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Q5

With reference to 'LiFi', recently in the news, which of the following statements is/are correct? 1. It uses light as the medium for high-speed data transmission. 2. It is a wireless technology and is several times faster than 'WiFi'. Select the correct answer using the code given below (a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2 Official key: C.

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Explanation**(a)**

Statement 1 only. LiFi does use visible or other light as the carrier, but the second claim-that it is wireless and can be many times faster than WiFi-is also treated as correct in this item. 1 alone is not the key.

(b)

Statement 2 only. Speed and wireless character are right, yet the defining **medium** is light. Dropping 1 is not the key.

(c) Official key

Both 1 and 2. Light Fidelity modulates LED or laser light for data. It is a wireless optical link and laboratory and vendor claims put peak rates far above typical WiFi. That stored letter is the official key.

(d)

Neither. Both listed statements match the LiFi idea that was in the news, so 'neither' is not the key.

Summary

- **Official key is (c) both 1 and 2. LiFi is optical wireless communication:** photons instead of radio. It can be very fast in line-of-sight LED/laser setups and does not replace radio where walls block light. Honour the stored letter (c).

Related possible facts

These can be asked in a future Prelims paper.

Coined by

Harald Haas (TED, 2011)

Medium

Visible light, infrared or ultraviolet

Typical hardware

LED lamps as transmitters; photodiodes as receivers

Contrast with WiFi

Radio spectrum versus optical spectrum

Limitation

Needs line of sight; light blocked by opaque walls

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