



**PANIPAT INSTITUTE OF
ENGINEERING & TECHNOLOGY**

Approved by A.I.C.T.E & Affiliated to Kurukshetra University, Kurukshetra

NEXUS -VIII



ECE News & Events

Vol.1-Edition8

DECEMBER 2016

ABOUT ECE DEPT.

The Department of Electronics and Communication Engineering lays emphasis on Teaching and Research activities in diversified areas there by, molding the students to be Analytical Thinkers, Skilled Communicators and Ethical Leaders.

Our Vision

To excel globally in technical education through research, innovation and consulting in the field of Electronics and Communication Engineering and thus contribute to the larger good of the society.

Our Mission

M1	<i>Establish a unique learning environment to enable the students to face the ever-emerging challenges in the field of Electronics and Communication Engineering.</i>
M2	<i>To equip the students with a broad intellectual spectrum in order to prepare them for diverse and competitive career path.</i>
M3	<i>To increase the visibility of academic programs globally, attract and nurture talent at all levels.</i>
M4	<i>To provide practical oriented education and foster research tie-up with national/ international education institute, research bodies and industry to promote the intellectual and research pursuits of students and faculty</i>
M5	<i>Provide ethical and value-based education by promoting activities addressing the societal needs</i>

PEOs

PEO1	<i>To provide comprehensive knowledge of electronics and communication engineering and related subjects for professional development, advanced education and develop entrepreneur skills.</i>
PEO2	<i>Be receptive to new technologies and attain professional competence through advanced degrees, professional societies, publications and other professional activities.</i>
PEO3	<i>To develop the ability to demonstrate technical competence in the field of electronics and communication engineering by teaching new and advance courses and provide an environment for technology related research.</i>
PEO4	<i>To impart value-based knowledge and enable the students to practice profession with ethics and a sense of social responsibility by making them more aware of contemporary issues</i>

From DIRECTOR'S DESK

"Ideas are easy, Implementation is hard."

- Guy Kawasaki



Prof.(Dr.) K.K.
Paliwal
(Director)

It is a matter of pleasure to speak with all of you through this newsletter. We all can take pride from the fact that each one of us has contributed to the present day glory and growth of our college. And we get comfort from the knowledge that the future of our institution is in safe hands. The growth of our college has been in leaps and bounds. we can expect the continuous growth in the name and fame of our college. Signing off in the hope of meeting you all in the near future.

WISHING YOU GOOD LUCK !

From HOD's DESK

“Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time.” - **Thomas A. Edison**

I am very pleased to present you the newsletter of Electronics and Communication Engineering Department. Within these pages you will find much news related to diverse activities from the whole Faculty members and students. You can see the contributions from Faculties and students. I hope everyone will find this newsletter exciting and interesting.

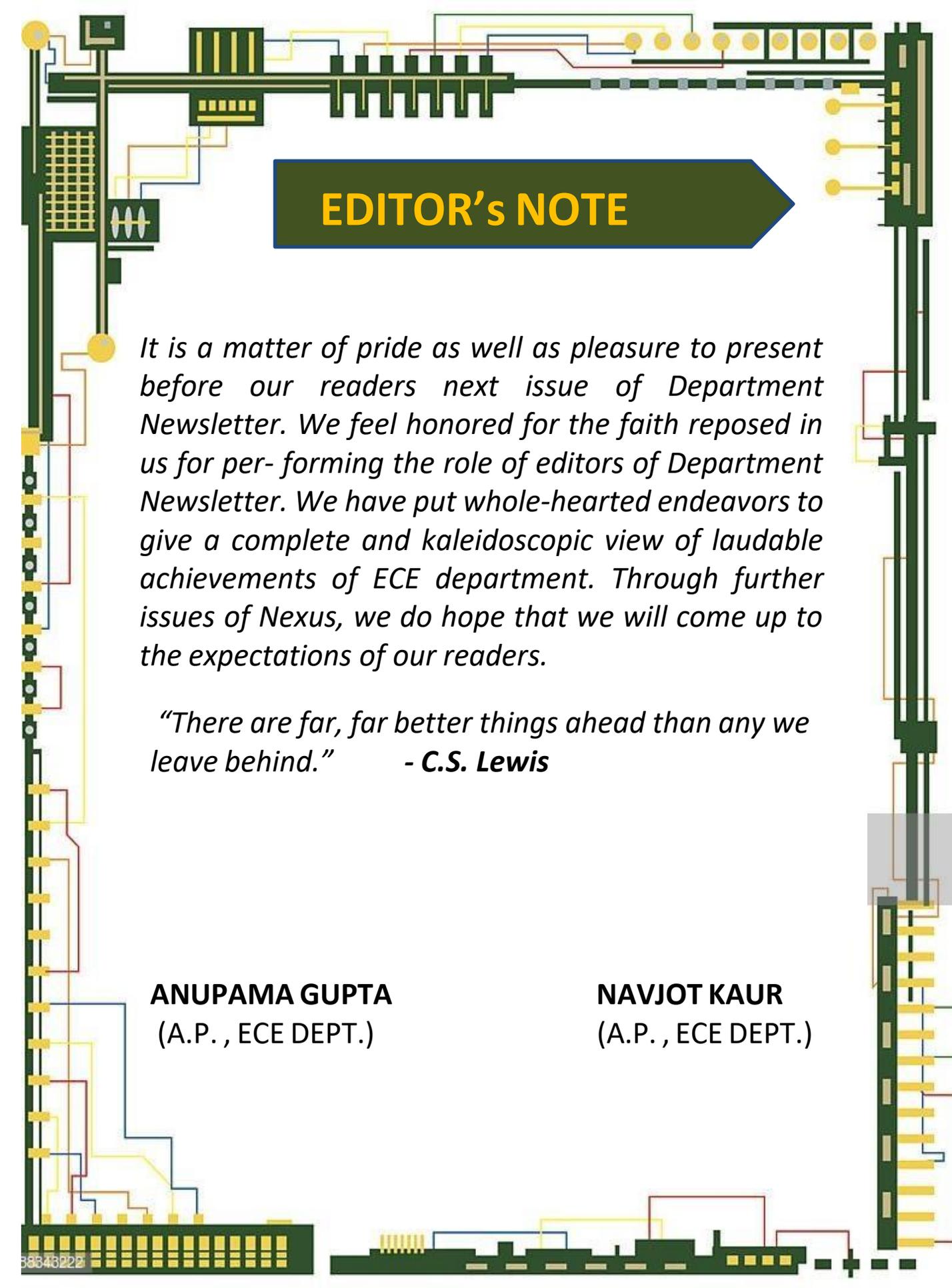
Wishing you
all the best !!!



Prof. Swati Gupta
(HOD ECE)



Please feel free to drop in your suggestions to swatiqupta.ece@piet.co.in



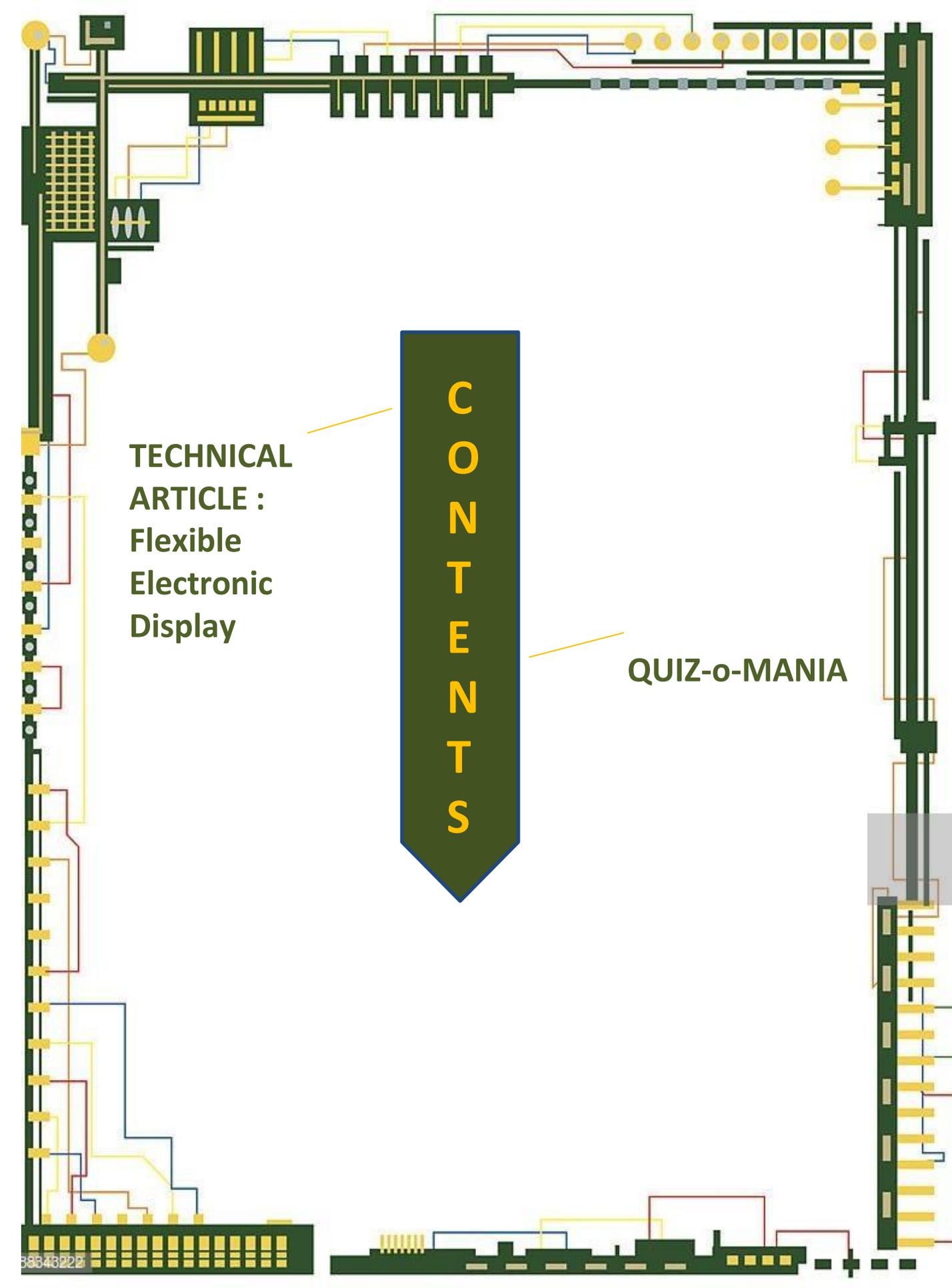
EDITOR'S NOTE

It is a matter of pride as well as pleasure to present before our readers next issue of Department Newsletter. We feel honored for the faith reposed in us for performing the role of editors of Department Newsletter. We have put whole-hearted endeavors to give a complete and kaleidoscopic view of laudable achievements of ECE department. Through further issues of Nexus, we do hope that we will come up to the expectations of our readers.

“There are far, far better things ahead than any we leave behind.” - **C.S. Lewis**

ANUPAMA GUPTA
(A.P., ECE DEPT.)

NAVJOT KAUR
(A.P., ECE DEPT.)



**TECHNICAL
ARTICLE :**
Flexible
Electronic
Display

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QUIZ-o-MANIA

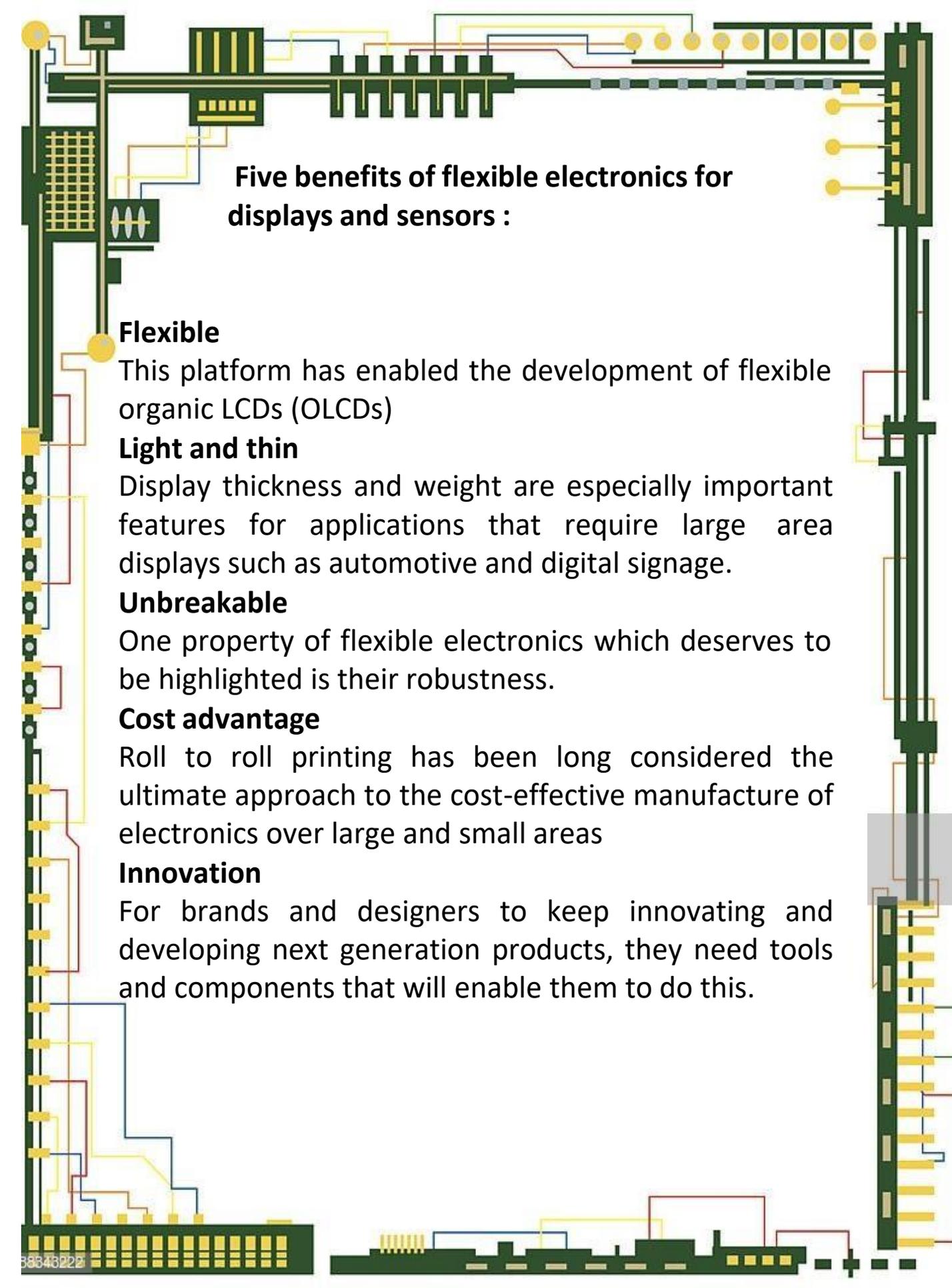
Technical Article : Flexible Electronic Display

Flexible electronics are increasingly being used in a number of applications which benefit from their low profile, light weight, and favorable dielectric properties.

However, despite these advantages, the range of practical, high-volume, applications for flexible electronics will remain limited in the future unless a number of challenges related to lithographic patterning on flexible substrates are successfully addressed.

The most critical of these pertain to system parameters that affect the cost and performance of flexible circuits, including the resolution, panel size, process throughput, substrate distortion, material handling, and yield.





Five benefits of flexible electronics for displays and sensors :

Flexible

This platform has enabled the development of flexible organic LCDs (OLCDs)

Light and thin

Display thickness and weight are especially important features for applications that require large area displays such as automotive and digital signage.

Unbreakable

One property of flexible electronics which deserves to be highlighted is their robustness.

Cost advantage

Roll to roll printing has been long considered the ultimate approach to the cost-effective manufacture of electronics over large and small areas

Innovation

For brands and designers to keep innovating and developing next generation products, they need tools and components that will enable them to do this.



Its wide variety of applications..

1. Smart Cards, Electronic Paper
2. Mobile communications
3. Personal computers/ portable displays/E-Readers
4. Large area displays
5. Wearable Electronics
6. Automotive Applications
7. Non-display Applications (toys, plastic arts etc.)
8. Electronic billboards



M. S. Ramaiah Institute of Technology

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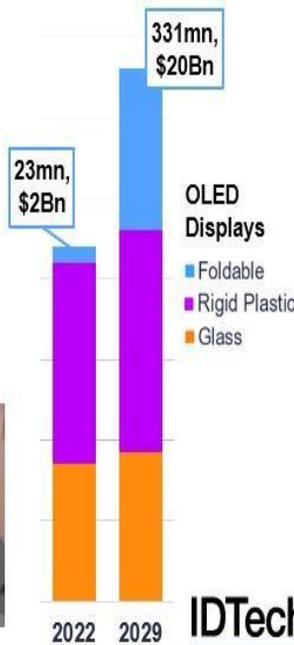
Foldable OLED Displays



Source: Royole (and top)



Source: Xiaomi



Flexible, Printed Sensors



\$4.3 Bn in 2029

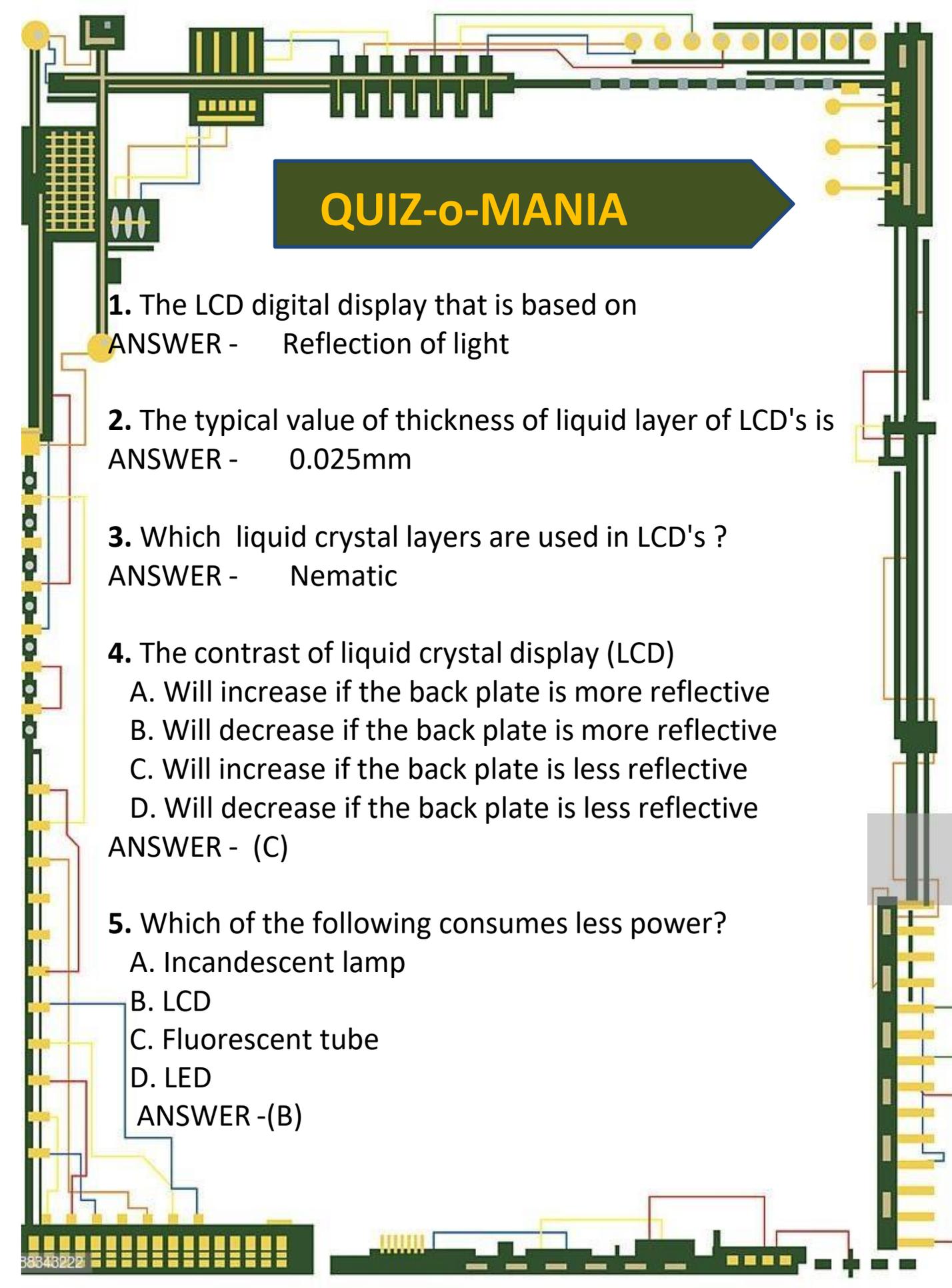
Source: ISORG

Flexible Batteries



\$190 mn in 2029

IDTechEx



QUIZ-o-MANIA

1. The LCD digital display that is based on

ANSWER - Reflection of light

2. The typical value of thickness of liquid layer of LCD's is

ANSWER - 0.025mm

3. Which liquid crystal layers are used in LCD's ?

ANSWER - Nematic

4. The contrast of liquid crystal display (LCD)

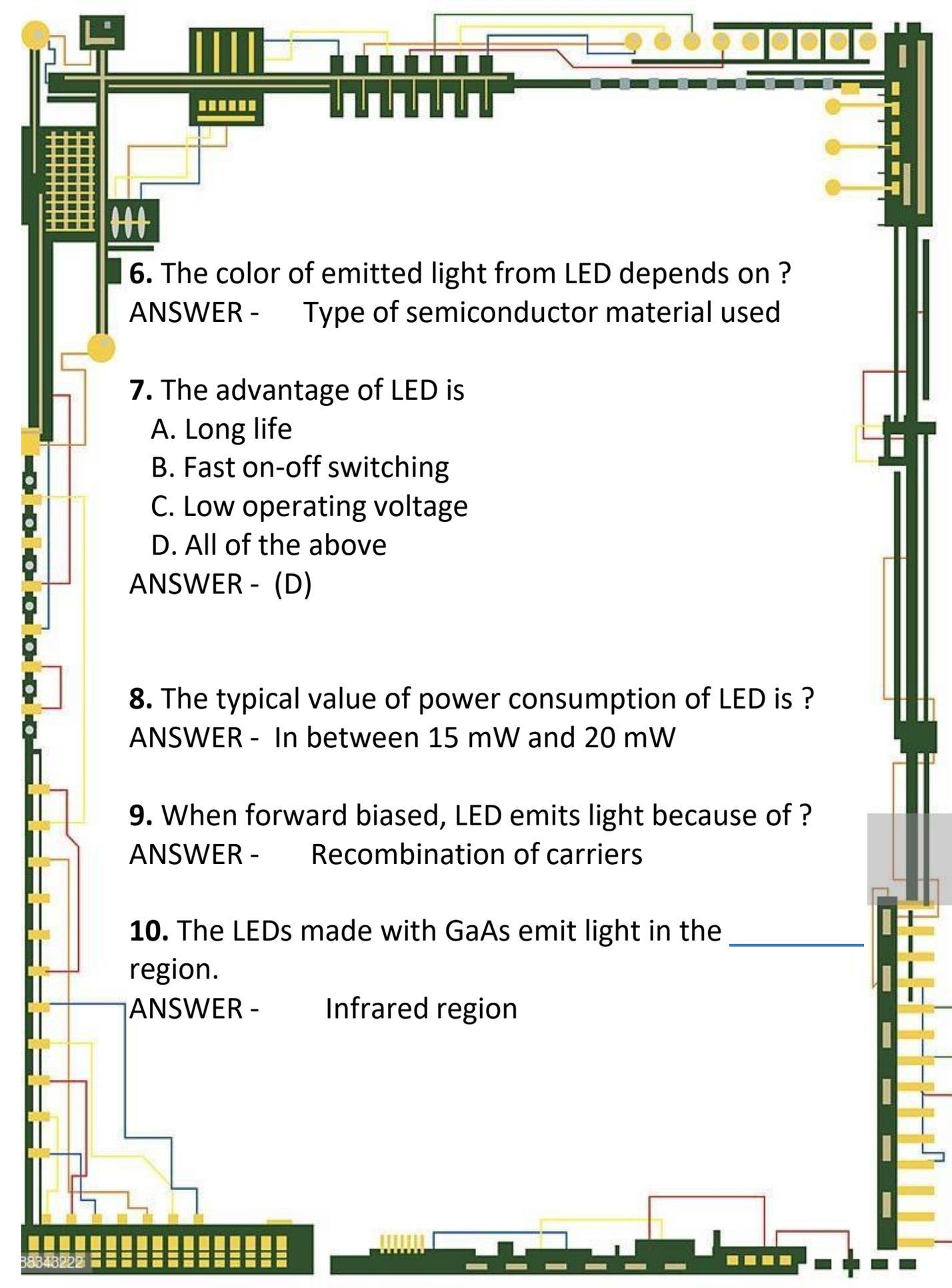
- A. Will increase if the back plate is more reflective
- B. Will decrease if the back plate is more reflective
- C. Will increase if the back plate is less reflective
- D. Will decrease if the back plate is less reflective

ANSWER - (C)

5. Which of the following consumes less power?

- A. Incandescent lamp
- B. LCD
- C. Fluorescent tube
- D. LED

ANSWER -(B)



6. The color of emitted light from LED depends on ?

ANSWER - Type of semiconductor material used

7. The advantage of LED is

- A. Long life
- B. Fast on-off switching
- C. Low operating voltage
- D. All of the above

ANSWER - (D)

8. The typical value of power consumption of LED is ?

ANSWER - In between 15 mW and 20 mW

9. When forward biased, LED emits light because of ?

ANSWER - Recombination of carriers

10. The LEDs made with GaAs emit light in the _____ region.

ANSWER - Infrared region