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Q74

Organic Light Emitting Diodes (OLEDs) are used to create digital display in many devices. What are the advantages of OLED displays over Liquid Crystal displays? 1. OLED displays can be fabricated on flexible plastic substrates. 2. Roll-up displays embedded in clothing can be made using OLEDs. 3. Transparent displays are possible using OLEDs. Select the correct answer using the code given below: (a) 1 and 3 only (b) 2 only (c) 1, 2 and 3 (d) None of the above statements is correct Official key: C.

UPSC Civil Services Prelims 2017 · General Studies · 2 marks · Science and Technology

Science, technology, space, defence, IT - Prelims GS Paper I.

Explanation

(a)

Option (a) is 1 and 3 only. **OLED** on flexible plastic and **transparent OLED** are real advantages, but roll-up and wearable displays are also a documented **OLED** possibility. Dropping statement 2 is incomplete. This option is not the key.

(b)

Option (b) is 2 only. It ignores fabrication on plastic and transparency, which are also true. This option is therefore wrong.

(c) Official key

OLED pixels emit their own light, so they can be built on flexible plastics, rolled or embedded in textiles, and made transparent. All three stem statements are advantages over rigid, backlight-dependent LCDs. Hence 1, 2 and 3 is the official key.

(d)

Option (d) says none is correct. That contradicts well-known **OLED** device physics. This option is not the key.

Summary

Official key is (c) 1, 2 and 3. Unlike LCD, **OLED** needs no separate backlight and can be deposited on flexible or transparent substrates. That enables roll-up and clothing-embedded displays as well as see-through panels. All three listed advantages hold. None of the statements is false.

Related possible facts

These can be asked in a future Prelims paper.

OLED

Organic Light Emitting Diode; each pixel is self-emissive

LCD limitation

Needs backlight and usually glass; poorer flexibility

AMOLED

Active-matrix OLED used in phones and TVs

Transparent OLED

Used in prototype windows and display cabinets

Encapsulation

OLEDs need barrier films against moisture and oxygen

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