BEST PRACTICE I

1. Title Of the Practice: BRIDGE COURSE FOR NEWLY ADMITTED STUDENTS IN UNDERGRADUATE LEVEL

Bridge courses are designed to help students transition smoothly from their previous educational level to the more advanced subjects they will be studying in engineering. This initiative can be very beneficial for the students by addressing potential gaps in their knowledge and providing a solid foundation for their engineering studies.

2. Objective of the Practice:

The main objectives of the bridge course are:

1. Bridging Knowledge Gaps: The course aims to identify and address any gaps in the students' understanding of fundamental concepts that are necessary for their engineering studies. By reviewing and reinforcing important pre-university level subjects, students will be better prepared to tackle the challenges of their engineering curriculum.

2. Smooth Transition: Moving from pre-university education to engineering studies can be quite overwhelming. The bridge course helps students adapt to the new academic environment, teaching methodologies, and expectations, thus facilitating a smoother transition.

3. Enhancing Learning Abilities: Every student has a unique learning style and pace. The bridge course can cater to a diverse range of learning abilities, ensuring that students with different academic backgrounds can catch up and excel in their engineering studies.

4. Building Confidence: Engaging in a bridge course can boost students' confidence in their academic abilities. When they start their engineering courses, they will feel more self-assured and capable of tackling complex subjects.

5. Preparing for Rigor: Engineering studies often involve in-depth and challenging subjects. The bridge course can introduce students to the type of analytical thinking, problem-solving, and study skills they will need to succeed in their engineering coursework.

It's important for the college to design the bridge course in a way that is engaging, interactive, and relevant to the engineering curriculum. Regular assessments and feedback during the bridge course can help track students' progress and identify areas where additional support might be needed.

The initiative to introduce a bridge course at CCET is a positive step toward ensuring the success of incoming engineering students and helping them thrive in their academic journey.

3. The Context:

The transition from higher secondary to university-level learning often leaves students grappling with uncertainties about their academic competence. To address this, meticulously designed courses are implemented to increase confidence in students' knowledge and skills. These courses not only bolster their academic prowess but also foster a positive teacher-student relationship.

The college caters to a diverse student body hailing from rural areas, economically disadvantaged backgrounds, vernacular medium schools, and various social strata. Adapting to English-based engineering education poses challenges for these students. To facilitate a seamless transition, dedicated support and guidance are imperative. The college recognizes this need and commits to nurturing students by creating a conducive learning atmosphere.

Moreover, the lack of awareness regarding post-engineering career prospects is evident among most students. To bridge this gap, a consistent monitoring and mentoring mechanism is established. This proactive approach aids students in understanding higher education avenues, shaping their career aspirations, and unearthing job opportunities.

In essence, the college's focus extends beyond academics. It encompasses holistic development by addressing linguistic, economic, and social disparities. By championing a comprehensive support system, the institution empowers students to thrive academically, professionally, and p

The key components of your methodology:

1. Action Plan Development and Approval:

- The senior faculty prepares the action plan well in advance demonstrates careful planning and organization.

- Getting approval from the respective Heads of Department (HODs) ensures that the curriculum aligns with the overall goals and objectives of the engineering program.

2. Teaching Methods:

- PowerPoint Presentations: These can be highly effective for conveying theoretical concepts visually and providing structured content. Visual aids can help students grasp complex ideas more easily.

- Chalk and Talk: Traditional lecturing using a chalkboard can provide a platform for clear explanations and direct interactions between instructors and students.

3. Hands-On Training:

- The inclusion of hands-on training is crucial for practical subjects, as it allows students to apply theoretical knowledge in real-world scenarios. This approach helps solidify their understanding and builds practical skills.

4. Interactive Sessions:

Interactive sessions foster engagement and participation among students. They encourage students to ask questions, share opinions, and collaborate, promoting a deeper understanding of the subject matter.

The combination of these teaching methods caters to different learning styles and ensures that students receive a variety of learning experiences. It's also worth considering a few additional points to enhance the effectiveness of your bridge course methodology:

By continuously assessing and refining your methodology based on the outcomes and feedback, we can ensure that the bridge course achieves its objectives of easing the transition for students and setting a strong foundation for their engineering studies.

4. Practice:

In the initial month of the first semester, the college initiates a comprehensive bridge course spanning over four weeks. This intensive course covers essential subjects such as Physics, Chemistry, Mathematics, and English, encompassing a total of five hours of instruction.

During the academic year 2022-2023, the bridge course classes were conducted from August 1st, 2022, to August 31st, 2022. Each day, one lecture is introduced, progressively building upon the previous content. This strategic approach aids students in solidifying their foundational knowledge and bridging potential gaps in their understanding.

The course design ensures that the bridge course seamlessly integrates with the regular curriculum, allowing students to smoothly transition into the university-level education system. By providing focused attention on key subjects and facilitating incremental learning, the college demonstrates its commitment to equipping students with the necessary skills and confidence to excel in their academic pursuits.

5. Evidence of Success:

It's truly encouraging to see that the efforts put into designing and delivering the course have yielded positive outcomes for the students. The fact that an average of 75% marks were scored by the students who attended the bridge course classes is a clear testament to the effectiveness of the course in enhancing their understanding of basic engineering and science concepts.

These positive results reflect the benefits of the various teaching methods, hands-on training, and interactive sessions that were incorporated into the bridge course. The students' improved performance indicates that they were well-prepared to handle the challenges of their first semester and were equipped with a solid foundation to build upon as they progress through their engineering studies.

The positive outcomes you've observed from the bridge course's first semester are a great indicator of its value to students' education and preparation for engineering studies. By leveraging these successes and continuously refining your approach, you can further enhance the educational experience for your students.

6. Problems Encountered and Resources Required

The delay in processing new admissions by the University, attributed to unforeseen circumstances, has led to a significant time constraint during the initial semester. This unforeseen delay has created challenges that impact both students and faculty members.

The compressed timeline has necessitated a more condensed and intensive approach to the curriculum. Faculty members are working diligently to adapt and ensure that the essential subject matter is covered within the reduced timeframe. Additionally, students may experience heightened pressure to absorb and grasp the material efficiently.

Despite the constraints, the institution is dedicated to upholding its commitment to providing quality education. Steps are being taken to optimize the available time effectively, such as refining teaching methodologies, focusing on core concepts, and prioritizing key learning objectives. Faculty and staff members are collaborating to create a supportive learning environment that addresses the unique challenges posed by the time constraints.

The college recognizes the importance of a balanced and comprehensive education, and although the situation is challenging, efforts are being made to ensure that students receive a meaningful and enriching academic experience. The institution remains committed to facilitating student success while navigating the difficulties posed by the delayed admissions process.

Syllabus of Bridge Courses:

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SESSION 2022-23

Semester: FIRST SEM
Name of Class Teacher: Dr Anju Singh
Bridge Course: 1st August 22 to 31st August 22

DAY	1 (9:30-10:30)	2 (10:30-11:30)	3 (11:30-12:30)	(12:30-1:20)	4 (1:20-2.20)	5 (2:20-3:10)	6 (3:10-4:00)
MONDAY				BREAK			Bridge Course
TUESDAY							Bridge Course
WEDNESDAY							Bridge Course
THURSDAY							Bridge Course
FRIDAY							Bridge Course

yllabus of Bridge Courses

The Department of Basic Science and Humanities conducts an annual Bridge Course for newly admitted students, offering a vital transition from their Higher Secondary education to their upcoming undergraduate studies. The primary goal is to narrow the gap between their prior coursework and the subjects they will encounter in their degree programs. The course curriculum is thoughtfully designed to provide a foundational understanding of the subjects they'll study in college.

This four-week program focuses on enhancing and developing students' academic and personal skills. It also places special emphasis on students hailing from rural and semi-rural backgrounds, recognizing the unique challenges they may face. By addressing both academic and holistic development, the Bridge Course aims to

groom students for a successful college experience, ensuring they are well-prepared for the challenges and opportunities that lie ahead in their educational journey.

objectives

1. Bridge the gap between school and college education, addressing students' communicative needs.
2. Prepare students for a classroom environment where English is the medium of instruction.
3. Assist students in acquiring fundamental skills necessary for their academic journey.

Methodology

A distinct curriculum is devised for the Bridge Course in English and introduced to students in the initial week. Following the course's conclusion, a post-bridge course test evaluates students' proficiency, and constructive feedback is provided to encourage further improvement in their language skills and comprehension.

Syllabus for Bridge Course of English

The Bridge Course in English covers a comprehensive range of topics to enhance students' language proficiency and communication skills. These include:

1. Basic English Grammar

2. Vocabulary Building and Usage

3. Idioms and Phrases

4. Sentence Formation and Transformation

5. Listening and Speaking Skills with a Focus on Conversational English

6. Interview Skills

7. Development of Listening, Reading, Writing, and Speaking Abilities

8. Comprehension Skills

9. Precis Writing, Paragraph Writing, and Report Writing

10. Public Speaking

11. Group Discussions

12. Debate

13. Declamation Contest

14. Extempore Speech

15. Profile Writing

16. Resume Preparation

17. Effective Use of Dictionaries

18. How to Read and Utilize Newspapers for Learning

Syllabus for Bridge Course of Mathematics

Duration: 5 Hours

Tentative Period: September 2022

Topics

1. Sets, relations and functions

2. Algebra of functions, Limits and continuity of functions, graphs

3. Trigonometric functions - Identities and properties

4. Quadratic equations and solutions

5. Polynomial functions and rational functions

6. Differentiation

7. Integration

8. Basic geometry - Slope of a line, area, volume and surface area of solids

Note: In addition to the sessions on the above topics, MCQ will be conducted to assess the level of students and necessary measures will be taken.

Syllabus for Bridge Course of Chemistry:

Duration: 5 Hours

Tentative Period: September 2022

Module 1:

Introduction to physical chemistry Applications of the techniques and theories of physics to the study of chemical systems-concepts of the atom, molecule, element and compound -state of matter- basics of thermodynamics-general concepts of chemical kinetics-chemical equilibria-basics of electrochemistry-solutions-basics of surface chemistry concepts of solid state.

Module 2:

Introduction to inorganic chemistry Review of chemical bonding-MO theory and concepts of hybridization-acid base chemistry-redox stability and redox reactions-study of periodic table- classification of elements and periodicity in properties -basics of co-ordination chemistry-basic concepts of organometallics.

Module 3:

Introduction to organic chemistry Basic principles of organic chemistry-balancing chemical equations-tetravalence of carbon and shapes of organic compounds-classification of organic compounds-nomenclature-isomerism-fundamentals concepts in organic reaction mechanism-named reactions.

Syllabus for Bridge Course of Physics:

Duration: 5 Hours

Tentative Period: September 2022

Module 1- Elasticity, modulus of elasticity, viscosity, surface tension, Newtons laws of motion, moment of inertia, oscillation, simple harmonic motion, stationary waves, thermal properties of material, kinetic theory of gases.

Module 2- Electrostatics, dielectrics, electromagnetic induction, Kirchhoff's law, AC circuits, magnetism, properties of light.

Module 3 : Basic circuit component- Resistors, Capacitors, Transistors, ICs, Solid state electronic components

Module 4 : Properties of Matter

Minor Activity : Measurement of elasticity of different materials.

Major Activity : Measurement of Pressure and thrust in liquids.

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Outcome of Bridge course

First Year Student List 2022-23

CLASS 12

S. NO.	Branch	NAME OF STUDENTS	PHYSICS	CHEMISTRY	MATHEMATICS	MEDIUM	MCQ Score
							Score
1	CSE	Anisha Kumari	96/100	97/100	99/100	English	33 / 40
2	Et & T	Ashish Soni	49/100	60/100	47/100	Hindi	36 / 40
3	ELE	Ashwani Kumar Pandey	65/100	55/100	34/100	English	16 / 40
4	CSE	Dheeraj Soni	46/100	49/100	49/100	English	38 / 40
5	CSE	Diksha Soni	58/100	66/100	52/100	Hindi	33 / 40
6	CSE	Durga Jyoti Yadav	55/100	48/100	43/100	Hindi	38 / 40
7	Et & T	Harsh Tarone	71/100	60/100	69/100	Hindi	32 / 40
8	Et & T	Komal Prasad	49/100	61/100	64/100	Hindi	35 / 40
9	CSE	Kunal Devdas	51/100	62/100	34/100	English	38 / 40
10	CSE	Mayank	64/100	60/100	56/100	English	17 / 40
11	CSE	Nafiya Khan	50/100	48/100	63/100	English	16 / 40
12	CSE	Namrata Kumari Sharma	49/100	53/100	53/100	English	33 / 40
13	CSE	Neelkanth	70/100	68/100	71/100	English	36 / 40
14	Et & T	Nihal Sharma	72/100	86/100	90/100	Hindi	32 / 40
15	CSE	Omkar Mishra	74/100	77/100	54/100	English	36 / 40
16	Mech	Sagar Yadav	46/100	48/100	56/100	Hindi	16 / 40
17	CSE	Tannu Majumdar	68/100	68/100	49/100	Hindi	33 / 40
18	CSE	Vishal Yadav	85/100	74/100	69/100	English	20 / 40

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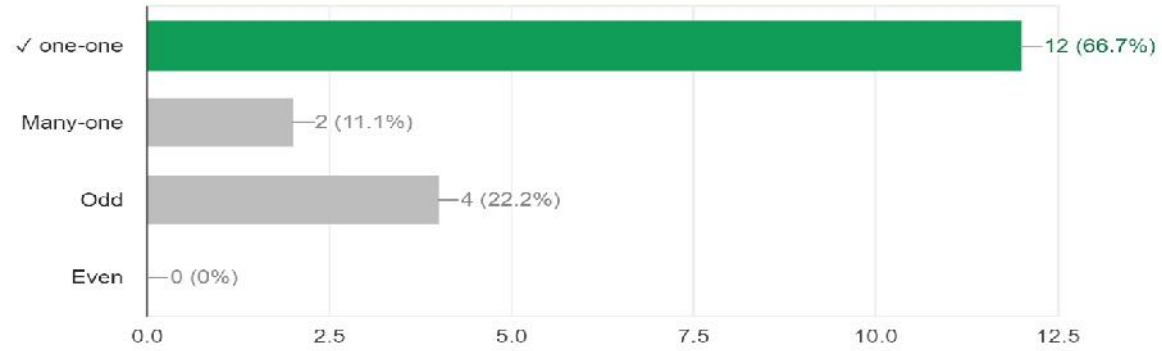
Sample Responses of MCQ Test

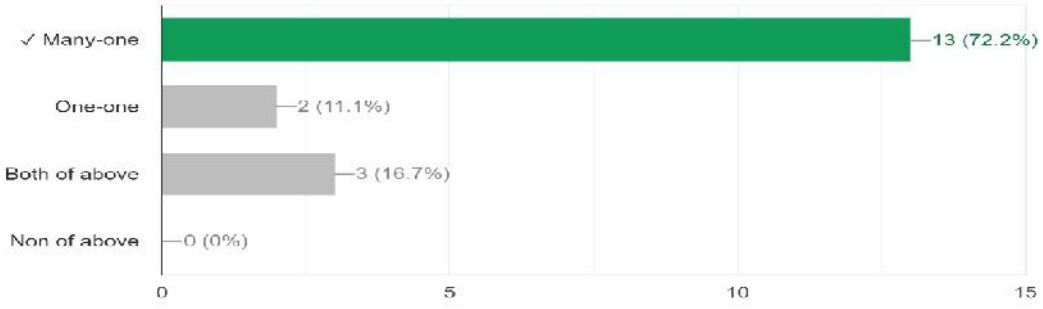
The function f : A → B defined by f(x) = 4x + 7, x ∈ R is

12 / 18 correct responses



The smallest integer function f(x) = [x] is

13 / 18 correct responses



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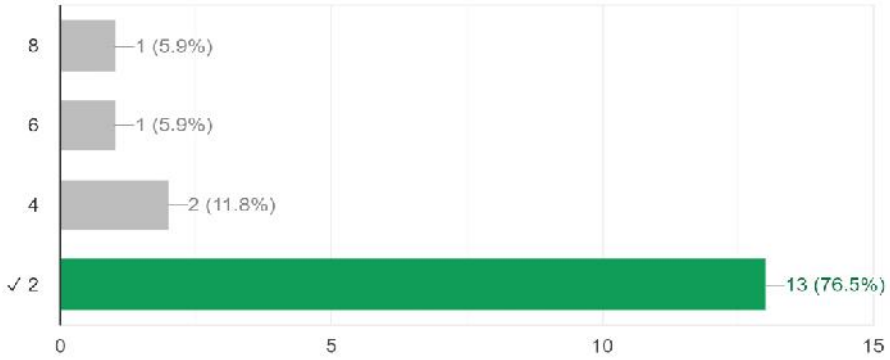
The function f : R ⟶ R defined by f(x) = 3 − 4x is

4 / 18 correct responses

The number of commutative binary operations that can be defined on a set of 2 elements is

13 / 17 correct responses



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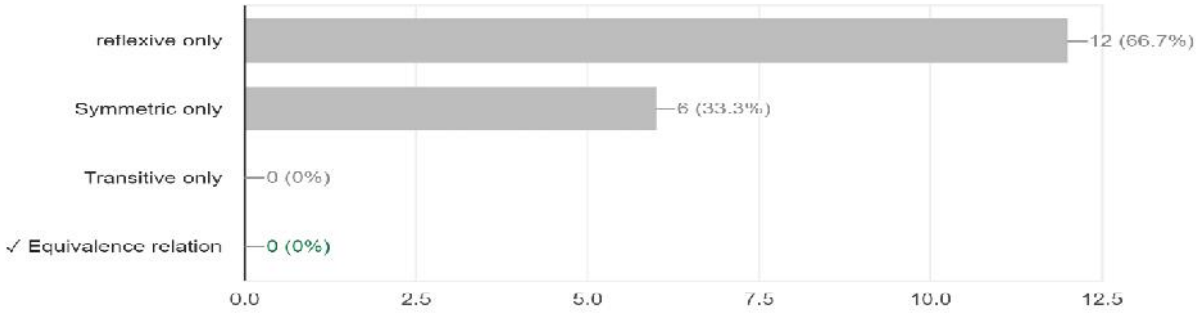
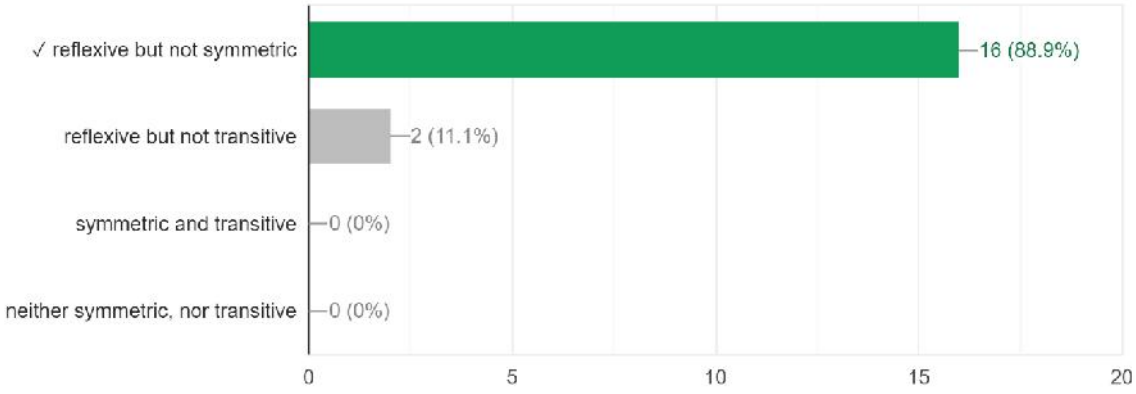
Let S = {1, 2, 3, 4, 5} and let A = S × S. Define the relation R on A as follows: (a, b) R (c, d) iff ad = cb. Then, R is

0 / 18 correct responses



Let A = {1, 2, 3} and consider the relation R = {(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)}. Then R is

16 / 18 correct responses



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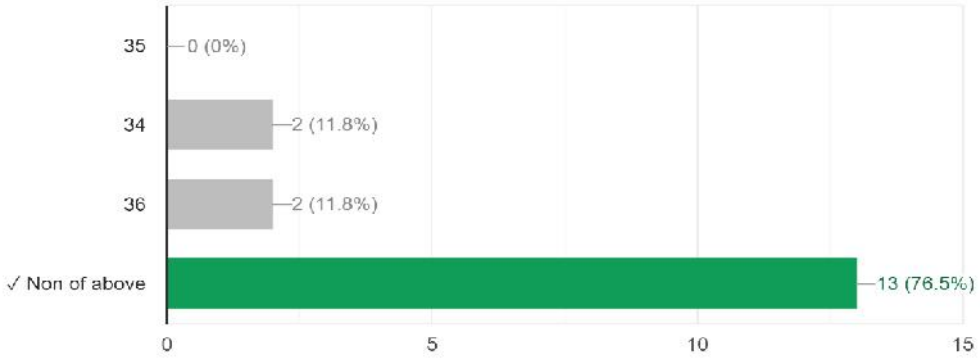
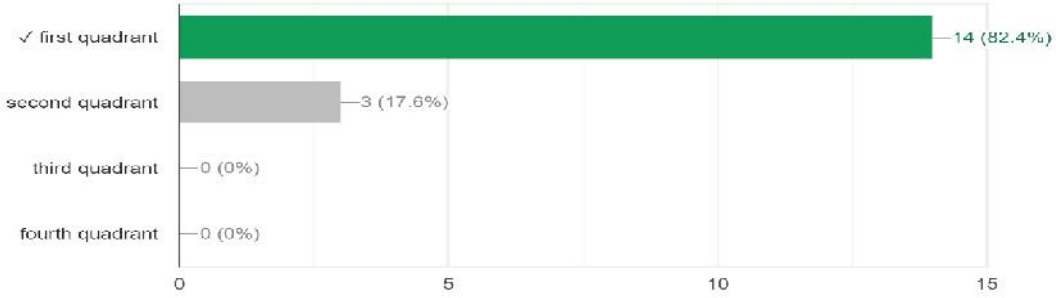
The maximum value of f = 4x + 3y subject to constraints x ≥ 0, y ≥ 0, 2x + 3y ≤ 18; x + y ≥ 10 is

13 / 17 correct responses



Region represented by x ≥ 0, y ≥ 0 is

14 / 17 correct responses



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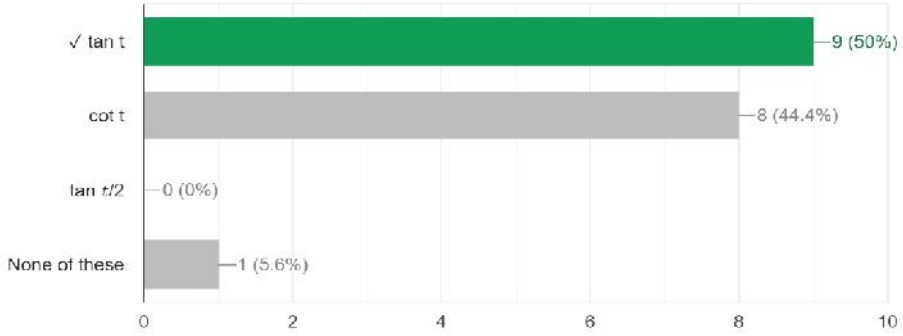
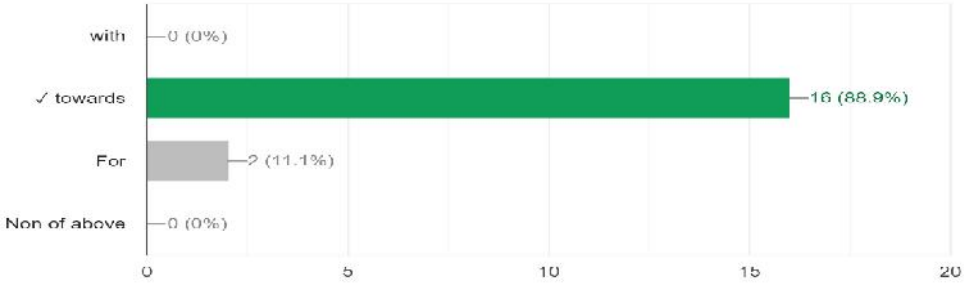
The slope of the tangent to the curve x = a sin t, y = a{cot t + log(tan *t*/2)} at the point 't' is

9 / 18 correct responses



Her thinking leans ____ democracy

16 / 18 correct responses



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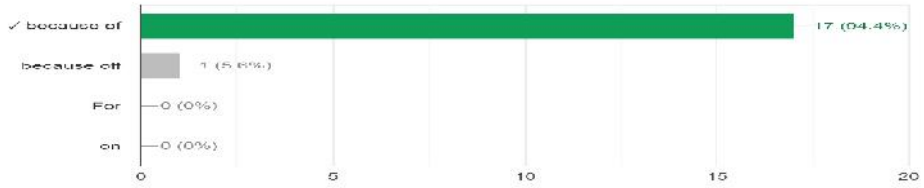
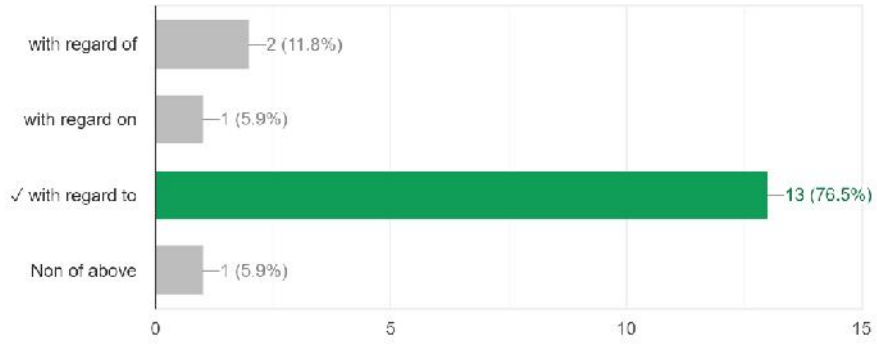
He got too tired _____ over work

17 / 18 correct responses



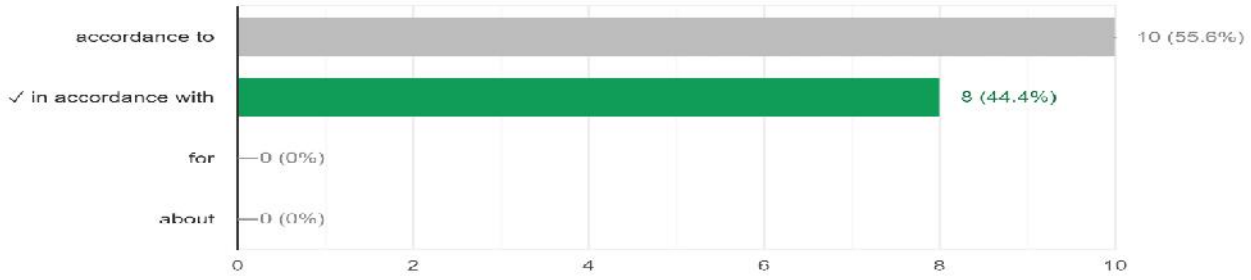
_____ his principles, he has to be very careful

13 / 17 correct responses



Building has been built _____ the new plan.

8 / 18 correct responses



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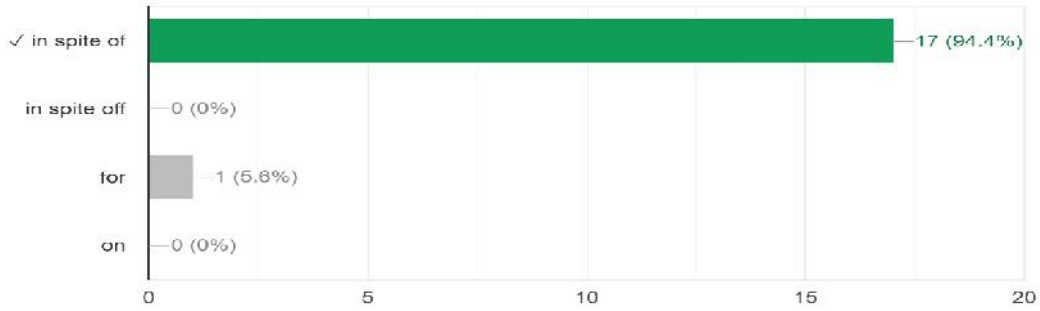
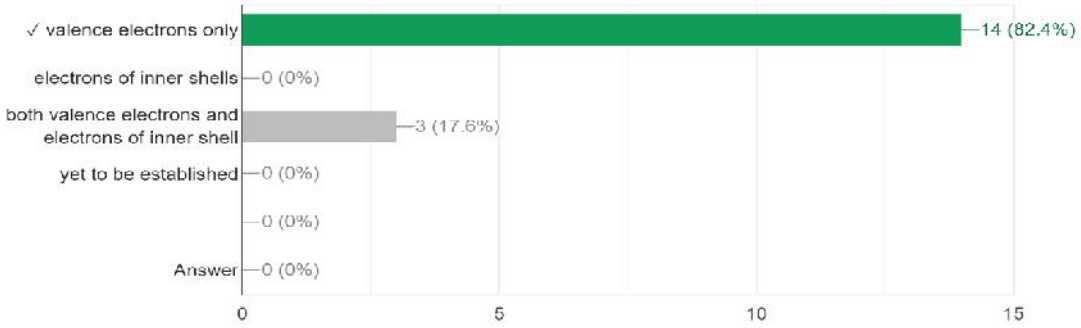
He crossed the broken bridge ____ warning

17 / 18 correct responses



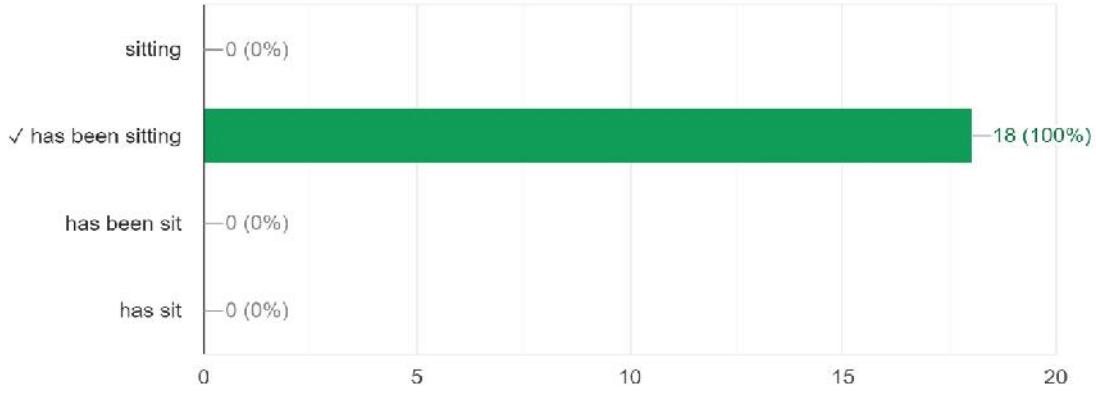
On rubbing, when one body gets positively charged and other negatively charged, the electrons transferred from positively charged body to negatively charged body are

14 / 17 correct responses



She ____ in the sun for 1 hour

18 / 18 correct responses



Criterion 7

QIM 7.2.1 Best Practices (I)

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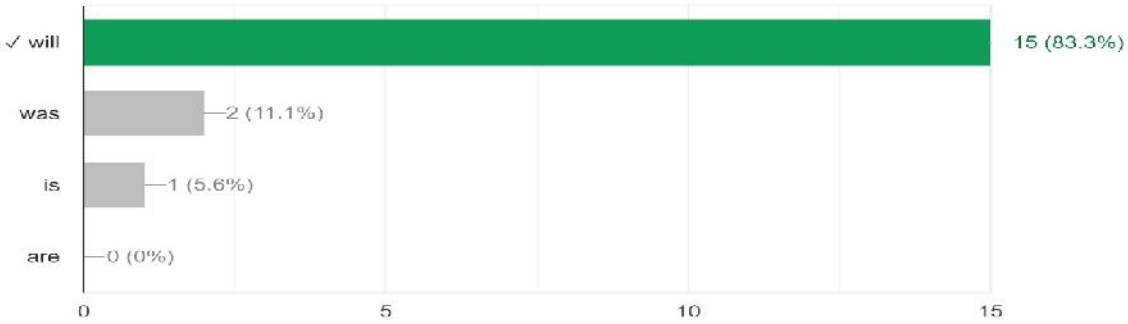
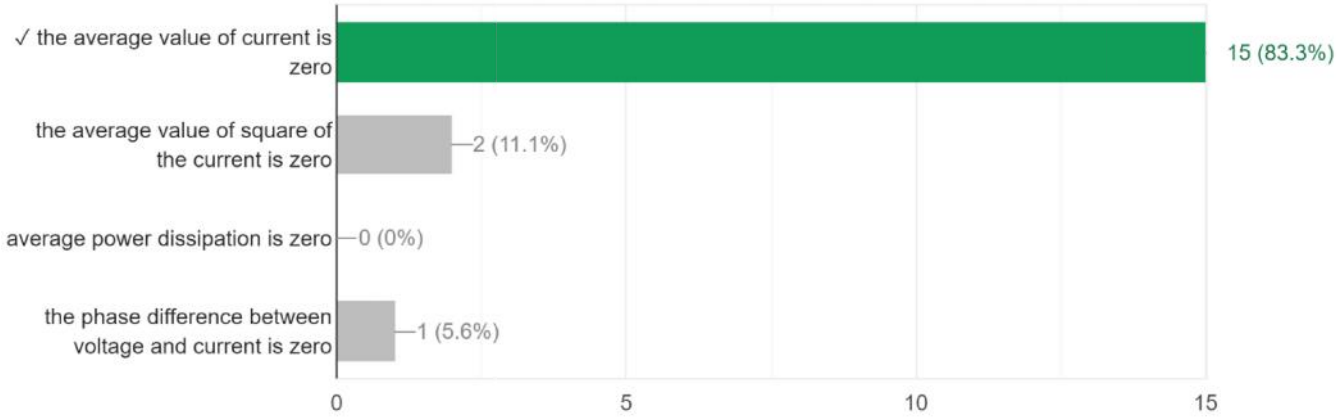
____ it help you in your studies ?

15 / 18 correct responses



In general in an alternating current circuit

15 / 18 correct responses



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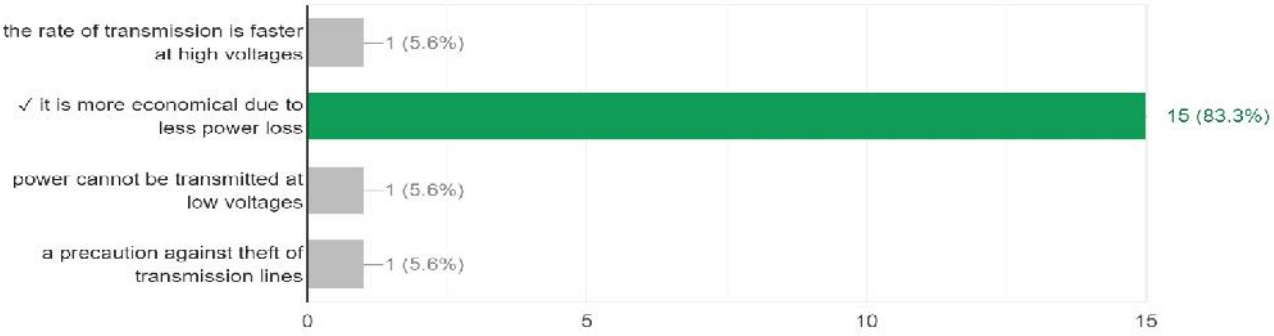
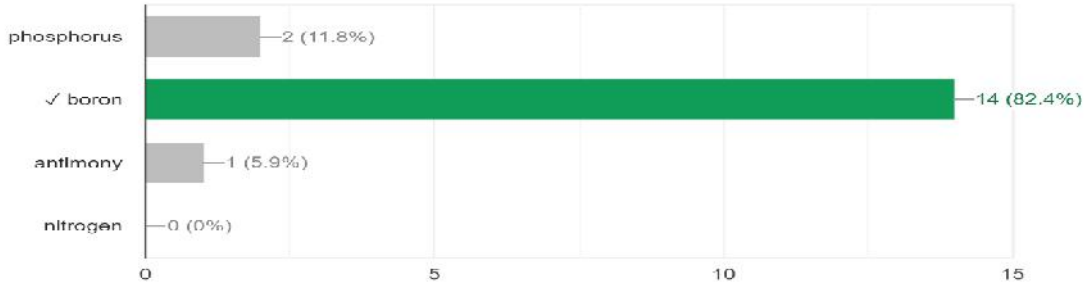
A.C. power is transmitted from a power house at a high voltage as

15 / 18 correct responses



The impurity atoms with which pure silicon may be doped to make it a p-type semiconductor are those of

14 / 17 correct responses



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