

2003 HIGHER SCHOOL CERTIFICATE EXAMINATION  
Engineering Studies

Section II (continued)

Marks

Question 16 — Telecommunication (15 marks)

- (a) (i) The telecommunications industry uses copper and fibre optics for transmission of data. State a different application for each of these materials, and explain, in terms of their properties, why they are used for this application. 4

You phone cord is made of copper because it is more durable for constant movement and stretching when some one is talking on the phone.  
Fibre optics are use to transmits data ~~transmits~~ to and from ~~transmitters~~ transmitters and receivers for telephone company's satellite dishes.

- (ii) Cold drawing is used to form copper into electrical wire. Describe TWO problems associated with the use of the process. Describe a subsequent process that will reduce these problems. 3

It uses much more power to work with cold metals and the wire will work harden faster.  
To draw the wire when hot is much easier.

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## Question 16 (continued)

- (b) Identify TWO technological changes in the telecommunications industry. Discuss the effects that these changes have had on society. 4

Digital TV has change an analoge TV signal into Digital. This has allowed for greater reseption, ~~an~~ allowing people in <sup>very</sup> regional areas to be able to get Free to air TV news.

Broad ban internet has allowed people to have much faster internet access that was imposible before. This allows people to save ~~the~~ ~~time~~ time waiting for a page to download.

- (c) (i) Describe the transmission of data from a mobile phone to another mobile phone. 2

The signal gets sent from your phone to a cell tower which sends a signal to a another tower or a satelight dish, to a satelite, then satelited dish again, then to the Cell tower, then the Mobile you want.

- (ii) Explain the effect that mobile phone communications may have on other electronic systems. State TWO situations where this effect could endanger lives. 2

They may interfere with the rythem of a pace maker or they interrupt the signal that goze to your speakers make them to the wrong sound.

End of Question 16