



ANNOUNCEMENT

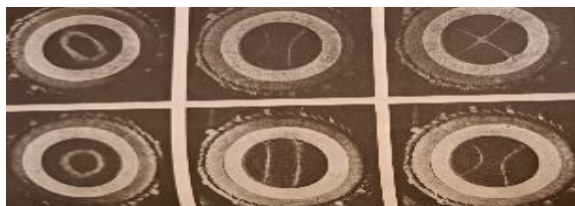
IAPT National Competition on Essay Writing in Physics (NCEWP - 2024)

Writing makes one perfect, essay writing more so.....

Broad Topic: - PHYSICS OF MUSIC and MUSICAL INSTRUMENTS

Sound, in the form of music, gives me more pleasure than anything else in life
Albert Einstein

Physics of music and musical instruments is an interesting topic which fascinated the curious minds of stalwarts in physics like Helmholtz and Raman. The sounds made by musical instruments are a result of superposition of waves made by deft hands of the artists by plucking strings, blowing air in pipes or by vibrations of membranes by hitting them, leading to constructive interference and formation of standing waves travelling in opposite directions



Standing wave patterns using sand on mridangam clicked by CV Raman

Sir C V Raman also studied exhaustively **the physics of the music of violin** which eventually became a book in itself. Raman also studied the uniqueness of Indian percussion instruments like mridangam. Far more than a diversion or hobby, music played a very significant part in his scientific journey. CV Raman wrote 53 papers on acoustics with 21 on musical instruments, between 1907 and 1918. He was an accomplished violist with a musical ear. Hall mark of his papers is its structured content, which included theoretical analyses, instruments designed and built, nature of vibrations and physical causes of vibrations etc.

NCEWP is one of the four national competitions being held by IAPT every year. The competition is open to participants in two categories viz., students and teachers (including Science Communicators).

Category A - Students of (i) Higher Secondary /Jr. College, (ii) UG and (iii) PG level;

Category B - Teachers of (i) Higher Secondary/Jr. College, (ii) UG and (iii) PG institutions, also Science Communicators working in recognized institutions.

Broad suggested elements of the topic for both the categories are:

You may write your entry for the essay competition keeping following points as broad guidelines to make your entry stand out.

- (i) Physics of Music-Characteristics of Musical sound
- (ii) How ear perceives music
- (iii) Various musical scales
- (iv) Classification of musical instruments
- (v) Principle and working of any **TWO** of the following instruments and their physics
 - a. Violin
 - b. Sarangi
 - c. Dilruba
 - d. Sitar
 - e. Veena
 - f. Pianoforte
 - g. Harmonium
 - h. Flute
 - i. Tabla
 - j. Tambura
 - k. Jal Tarang.
- (vi) Brief information of the musical instruments other than the above, available in your area (urban/ rural)
- (vii) Brief mention of the studies done by Sir C V Raman on Indian musical instruments or any other expert of science of musical instruments
- (viii) Music therapy and its benefits
- (ix) Conclusion

Note: It is only a guideline and not a structure for your essay. Be creative, scientific and innovative.

General Instructions:

The essay will be limited to A4 size 10 pages including figures/tables etc. type-written in the Times New Roman 11-point fonts, with 1.15 spacing. Please do not exceed the page limit.

A format for the essay is given below:

IAPT National Competition on Essay Writing in Physics: 2024 (NCEWP – 2024)

Broad Topic: - PHYSICS OF MUSIC and MUSICAL INSTRUMENTS

Category: A or B (Tick your category)

Title of the Essay (Font Size 14)

(Choose a suitable title of your essay)

Count of Words:

Author's Details (with Affiliation & Signature) (Font size 12)

Abstract: in 150 words (Font Size 10)

Key Words (Maximum Five)

Body of the Essay: not more than 10 A4 size papers, you can include pictures, graphs, tables, infograph and other structures in your paper. (Font size 11)

Important Instructions for conduct and participation in IAPT Essay Competition NCEWP-2024

Who will conduct the Competition?

All the Regional and Sub Regional Councils (RC's and SRC's) will conduct the regional level essay competition *digitally* by announcing the last date of submission of paper by 15th July.

Who can receive the essays digitally?

Higher Secondary/UG/PG can submit their essays through e-mails to President/Secretary/EC member of the respective regional council. Only two entries per institution may be submitted in a category.

- (1) **How to send essay?** Students will send their entries duly forwarded through respective school/college/institute to the appropriate Regional Council (RC) with all contact details of the competitor (Name, email, mobile number etc. clearly).
- (2) **How the scrutiny and selection of essays will be done at RC level?** The RC's will have the initial scrutiny at their level. They will select 2 best essays from each level. Thus, each RC will submit 6 best entries to the national competition. RCs may award certificate etc., for their participants. Even the RCs may issue a certification of Participation to those whose Essays are sent to the National Competition.
- (3) **Language for writing the essay?** For the regional competition, students may write their Essays in Hindi or their regional languages. *If such entries are forwarded for the National Competition, then the concerned RCs will translate the Essay in English (with the help of Google translator etc.)* Only English Version of the submitted essay has to be submitted/forwarded for National Level Competition.
- (4) Similarly, Teachers & Science Communicators will send their entries through e-mails duly forwarded directly to the Coordinator/Members of team NCEWP. Retired teachers can self-attest their entry. All entries will be assessed by three evaluators. All entries (in English only) will be scrutinized reviewed and ranked.
- (5) **All entries will be subjected to an online plagiarism test.** Essays found failing in test will be rejected

The last date for essay submission is 30th July, 2024.

Final entries for the national competition must be submitted in PDF format by e-mail to any one of the following:

- i. Prof. S. K. Joshi, Coordinator, NCEWP, joshisantoshk@yahoo.com
- ii. Dr. Himanshu Pandey, Member, NCEWP, himanshukrpandey@gmail.com
- iii. Dr. Shivanand Masti, Member, NCEWP, shivanandmasti@yahoo.co.in

Prof. S. K. JOSHI (Coordinator, NCEWP-2024)