime Security ( II )                        |
| <b>Sem. III Chemistry</b>    |                                               |                                                                                          |                                                               |
| 613A3                        | Nuclear Chemistry                             |                                                                                          |                                                               |
| 613B3                        | Polymer Chemistry                             |                                                                                          |                                                               |
| 613C3                        | Bio-Chemistry                                 |                                                                                          |                                                               |
| 613D3                        | Environmental Chemistry                       |                                                                                          |                                                               |
| 613E3                        | Agriculture Chemistry                         |                                                                                          |                                                               |
| <b>Sem. IV Chemistry</b>     |                                               |                                                                                          |                                                               |
| 613A4                        | Nuclear Chemistry                             |                                                                                          |                                                               |
| 613B4                        | Polymer Chemistry                             |                                                                                          |                                                               |
| 613C4                        | Bio-Chemistry                                 |                                                                                          |                                                               |
| 613D4                        | Environmental Chemistry                       |                                                                                          |                                                               |
| 613E4                        | Dairy Chemistry                               |                                                                                          |                                                               |
| <b>Sem.- III Statistics</b>  |                                               |                                                                                          |                                                               |
| 617A3                        | Operations Management                         |                                                                                          |                                                               |
| 617B3                        | Acturial Statistics                           |                                                                                          |                                                               |
| 617D3                        | Time Series Analysis                          |                                                                                          |                                                               |
| <b>Sem.- IV Statistics</b>   |                                               |                                                                                          |                                                               |
| 617B4                        | Statistical Ecology                           |                                                                                          |                                                               |
| 617D4                        | Medical Statistics                            |                                                                                          |                                                               |
| 617E4                        | Statistical Computing Using R Software        |                                                                                          |                                                               |
| <b>Sem.- III Electronics</b> |                                               |                                                                                          |                                                               |
| 622F3                        | Fiber Optics and Fiber Optic Communication    |                                                                                          |                                                               |
| 622G3                        | Sensor & Actuators                            |                                                                                          |                                                               |
| <b>Sem.- IV Electronics</b>  |                                               |                                                                                          |                                                               |
| 622G4                        | Instrumentation                               |                                                                                          |                                                               |
| 622H4                        | Consumer Electronics                          |                                                                                          |                                                               |