

$$\frac{\sin i_p}{\sin (90^\circ)}$$

$$\text{or, } \frac{\sin i_p}{\cos i_p} = \mu$$

$$\therefore \mu = \tan i_p \quad \text{--- (4) ---}$$

proved.

This eqⁿ is called Brewster's law of polarisation of light.

Dated:
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DAY - WEDNESDAY

Qⁿ. What are polaroids? Mention some of their practical uses.

Ans → A. Polaroids :-

Tourmaline crystal is a natural polarising material and is semi-precious gem and also not available in large size.

Polaroids are artificially made large sheets or plates and capable of producing a strong beam of polaroids light.

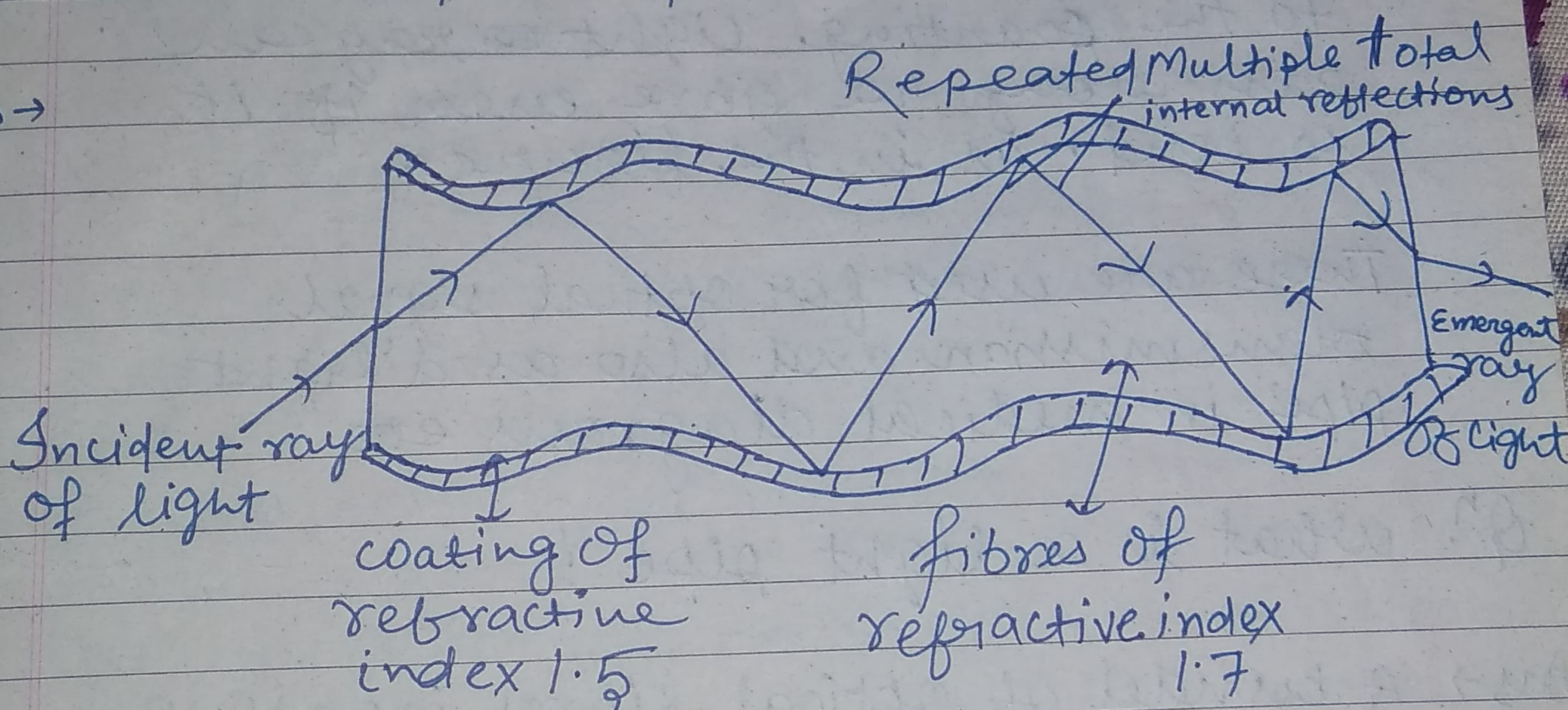
(B) Uses :-

• Following are the practical uses of polaroids:-

- (i) In sunglasses.
- (ii) Wind shield of automobiles.
- (iii) In window panes
- & (iv) Three dimensional motion pictures etc.

Qⁿ. What are optical fibres? Give their uses.

Ans →



Figure

Optical fibres consist of thousands of long fine quality glass or quartz fibres of high refractive index of about 1.7. They are coated with a material of a material of -

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refractive index 1.5. The thickness of each fibre (strength) is about 10^{-4} cm.

when light ^{ray} is incident on one end of a fibre, it goes inside ~~core~~ and suffers multiple total internal reflections to finally come out. The angle of incidence here is always larger than the critical angle of the fibre material with respect to the coating. Light ~~at~~ ray can pass along the fibre even if it is bend. as in the figure.

These are used for optical signal transmission and also as a 'light pipe' in medical diagnosis etc.

Qⁿ. what is a light pipe?

Ans → A bundle of optical fibres is called a light pipe.

It is used to transmit the image of an object to a large distance.