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DAV College Trust Management Society, New Delhi's

D.B.F. DAYANAND COLLEGE OF ARTS & SCIENCE, SOLAPUR

Raviwar Peth, Solapur - 413 002. Tel. 0217-2323193 www.dayanandsolapur.org

◆ NAAC reaccreditated 'A' grade ◆ UGC awarded College with Potential for Excellence (CPE 2nd Phase)

◆ Best College Award -2016-17 by Solapur University, Solapur.

DAYANAND SCIENCE OLYMPIAD

2017-18

Objectives of Dayanand Science Olympiad

- To create awareness of IIT-JAM, IISER, M.Sc., SET /NET, TIFR, IISc etc. entrance/competitive examinations.
- To help students in preparation for such entrance/compeitive examinations.

Subjects : Physics, Chemistry, Mathematics & Life Sciences

Eligibility : XII Science, B.Sc. I / II / III & M.Sc. I / II students

Syllabus : For syllabus of each subject visit www.dayanandsolapur.org

Nature of Examination :
- For Physics, Chemistry & Life Sciences - 100 Multiple choice questions of 100 marks & 2 hrs. duration.
- For Mathematics - 50 Multiple choice questions of 100 marks & 2 hrs. duration.

Examination date & time :

Date - 04/02/2018 (Sunday)	Date - 11/02/2018 (Sunday)
Physics (10.30 am to 12.30 pm)	Chemistry (10.30 am to 12.30 pm)
Life Sciences (1.30 pm to 3.30 pm)	Mathematics (1.30 pm to 3.30 pm)

Examination Center : D.B.F. Dayanand College of Arts & Science, Solapur.

Examination fees : Rs. 100 for each subject
(Student may appear for more than one subject by paying fees per subject)

Application From & Payment of fees : For Online : Visit www.dayanandsolapur.org
For Offline : Visit respective Departments,
For Payment : Account office, Dayanand College

Last date of submission of application form : 29th Jan. 2018 (Monday)

Awards & Certificates : For 1st, 2nd & 3rd in each subject Book prizes & Certificates

For more details visit www.dayanandsolapur.org

Contact

Dr. D. G. Kadam, Co-ordinator
Dr. R. N. Mulik (Physics)
Mr. D. S. Shivsharan (Mathematics)
Dr. S. D. Chavan - 9423526353

Dr. V. P. Ubale, Principal

Dr. S. K. Chavan (Chemistry)
Dr. M. N. Jagtap (Life Sciences)
Mr. S. B. Mudagi (Mathematics)
Dr. S. G. Pawar - 9423828365

D. B. F. Dayanand College of Arts & Science, Solapur

DAYANAND SCIENCE OLYMPIAD

(2017-18)

- **Dayanand Science Olympiad** (DSO) is an examination organized by the D.B.F.Dayanand College of Arts and Science, Solapur (MH) in Physics/Chemistry/Mathematics/Life Sciences for under graduate (UG) and post graduate (PG) students.
- **Objectives of Dayanand Science Olympiad:** The objective of Dayanand Science Olympiad is to create awareness and to start well in advance the preparation for various types of subject knowledge testing examinations like IIT-JAM, IISER entrance, M.Sc. entrance examination of Solapur University, Shivaji University and Pune University.
- **Awards and Prizes:** The toppers students in DSO examination will be honored by certificate and prizes.
- **Examination Schedule:** The DSO exam will be conducted on 04/02/2018 (Physics & Life Sciences) and 11/02/2018 (Chemistry & Mathematics).
- **Examination Centre:** D. B. F. Dayanand College of Arts & Science, Solapur.
- **Examination Time:** 10:30 AM to 12:30 PM and 01:30 to 03:30 PM.
- **Syllabus for the examination:** The syllabus of DSO examination is available on **www.dayanandsolapur.org**.
- **Pattern of DSO Question Paper:** The DSO examination will be comprised of multiple choice questions (MCQ) related to Physics/Chemistry/Mathematics/Life Sciences subjects. The DSO will be conducted separately for each subject.

For Physics, Chemistry & Life Sciences: 100 MCQ questions for 100 marks.

For Mathematics: 50 MCQ questions for 100 marks.

- **Application form and fees:** The application form is available at website **www.dayanandsolapur.org** & also in the respective department.

Online: The application form can be submitted online and examination fee Rs. 100/- for each subject can be paid at Account Office, D.B.F. Dayanand College, Solapur.

For online form click:

https://docs.google.com/forms/d/e/1FAIpQLSfTH0WhbmTZwFMgEx_mfcld2Ttga_vvTYj4HeqyHDsfUEtVEw/viewform?c=0&w=1

Offline: The hard copy of filled application form along with necessary fees can be paid in cash in Account Office, D.B.F. Dayanand College, Solapur.

The last date for submission of application form is **29/01/2018**.

Governing Body:

1. Dr. D. G. Kadam (Co-ordinator)
2. Dr. R. N. Mulik (Physics)
3. Dr. S. K. Chavan (Chemistry)
4. Dr. M. N. Jagtap (Life Sciences)
5. Mr. S. B. Mudagi (Mathematics)
6. Mr. B. S. Shivsharan (Mathematics)

Organizing Committee:

1. Dr. S. D. Chavan
2. Dr. S. G. Pawar
3. Dr. C. V. Chanmal

Date: 13th December 2017

Principal

Prin. Prof. Dr. V. P. Ubale

Syllabus of DSO 2017-18

Physics

- **Kinematics, Laws of Motion, Work, Energy and Power, Motion of System of Particles, Gravitation, Properties of Bulk Matter**
- **Oscillation & Waves**
- **Electrostatics, Current Electricity, Magnetic Effect of Current & Magnetism, Electromagnetic Induction & Alternating Current, Electromagnetic Waves**
- **Optics**
- **Thermodynamics, Kinetic Theory of Gases**
- **Modern Physics**
- **Nuclear Physics**
- **Electronic Devices & its applications**

Chemsitry

- Solid State
- Solutions
- Electrochemistry
- Chemical Kinetics
- Surface Chemistry
- Isolation of Elements
- p-Block Elements
- d- and f-Block Elements
- Coordination Compounds
- Haloalkanes and Haloarenes
- Alcohols, Phenols and Ethers
- Aldehydes, Ketones and Carboxylic Acids
- Organic Compounds containing Nitrogen
- Biomolecules
- Polymers
- Chemistry in Everyday Life
- Thermodynamics
- IUPAC Nomenclature

Mathematics

1. Sets and functions
    - Representation of sets
    - Set-builder form, ruled form
    - Functions and their sets
2. Relations and Functions
    - Definition, type of relation
    - Algebraic Operations on Functions
    - Image of sets under functions
3. Algebra: **Matrices, Determinants**
    - **Types of Matrices**
    - **Determinants and their properties**
    - **Rank of the Matrix**
    - **Homogenous and non-homogenous system of linear equation**
4. Calculus
    - **Continuity and Differentiability,**
    - **Applications of Derivatives,**
    - **Integrals and their Applications**
    - **Area under the curve and area between two curves**
5. **Differential Equations**
    - **Types, Solutions and applications**
6. Vectors
    - Definition, Scalar and Vector Products, Scalar triple Products
    - Applications, co-planar vectors
7. Probability
    - Introduction
    - Permutation and combination
    - Examples
8. 3-Dimensional Geometry
    - Equation of line, sphere and plane

    Different forms of equations for plane and sphere

Life Sciences

1. **Biochemistry:** Structure of atoms, molecules and chemical bonds, nucleic acids, Amino acids, proteins, carbohydrates, lipids, vitamins and their biosynthesis, enzymes and co-enzymes.
2. **Cell Biology:** Cell Cycle and Cell division, cell organelles
3. **Molecular Biology:** Replication, transcription, translation, genetic code, molecular markers and reporters, mutation
4. **Plant physiology:** Phytohormonas, respiration, photosynthesis, photoperiodism, ABC model, Vernalization, Stress Pschylogy, Nitrogen Metabolism, Tranaspiration, Water relation.
5. **Animal physiology:** Circulatory System, Digestive system, Endocrine system, reproductive system, Nervous system.
6. **Genetics and Evolution: Principles of Inheritance and Variation, Molecular Basis of Inheritance, Evolution**
7. **Ecology and Environment : Organisms and Populations, Ecosystem, Biodiversity and its Conservation, Environmental Issues**
8. **Immunology:** Antigen, Antibody, Immunoglobulins, Primary & Secondary Immune respond, Humoral and cell mediated immunity.
9. **Development Biology**
10. **Reproduction: Reproduction in Organisms, Sexual Reproduction in Flowering Plants, Human Reproduction, Reproductive Health**
11. **Cell Signaling:**
12. **Biology and Human Welfare: Human Health and Diseases, Strategies for Enhancement in Food Production, Microbes in Human Welfare**
13. **Biosystematics**
14. **Biotechnology and its Applications: Biotechnology - Principles and Processes, Biotechnology and its Application**
15. **Bioinformatics:** BLAST, PDB, Gene Banking
16. **Applied Biology:** Chromatography (paper, TCL, HPLC & gas chroma), PCR, Electrophoresis, Blotting technique, DNA finger printing, ELISA.