



Department of Instrumentation and  
Control Engineering

**SARANATHAN COLLEGE OF  
ENGINEERING**

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## EDITORIAL

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SEPT-DEC 2021



# **FOREWARD**

**Life is so different. Edit your life frequently, It's your masterpiece after all. We are at the end of 2021. This year has taught us to survive it, in every kind of situations, with positivity, and confidence. We are happy and overwhelmed that we are back to normal. Our university has started working and we are able to go to the college as always. Problems are like wild thorns, that keep on growing again and again. but it is just that we'll all stay united and fight back to win.**

## **FROM THE EDITORS DESK**

**Dear Readers,**

**It's our pleasure to provide you with interesting articles. From this edition, the magazine of ICERYX is getting its new form. Hope you would like to read it this way. Many new measures have been taken to bring in more fervent readers for our magazine. From the Public Relations team, we express gratitude to everyone who supported us in this endeavor. Stay tuned to update yourself with the deeds of our department as well as the outside world. Happy reading!**



## ***PR TEAM***

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**MUKESH.P  
SHARAN.R  
SHERENE.G  
HARI VARSHINI.S**

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**SIVA SUBRAMANIAN. A**

**II YEAR**

**REGENA ARSHINI  
DHARSHINI.G  
JAYALAKSHMI. R  
SWATHI .A**

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**SHARLENE. A  
BAIRAVI .S**

**III YEAR**

**HARIHARAN.T  
SHIVA SHANKAR.A  
SURYA PRAKASH.D**

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**VASUNDRA.R  
SWETHA.R  
PRANAV KUMAR .S**

**IV YEAR**

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# ARTICLE

## INDIAN ARMY FORCES

The Indian Armed Forces are the military forces of the Republic of India. It consists of three professional uniformed services: the Indian Army, Indian Navy, and Indian Air Force. Additionally, the Indian Armed Forces are supported by the Central Armed Police Forces, Assam Rifles, Indian Coast Guard and Special Frontier Force, and various inter-service commands and institutions such as the Strategic Forces Command, the Andaman, and Nicobar Command, and the Integrated Defence Staff. The President of India is the Supreme Commander of the Indian Armed Forces. The Indian Armed Forces are under the management of the Ministry of Defence (MoD) of the Government of India. With a strength of over 1.4 million active personnel, it is the world's second-largest military force and has the world's largest volunteer army. It also has the third-largest defense budget in the world. As per the 2015 Credit Suisse report, the Indian Armed Forces is the world's fifth-most powerful military, whereas the 2020 Global Firepower report lists it as the fourth most-powerful military.



**Emblem of the Indian Armed Forces**



**Flag of Indian Armed Forces**

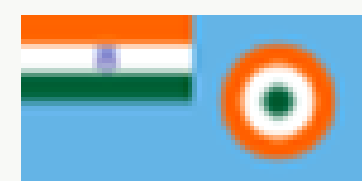
**Service branches:**



**Indian Army:**



**Indian Navy:**



**Headquarters:** Ministry of Defence, South Block, New Delhi.

**Leadership:** Supreme Commander as President Ram Nath Kovind. Prime Minister as Narendra Modi. Minister of Defence as Rajnath Singh. Defence Secretary as Ajay Kumar, IAS.

**Budget:** ₹ 478,195 crore (US\$64 billion) (2021–22) (ranked 3rd).

**Percent of GDP:** 2.4% (2019)

It is important to note that the Central Armed Police Forces, which are referred to as 'Armed Police Forces' are not armed forces. As such they are headed by civilian officers from the Indian Police Service and are under the control of the Ministry of Home Affairs, not the Ministry of Defence. The Indian armed forces have been engaged in several major military operations, including the Indo-Pakistani wars of 1947, 1965, and 1971, the Portuguese-Indian War, the Sino-Indian War, the 1967 Chola incident, the 1987 Sino-Indian skirmish, the Kargil War, and the Siachen conflict among others.

The Department of Defence Production of the Ministry of Defence is responsible for the indigenous production of equipment used by the Indian Armed Forces. It comprises the 41 Indian Ordnance Factories under the control of the Ordnance Factories Board, and eight Defence PSUs namely: HAL, BEL, BEML, BDL, MDL, GSL, GRSE, and Midhani. India remains one of the largest importers of defense equipment with Russia, Israel, France, and the United States being the top foreign suppliers of military equipment. The Government of India has launched a Make in India initiative to indigenize manufacturing and reduce dependence on imports, including defense imports and procurement.

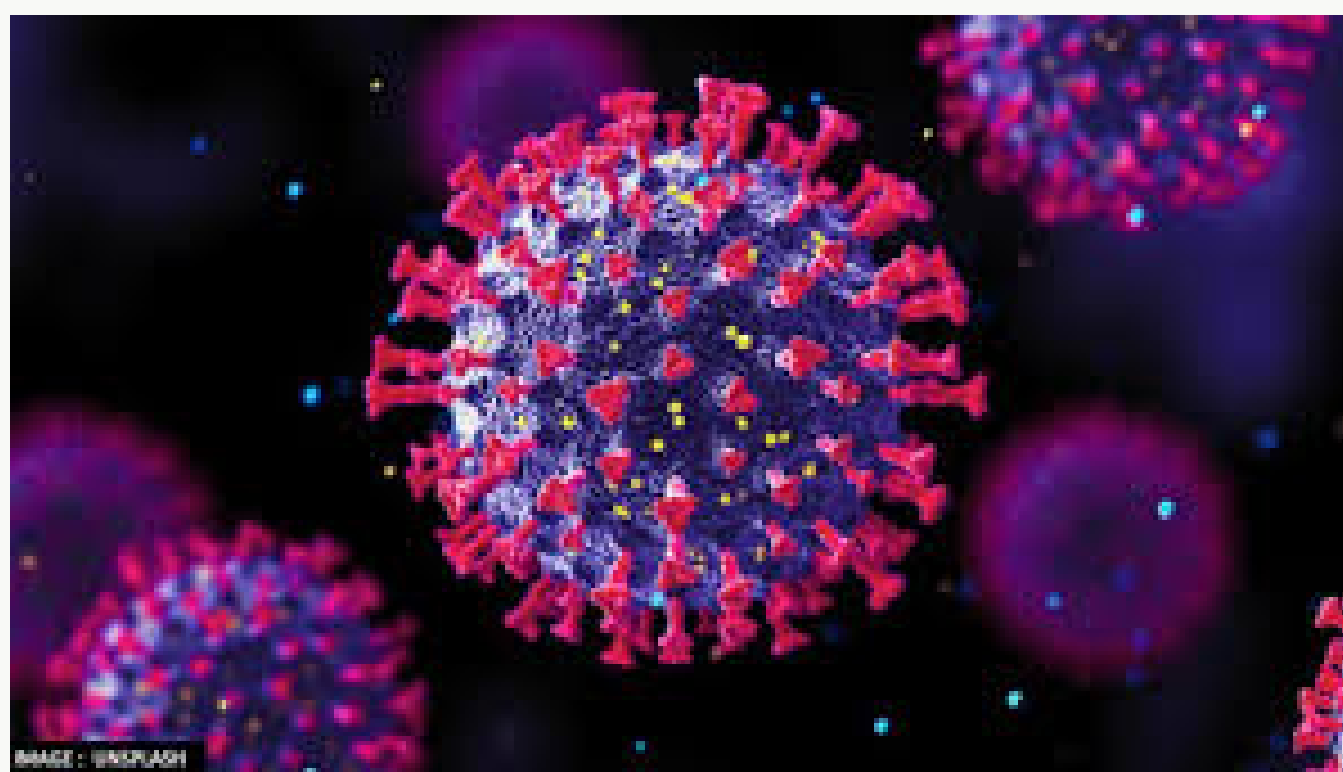


# ARTICLE

## OMICRON - THE NEW VARIANT

The Omicron variant (for other names, see § Nomenclature) is a variant of SARS-CoV-2, the virus that causes COVID-19. It was first reported to the World Health Organization (WHO) from South Africa on 24 November 2021. On 26 November 2021, the WHO designated it as a variant of concern and named it after omicron, the fifteenth letter in the Greek alphabet.

The World Health Organization (WHO) declared Omicron to be a COVID-19 variant of concern based on preliminary evidence that it spreads quickly. A variant of concern is one that may change how the pandemic behaves, so the WHO pays close attention to it.



### Spreading over the world:

According to the data by the Ministry of Health, the Omicron variant, which was first identified in South Africa exactly a week ago, has been detected in at least 30 countries, including in India.

### Signs and symptoms:

No unusual symptoms have yet been associated with the variant and, as with other variants, some individuals are asymptomatic in patients who had fatigue, aches and pains, but no cough or change in sense of smell or taste.

### Does the new variant spread faster?

On Friday, scientists presented evidence that the variant spreads twice as fast as the delta variant.

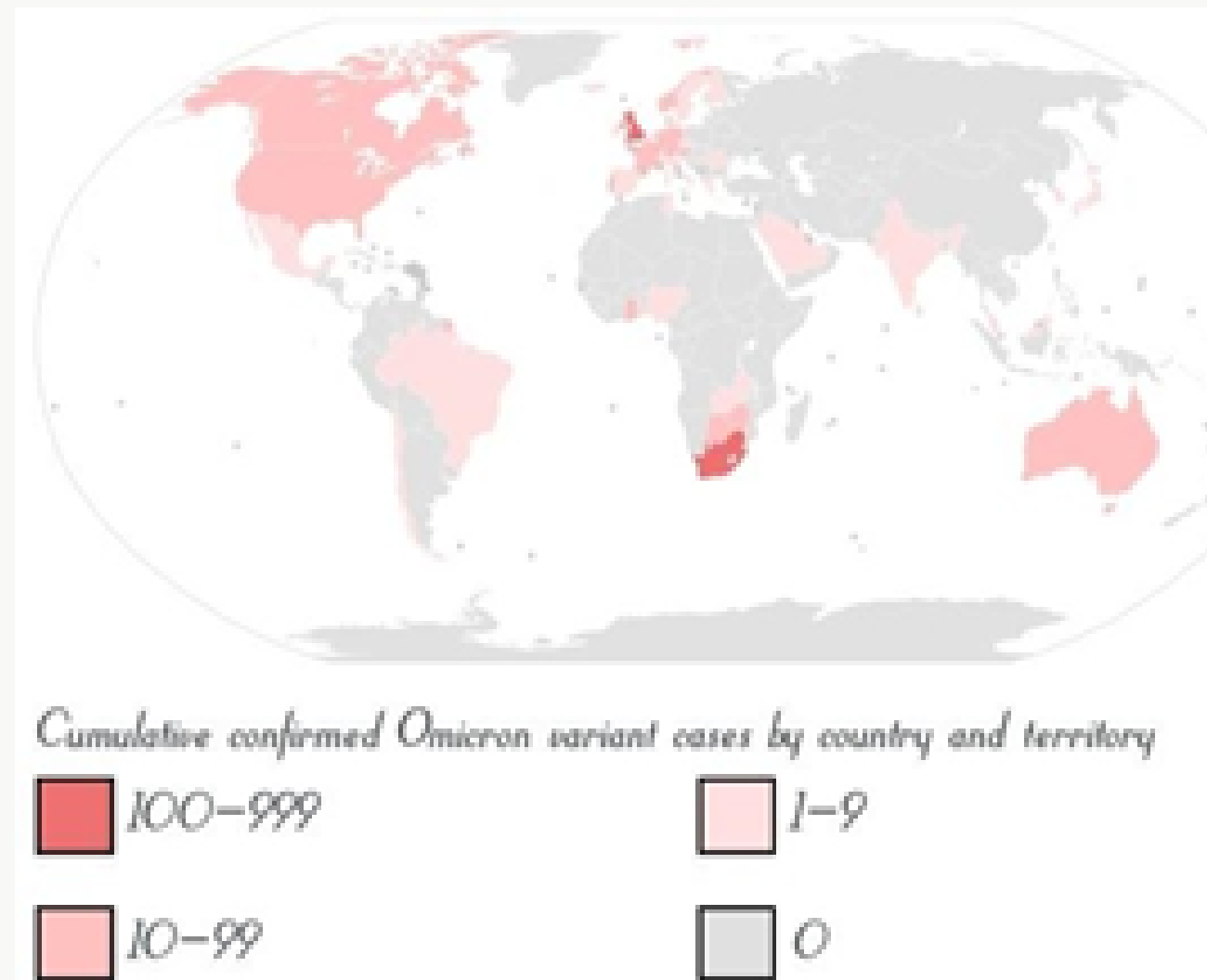
### Is Omicron worse than delta?

In general, it's too early to make a claim that omicron has better or worse symptoms than delta. Although anecdotal evidence shows that confirmed cases of COVID-19 caused by omicron have caused mild symptoms, most of those people have been younger, according to South Africa's health department.

It is not yet clear whether infection with Omicron causes more severe disease compared to infections with other variants, including Delta. Preliminary data suggests that there are increasing rates of hospitalization in South Africa, but this may be due to increasing overall numbers of people becoming infected, rather than a result of specific infection with Omicron. There is currently no information to suggest that symptoms associated with Omicron are different from those from other variants. Initial reported infections were among university students younger individuals who tend to have more mild disease but understanding the level of severity of the Omicron variant will take days to several weeks. All variants of COVID-19, including the Delta variant that is dominant worldwide, can cause severe disease or death, in particular for the most vulnerable people, and thus prevention is always key.

### Statistics:

The chance of detecting a case varies significantly, especially depending on a country's sequencing rate. For example, South Africa sequences far more samples than any other country in their continent, but at a considerably lower rate than most Western nation.



### Effectiveness of vaccines:

WHO is working with technical partners to understand the potential impact of this variant on our existing countermeasures, including vaccines. Vaccines remain critical to reducing severe disease and death, including against the dominant circulating variant, Delta. Current vaccines remain effective against severe disease and death.

### Effectiveness of current tests:

The widely used PCR tests continue to detect infection, including infection with Omicron, as we have seen with other variants as well. Studies are ongoing to determine whether there is any impact on other types of tests, including rapid antigen detection tests.

### Effectiveness of current treatments:

Corticosteroids and IL6 Receptor Blockers will still be effective for managing patients with severe COVID-19. Other treatments will be assessed to see if they are still as effective given the changes to parts of the virus in the Omicron variant.

### Recommended actions for people:

The most effective steps individuals can take to reduce the spread of the COVID-19 virus is to keep a physical distance of at least 1 metre from others; wear a well-fitting mask; open windows to improve ventilation; avoid poorly ventilated or crowded spaces; keep hands clean; cough or sneeze into a bent elbow or tissue; and get vaccinated when it's their turn.

WHO will continue to provide updates as more information becomes available, including following meetings of the TAG-VE. In addition, information will be available on WHO's digital and social media platforms.

As with other variants, the WHO recommended that people continue to keep enclosed spaces well ventilated, avoid crowding and close contact, wear well-fitting masks, clean hands frequently, and get vaccinated.





# APTITUDE

1. There are two examinations rooms A and B. If 10 students are sent from A to B, then the number of students in each room is the same. If 20 candidates are sent from B to A, then the number of students in A is double the number of students in B. The number of students in room A is:

- A. 20                      C. 100  
B. 80                      D. 200

2. 4 mat-weavers can weave 4 mats in 4 days. At the same rate, how many mats would be woven by 8 mat-weavers in 8 days?

- A. 4  
B. 8  
C. 12  
D. 16

3. Find out the wrong number in the given sequence of numbers  
25, 36, 49, 81, 121, 169, 225

- A. 36  
B. 49  
C. 121  
D. 169

3. A, B and C enter into a partnership in the ratio : : . After 4 months, A increases his share 50%. If the total profit at the end of one year be Rs. 21,600, then B's share in the profit is:

- A. Rs. 2100  
B. Rs. 2400  
C. Rs. 3600  
D. Rs. 4000

4. The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Their sum is:

- A. 20                      C. 40  
B. 30                      D. None of these

5. The product of two numbers is 4107. If the H.C.F. of these numbers is 37, then the greater number is:

- A. 101                      C. 111  
B. 107                      D. 185

6. An industrial loom weaves 0.128 metres of cloth every second. Approximately, how many seconds will it take for the loom to weave 25 metres of cloth?

- A. 178  
B. 195  
C. 204  
D. 488

7. A takes twice as much time as B or thrice as much time as C to finish a piece of work. Working together, they can finish the work in 2 days. B can do the work alone in:

- A. 4 days  
B. 6 days  
C. 8 days  
D. 12 days

8. The ratio between the length and the breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 km/hr completes one round in 8 minutes, then the area of the park (in sq. m) is:

- A. 15360  
B. 153600  
C. 30720  
D. 307200

9. A man wants to sell his scooter. There are two offers, one at Rs. 12,000 cash and the other a credit of Rs. 12,880 to be paid after 8 months, money being at 18% per annum. Which is the better offer?

- A. Rs. 12,000 in cash  
B. Rs. 12,880 at credit  
C. Both are equally good

10. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?

- A. 12 days  
B. 15 days  
C. 16 days  
D. 18 days

11. A man rows to a place 48 km distant and come back in 14 hours. He finds that he can row 4 km with the stream in the same time as 3 km against the stream. The rate of the stream is:

- A. 1 km/hr  
B. 1.5 km/hr  
C. 2 km/hr  
D. 2.5 km/hr

12. Robert is travelling on his cycle and has calculated to reach point A at 2 P.M. if he travels at 10 kmph, he will reach there at 12 noon if he travels at 15 kmph. At what speed must he travel to reach A at 1 P.M.?

- A. 8 kmph  
B. 11 kmph  
C. 12 kmph  
D. 14 kmph





# REASONING APTITUDE

1. An Informal Gathering occurs when a group of people get together in a casual, relaxed manner. Which situation below is the best example of an Informal Gathering?

- A. A debating club meets on the first Sunday morning of every month.
- B. After finding out about his salary raise, Jay and a few colleagues go out for a quick dinner after work.
- C. Meena sends out 10 invitations for a bachelorette party she is giving for her elder sister.
- D. Whenever she eats at a Chinese restaurant, Roop seems to run into Dibya

2. A Tiebreaker is an additional contest carried out to establish a winner among tied contestants. Choose one situation from the options below that best represents a Tiebreaker.

- A. At halftime, the score is tied at 2-2 in a football match.
- B. Serena and Maria have each secured 1 set in the game.
- C. The umpire tosses a coin to decide which team will have bat first.
- D. RCB and KKR each finished at 140 all out

3. If 11 (170)16, 11(203)19, then value of 17(?)18 will be –

- (A) 200
- (B) 300
- (C) 400
- (D) None of these

4. Reentry occurs when a person leaves his or her social system for a period of time and then returns. Which situation below best describes Reentry?

- A. When he is offered a better paying position, Javed leaves the hotel he manages to manage another one in a neighboring city.
- B. Charan is spending her final year of college studying abroad in China.
- C. Manan is readjusting to civilian life after 2 years of overseas merchant navy service.
- D. After 5 miserable months, Sneha decides that she can no longer share her room with roommate Hital.

5.. Posthumous Award occurs when an award is given to someone, after their death. Choose one situation below as the best example of Posthumous Award.

- A. Late yesteryear actress Sridevi was awarded with a Lifetime Achievement Award posthumously in Filmfare 2019.
- B. Chitra never thought she'd live to receive a third booker prize for her novel.
- C. Emanuel has been honored with a prestigious literary award for his writing career and his daughter accepted the award on behalf of her deceased father.
- D. Meenal's publisher canceled her book contract after she failed to deliver the manuscript on time.

6. If the legislature decides to fund the agricultural subsidy program, national radio, and the small business loan program, what two other programs could they fund?

- A. harbor improvements and international airport
- B. harbor improvements and school music program
- C. hurricane preparedness and school music program
- D. hurricane preparedness and international airport
- E. harbor improvements and hurricane preparedness

7. If  $72 \times 96 = 6927$ ,  $58 \times 87 = 7885$ , then  $79 \times 86 = ?$

- (A) 7689
- (B) 8976
- (C) 6897
- (D) 6978

8. The Sharks and the Bears each finished with 34 points, and they are now battling it out in a five-minute overtime.

- A. When he is offered a better paying position, Jacob leaves the restaurant he manages to manage a new restaurant on the other side of town.
- B. Catherine is spending her junior year of college studying abroad in France.
- C. Malcolm is readjusting to civilian life after two years of overseas military service.
- D. After several miserable months, Sharon decides that she can no longer share an apartment with her roommate Hilary.

9. If  $13 \times 12 = 651$  &  $41 \times 23 = 448$ , then,  $24 \times 22 = ?$

- (A) 504
- (B) 46
- (C) 524
- (D) 924

10. Anil after travelling 6 km towards East from his house realized that he has travelled in a wrong direction. He turned and travelled 12 km towards West, turned right and travelled 8 km to reach his office. The straight distance of the office from his house is:

- (1) 20 km
- (2) 14 km
- (3) 12 km
- (4) 10 km







# MOVIE REVIEW

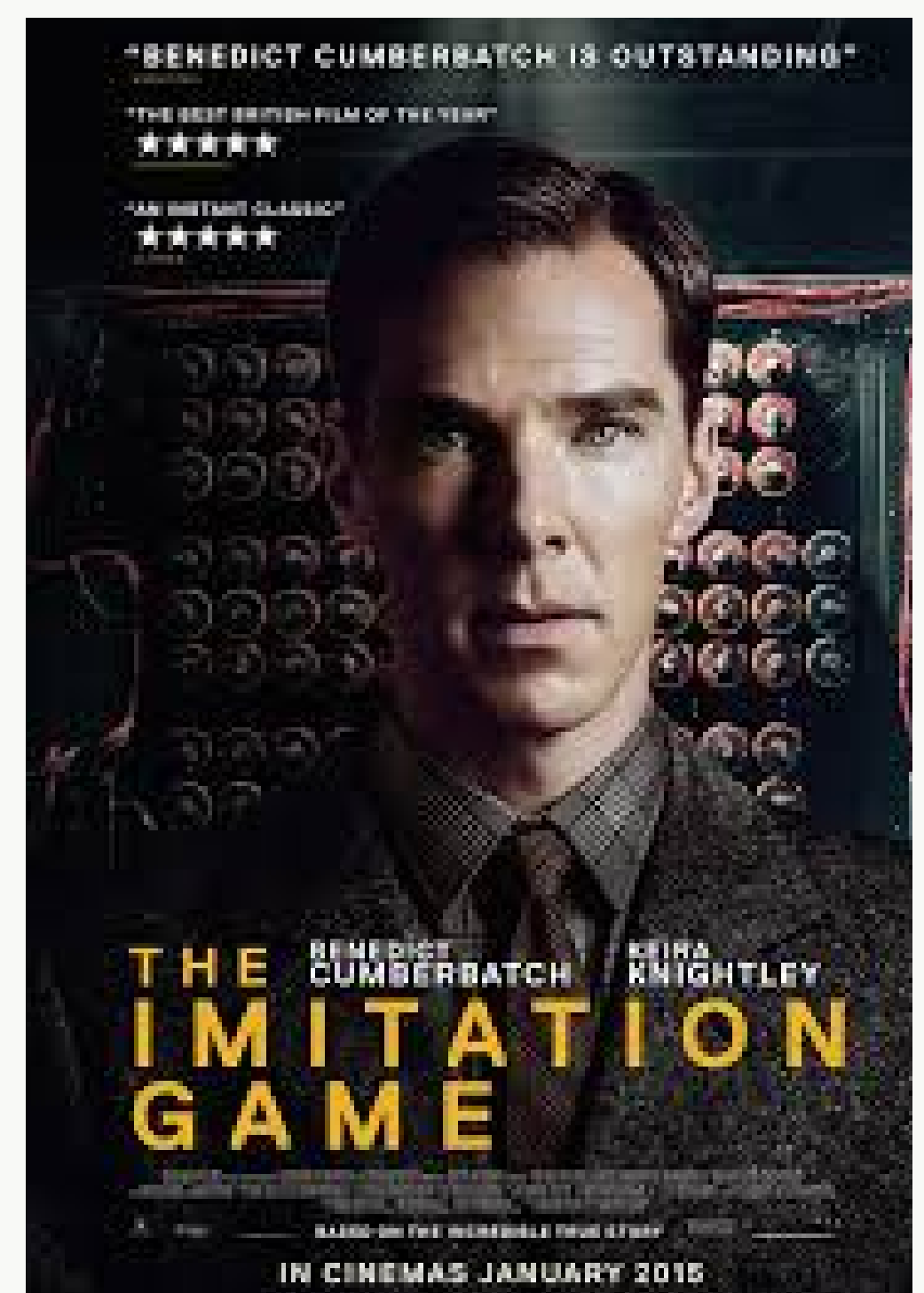
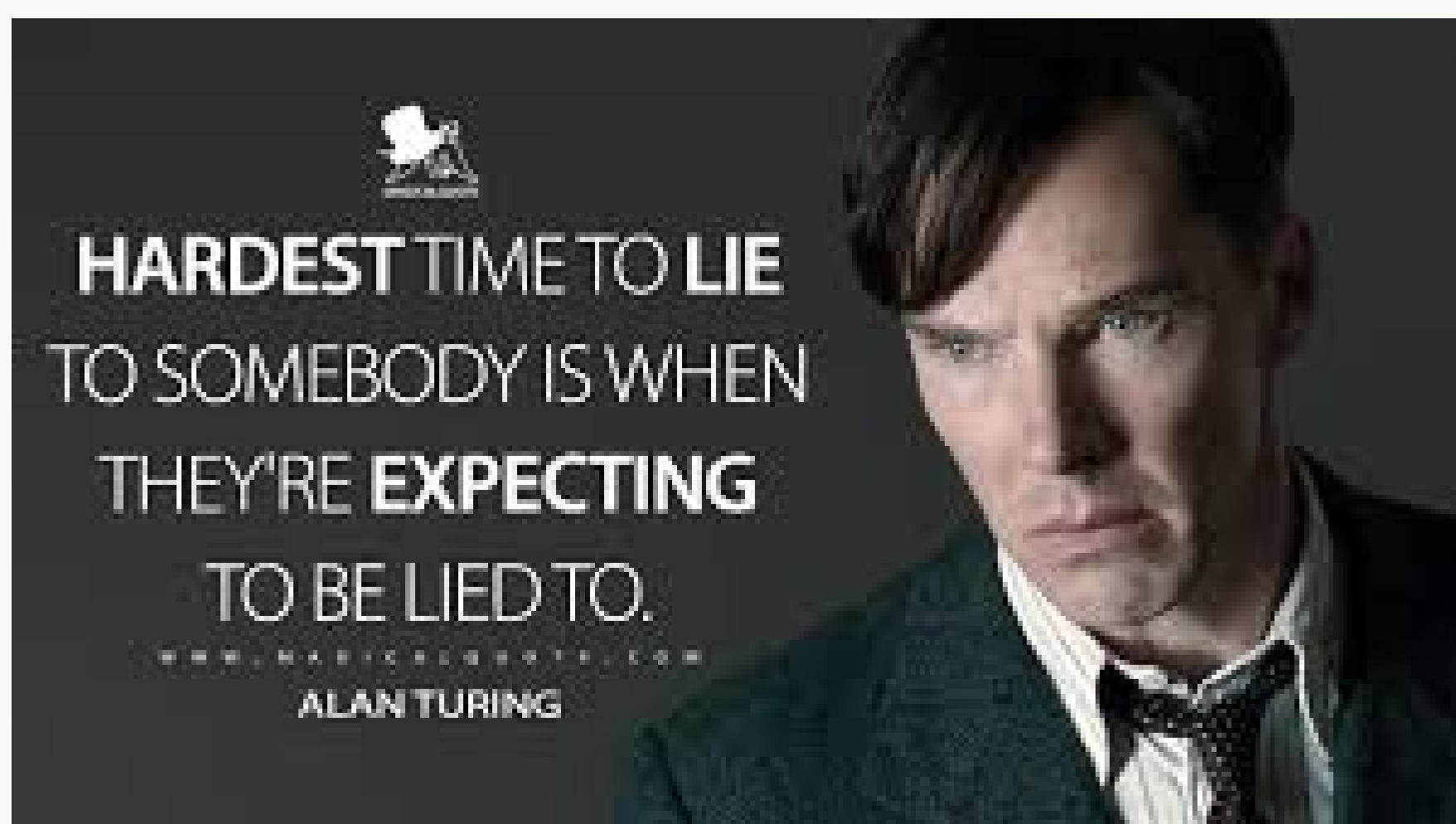
## THE IMITATION GAME (2014)

How odd that “The Imitation Game,” one of the more rousing crowd-pleasers coming out this holiday season—as endorsed by its People’s Choice Award at the Toronto film festival—also happens to be one of the most devastatingly sad.

On one hand, this is a tense World War II thriller about a stellar team of Brits who cracked Nazi Germany’s Enigma code. The movie boasts its own inspirational rallying cry, repeated three times in case you miss it, which would be perfect for embossing on a holly-bedecked greeting card: “Sometimes, it is the people no one imagines anything of who do the things that no one imagines.”

On the other hand, it is an examination of the tragic circumstances that befell Alan Turing, the film’s central hero, who brings victory to the Allies by inventing a revolutionary machine that would give birth to the computer age. He would later be publicly vilified and savagely punished for engaging in homosexual activity, which was criminalized in England at the time, before committing suicide in 1954

Matters turn slightly hokey as the final solution to Enigma code relies on several “By Jove, I’ve got it” revelations. But, by then, you will likely be fully invested in the outcome, no matter how out of left field it might seem. Some of Cumberbatch’s most affecting work is when the older and close-to-defeated Turing is at the end of his rope, unable to even focus on a crossword puzzle because of the drugs he has been given. But as I sit here typing away, I realize I have Turing to thank for being able to access a wealth of information with just a few key strokes and a click of a mouse. Not only did Turing help save the world, he continues to influence it every day.



Instead of being festooned with a chest full of medals, the closeted genius who saved countless lives by significantly shortening the war was cruelly subjected to chemically-induced castration in lieu of jail time.

And, because much of the details were kept classified for 50 years, few knew of the extent of his wartime feats, even though he was awarded the Order of the British Empire for his services in 1945. He was officially pardoned of his offenses by Queen Elizabeth in 2013—a case of too little too late.





# STUDENTS CORNER

## QUIZ COMPETITION :

CONDUCTED BY DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING

Date :26.10.2021

### PRICE WINNERS:

#### 1st place :

CHANDRU.V -2nd Year

BALAJI.V -2nd Year

#### 2nd Place :

KANNAPPAN.S -3rd Year

MOHAN RAJ.B -3rd Year

#### 3rd Place :

DARWIN.I -3rd Year

PRABAHARAN.M -3rd Year







# STUDENTS CORNER

## PROJECT EXPOSURE :

CONDUCTED BY DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING

Date :18.11.2021

## PRICE WINNERS:

### 1st place :

HARI PRAKASH.R  
ROHAN. S  
SANTHOSH. R  
SHARAN.R

-2nd Year  
-2nd Year  
-2nd Year  
-2nd Year



### 2nd Place :

HARIHARAN. T  
MOHAMMED THOUFEEQ, P  
NITHISH KUMAR. R  
SENTHIL ARASAN. B

-4th Year  
-4th Year  
-4th Year  
-4th Year



### 3rd Place :

HARISH. R  
NICOLAS NESAN. G  
PARITHI KUMAR. J  
KRISHNA KUMARAN.K

-3rd Year  
-3rd Year  
-3rd Year  
-3rd Year







# STUDENTS CORNER

## PAPER PRESENTATION :

CONDUCTED BY DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING

Date: 25.11.2021

## PRICE WINNERS:

### 1st Place :

AASHIK.G	-4th Year
NITHISH ANAND.S	-4th Year
SELVABALAJI.KP	-4th Year
SHIVAASANKAR	-4th Year



### 2nd Place :

BHARATH SAMVEL.D	-3rd Year
JAYAKANTHAN.GP	-3rd Year
DHINESH.R	-3rd Year
HARIHARAN.K	-3rd Year



### 3rd Place :

BOOMIKA.S	-2nd Year
HARI VARSHINI.S	-2nd Year
SHERENE AMALIA.G	-2nd Year
LEENA.R	-2nd Year







# FACULTY CORNER

## faculty development program

### Journal Papers Submitted by

1. Dr.P.Aravind, V Veeramani, Dr.S.M Girirajkumar

**Topic :** “A Hybrid State Feedback Controller Design for Two Different Dynamic Systems”

**Journal Details :** International Journal of Operational Research, ISSN online: 1745-7653, ISSN print : 1745-7645, Volume 41, Issue 4, pages 569-576, (IF- 0.54), H-index : 23, UGC Journal -2, sl no. 17300. DOI: 10.1504/IJOR.2021.117075

**Website link:** <https://www.inderscience.com/info/inarticle.php?artid=117075>

2. Khalid Ali Khan, Suleyman Malikmyradovich Nokerov, Dr.Aravind Pitchai Venkataraman, Kehali Anteneh, Diriba Chali

**Topic :** “Single Layer-Single-UWB Patch Antenna for HXLPE Based Artificial Hip Diagnosis in Microwave Tomography Spectrum”

**Journal Details :** International Conference on Recent Trends in Communication & Intelligent Systems (ICRTCIS 2020)

**Organised and conducted by:** Arya College of Engineering & IT, 42 RIICO Industrial Area, Kukas, Jaipur

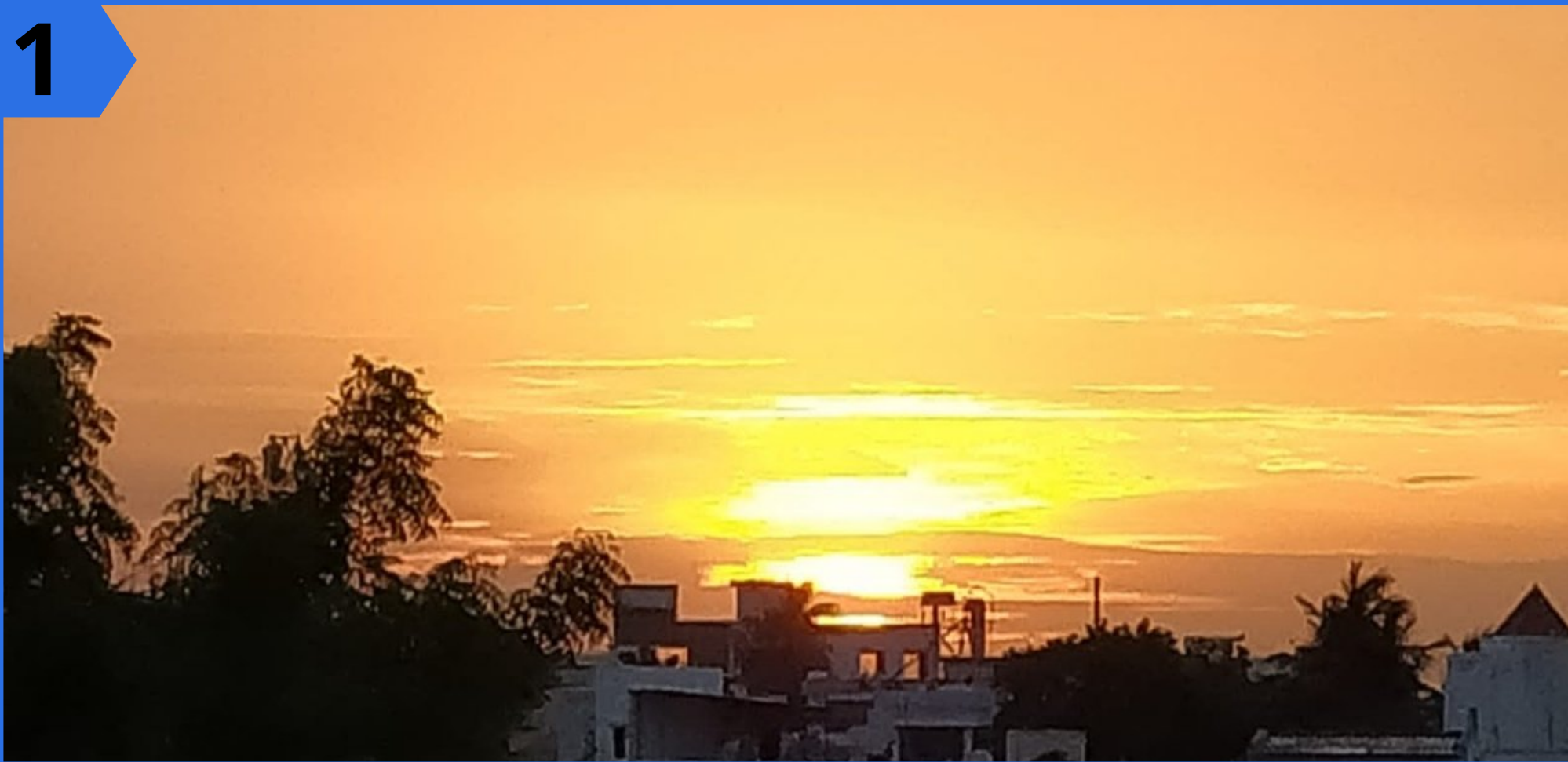
**Date:** 22.10.2021 and 23.10.2021, October 2021.

(Accepted for publication in “Algorithms for Intelligent Systems (AIS)”, Series Springer)



# ART AND PHOTOGRAPHY

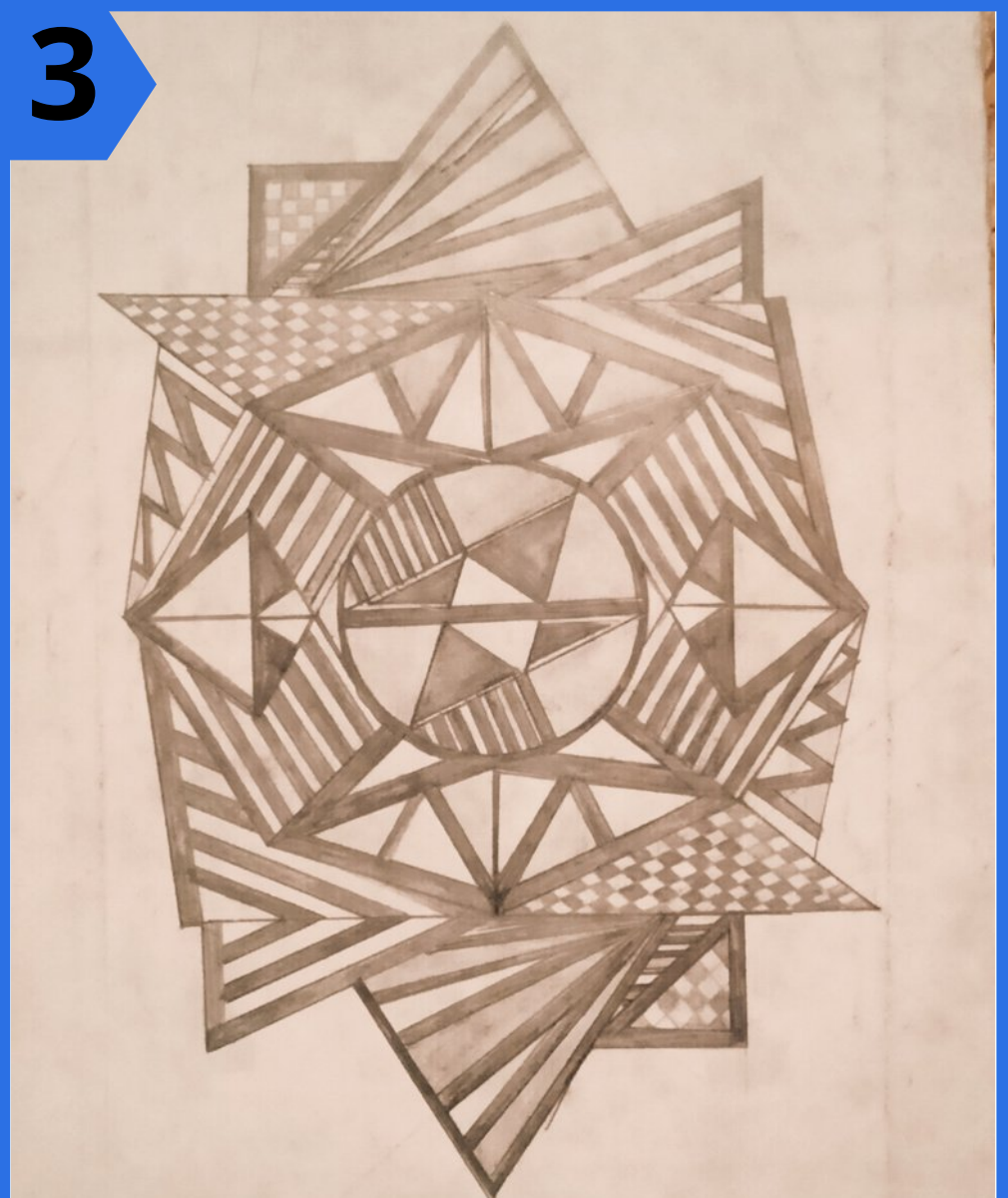
1



2



3



## PHOTOGRAPHY

1. SWATHI.A - 3RD YEAR

## DIGITAL ART

2. KAVIN.G - 2ND YEAR

## ART

3. BAIRAVI.S - 3RD YEAR

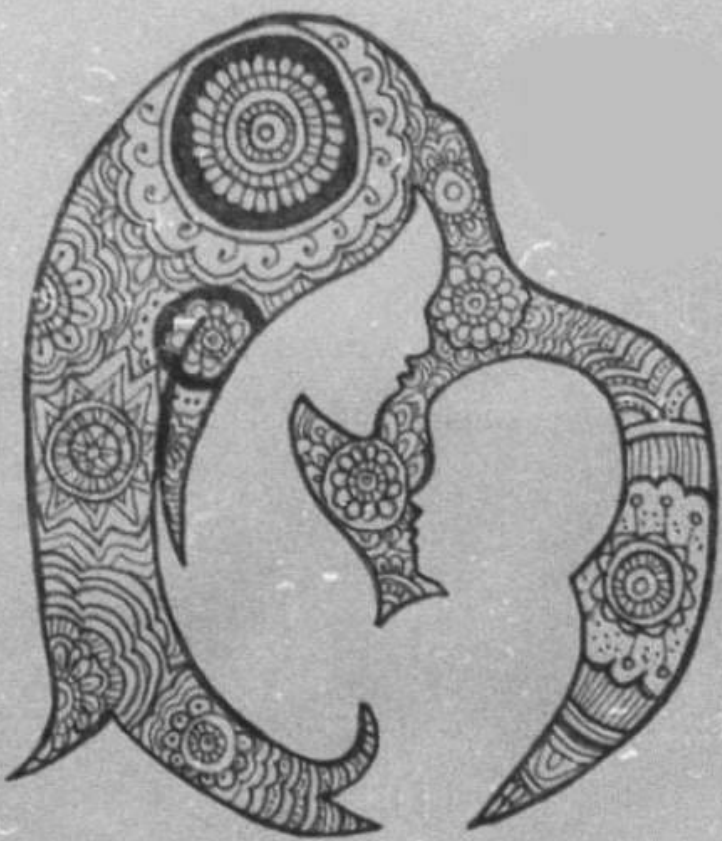


# ART AND PHOTOGRAPHY

1



3



2



## PHOTOGRAPHY

1. SHARLENE.A - 3RD YEAR
2. ROHAN.S - 2ND YEAR

## ART

3. DHARSHINI.G - 3RD YEAR





# TRAINING AND PLACEMENT ACTIVITIES

**Our outstanding final year students have been placed in some of the prestigious companies**

S.NO.	NAME	COMPANY NAME
1	Hariharan.T	CTS
		TCS
2	Harish P.K.	CTS
		TCS
3	Lokesh.R	CTS
4	Mohamed Thoufeeq.P	CTS
		TCS
5	Mohammed Thasneem	WIPRO
6	Nirmalvel.S	TCS
7	Nithish anand.S	CTS
		TCS
8	Pranav Sajesh	LIS
9	Senthil Arasan.B	TCS
10	Akshaya Varshini	Sixphrase
11	Sharmila Rani.A	TCS
12	Suriya Prakaash.D	TCS
13	Vasundra.R	TCS
		CTS

**Congratulations to all the placed students**