



Unit 13 • Information and Communication Technology

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 33

1 Key words

[4]

Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

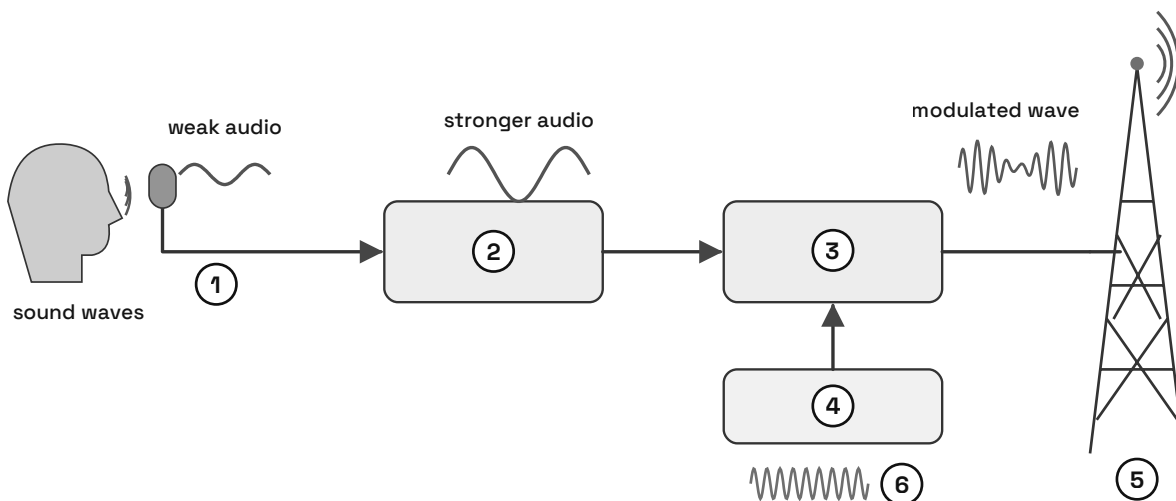
antivirus carrier wave digital footprint downlink firewall geostationary ICT
modulation satellite uplink

The use of electronic devices to store, process and communicate information is called _____. A body that revolves around a planet in a fixed path is a _____. The signal sent from a ground station up to a satellite is the _____ signal. A satellite 35,786 km above the equator that seems to stand still in the sky is _____. A radio station sends its sound on a steady high-frequency wave called the _____; changing this wave in step with the sound is called _____. A program or device that stands between a computer and the internet, blocking unsafe connections, is a _____. The record of data that our use of the internet leaves behind is our _____.

2 Label the diagram

[3]

The diagram shows the inside of a radio station. Name the parts and the waves numbered 1 to 6. Each carries 0.5 mark.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____



[5]

Choose the correct option for each of the following questions.

- i. In which orbit does a satellite go round above the equator and stay still relative to the Earth? [1]
 - a. low Earth orbit
 - b. geostationary orbit
 - c. medium Earth orbit
 - d. any geosynchronous orbit
- ii. Why do satellite TV dishes on houses never need to turn? [1]
 - a. the satellite is fixed to a tall tower
 - b. the satellite goes round once in exactly the time the Earth turns once, so it stays above the same place
 - c. the signal bends to find the dish
 - d. the satellite doesn't move at all
- iii. Why does FM radio sound clearer than AM radio? [1]
 - a. FM stations use bigger antennas
 - b. FM waves are reflected by the ionosphere
 - c. noise mostly changes a wave's height, and an FM receiver ignores the height
 - d. FM uses lower frequencies
- iv. Which search would find PowerPoint slides on plant tissue? [1]
 - a. filetype: plant tissue.pptx
 - b. plant tissue filetype.pptx
 - c. plant tissue filetype:pptx
 - d. filetype plant tissue:pptx
- v. A radio station in Kathmandu wants its program heard in villages far away beyond the hills, at night, with a cheap transmitter. Which is better? [1]
 - a. AM on medium wave
 - b. FM
 - c. both reach the same distance
 - d. neither can go beyond the hills

[3]

Write very short answers to the following questions.

- a. What is the name of Nepal's first satellite? [1]
-
-
- b. Which two words give the modem its name? [1]
-
-
- c. What is phishing? [1]



5 Short answers

[8]

Write short answers to the following questions.

- a. Write any two differences between a firewall and an antivirus.

[2]

- b. Write any two differences between amplitude modulation and frequency modulation.

[2]

- c. Give a reason: many countries have put communication satellites in geostationary orbit.

[2]

- d. Give a reason: to broadcast over long distances, radio waves are sent to communication satellites.

[2]

6 Long answer

[4]

Write a long answer to the following question.

Explain the working principle of telecommunication technology, with an example.



[4]

a. A GPS signal took 0.07 s to reach a phone from the satellite. How far away is the satellite?

[illegible]

Answer:

- [2]

[illegible]

Answer:

[2]

Imagine a cannon on top of a very tall mountain, firing a ball sideways. A slow ball lands nearby; a faster one lands farther away. What happens if the ball is fast enough? How is a satellite like this ball?

(not marked)

Technology	Transmitter	Channel	Receiver
TV broadcast			
radio broadcast			
landline telephone			
mobile phone			
Wi-Fi			
GPS			