8 A pulsar is a type of star.

We receive radiation from a pulsar in regular short bursts called pulses.

(a) Some pulsars emit radio waves. Other pulsars emit x-rays.

(i) State a property of waves that is the same for radio waves and x-rays.

(1)

.....

.....

(ii) State two properties of waves that are different for radio waves and x-rays.

(2)

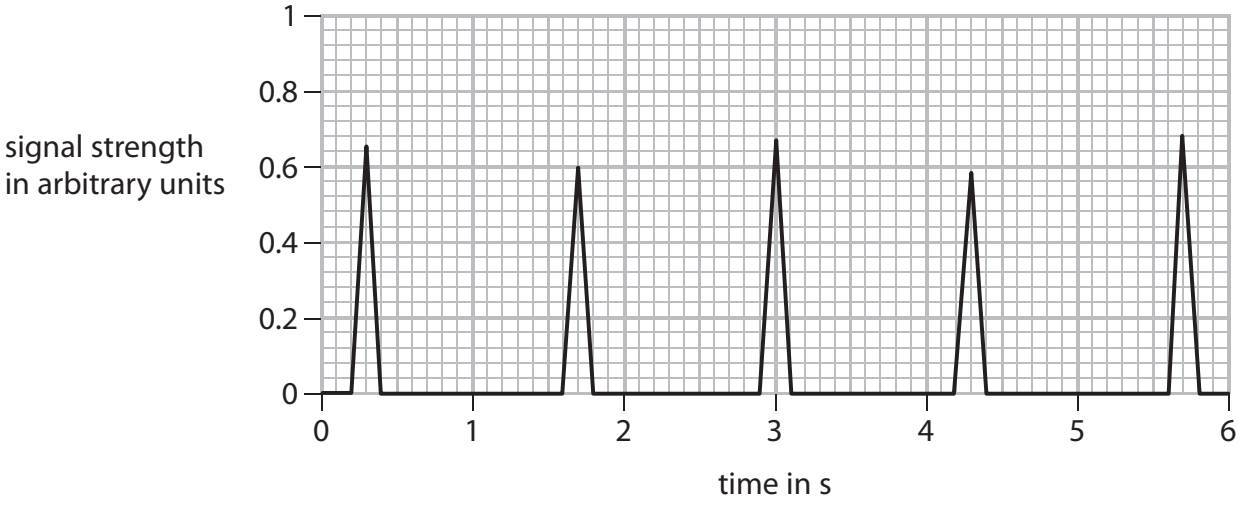
1 .....

.....

2 .....

.....

(b) The graph shows five pulses of the signal from a pulsar.



(i) Explain how the graph shows that the signal is not digital.

(2)

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.....

.....

.....

(ii) Use the graph to estimate the average time between each pulse.

(2)

time = ... s

(iii) Calculate the frequency of the pulses in the signal.

Give the unit.

(2)

frequency = ... unit .....

(Total for Question 8 = 9 marks)

TOTAL FOR PAPER = 60 MARKS

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