

**Question 11** (15 marks)

Use the stimulus material to answer Question 11.

The Freeplay wind-up radio is the invention of Trevor Bayliss. Bayliss was listening to a radio program at his home in England about the problems of health education in Africa, where the spread of AIDS has caused an increasing and urgent crisis. The program indicated that radio was seen as the best medium to convey healthcare information to help counteract the growing epidemic. The healthcare information was intended for people who lived in poor rural communities in remote locations.

## ***Freeplay Radios***

[www.ogormans.co.uk](http://www.ogormans.co.uk)

**Freeplay wind-up radio for mail order anywhere. Trevor Bayliss  
invented the freeplay wind-up radio in 1994**



**Wind-up Radio  
Model FPR2**

- Freeplay self-powered wind-up radio with solar panel
- Made of rugged durable ABS plastic
- Economical – no batteries
- FM 88–108MHz AM 520–1700kHz
- Plays for 60 minutes on a full wind
- **Our price £58.00 (\$A 150)**

Parcel Force 24 hours £7.50

*Airmail Order On Line*

The Freeplay FPR2 wind-up radio uses a unique texture carbon steel spring that drives a DC generator through a power transmission gearbox. 60 winds will provide full energy storage allowing playing times of up to 60 minutes. A clear crisp sound is produced from a 4" silverdome speaker with an audio output of 5 watts.

Advertisement downloaded from the Internet

'The radio intended for the deprived has become a toy for the affluent.'

'The biggest irony is the very guys it was designed for can't afford it.'

Extracts from the *Toronto Star* newspaper about the Freeplay radio

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## Question 11 (continued)

- (a) Outline reasons why this radio may be appropriate for poor rural communities in remote locations.

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Rural communities may not have access to electricity. It is also made from "rugged durable ABS plastic" to withstand the rural lifestyle.

- (b) Discuss TWO of the following design factors as they relate to the Freeplay radio:

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- Cost
- Ergonomics
- Function

Cost: It seems that the cost was not considered in the making of this product as its intended consumers ~~are~~ were ~~not~~ going to be poor rural communities in remote locations. These people however can not afford this product.

~~Function~~ Ergonomics: Ergonomic factors were taken into account of the radio such things as a handle for easy carry, large volume and tuning dials were also applied to cater for the users needs.

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## Question 11 (continued)

- (c) Critically analyse the ethical and environmental issues relating to the Freeplay radio. 5

The initial idea of the radio was ethically sound as it was intended to help counteract the growing AIDS epidemic in Africa, although the cost has not been considered for the African people ~~at~~ which is wrong because there is an invention that ~~is~~ will benefit them and it is unable to be utilised.

The energy source for the radio is ethically sound as it ~~also~~ relies upon self powered wind up energy ~~and~~ solar energy. Its ~~own~~ energy source does not contaminate the environment as no disposable batteries are needed. The plastics that it is made of though are not recyclable and it does not say if they will break down in the environment naturally.

- (d) (i) Describe forms of protection that designers such as Trevor Bayliss have available to them to prevent competitors copying their designs. 2

The designers are able to ~~protect~~ protect their intellectual property by getting their design patented - This prohibits anyone else copying the design.

- (ii) Explain, using an example, ONE factor that has impacted on the success of an innovative product you have studied. 2

The reduced cost of mobile phones, ~~and~~ and their call cost has given people incentive to buy the phones which has contributed to its popularity & the success of the product/innovation.

End of Question 11