



Unit 13 • Information and Communication Technology

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 32

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.

ADC analog baseband bit broadband byte channel DAC digital netizen

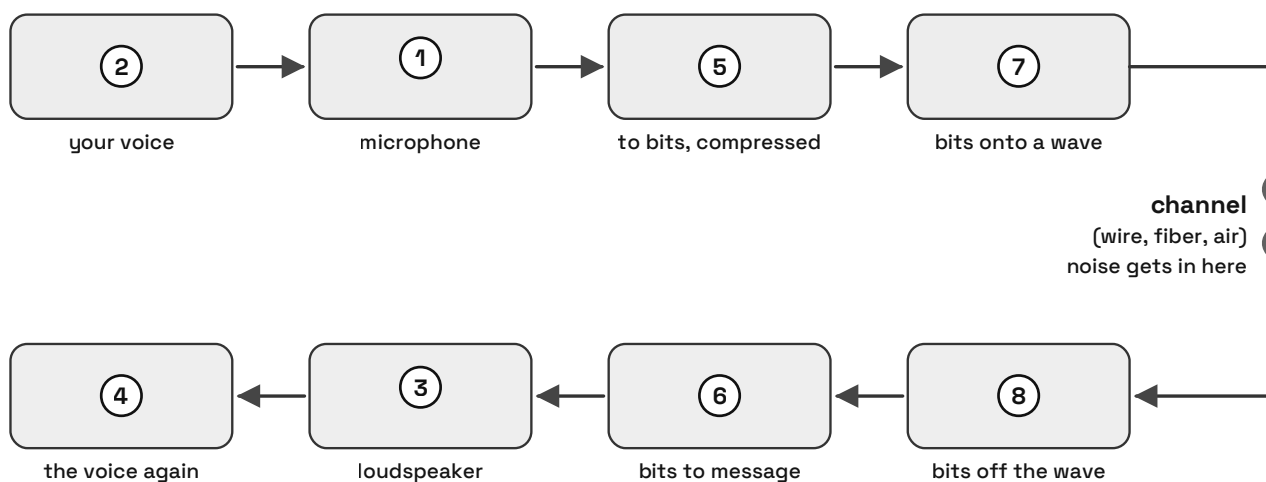
Signals that change continuously, such as the voltage from a microphone, are _____ signals; signals that have only two values, 0 and 1, are _____ signals. Each 0 or 1 is called a _____, and a group of 8 of them is a _____. The device that turns an analog signal into binary numbers is the _____. The path along which a signal travels from the transmitter to the receiver, such as a wire, an optical fiber or the air, is the _____. Sending digital signals as they are, one at a time, over a short distance is _____ transmission. A person who actively uses the internet is called a _____.

2 Label the diagram

[4]

The diagram shows the parts of a digital communication system. Name the parts numbered 1 to 8. Each carries 0.5 mark.

SENDING (transmitter)



RECEIVING (receiver)

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____



[5]

Choose the correct option for each of the following questions.

- i. Which of these is 1 byte of memory? [1]
- a. 0000 b. 00000000
c. 100000 d. 000001
- ii. Which of the following is an audio file format? [1]
- a. AVI b. MP4
c. MP3 d. 3GP
- iii. Which of the following uses an analog signal? [1]
- a. infrared ray thermometer b. computer
c. smartwatch d. medium wave radio
- iv. In which kind of transmission are many signals sent through one cable at the same time, each on its own frequency? [1]
- a. baseband b. broadband
c. analog d. none: a cable can carry only one signal
- v. Someone regularly posts news of new scientific discoveries on social networks. What does this show? [1]
- a. unsystematic use of social networks b. digital wellbeing skills
c. awareness of digital wellbeing d. digital reputation management

[3]

Write very short answers to the following questions.

- a. What is a transducer? [1]
-
-
- b. Which device turns a digital signal back into an analog signal? [1]
-
-
- c. Define digital citizenship. [1]

[6]

Write short answers to the following questions.

- a. Write any two differences between analog signals and digital signals. [2]



- b. Explain how today's high-speed internet is a broadband transmission. [2]**

- c. Write two positive and two negative effects of digital technology in daily life. [2]

6 Long answer [4]

Write a long answer to the following question.

Read the passage and answer the questions.

Rojan, a Grade 10 student, uses a different nickname on each social network. His public profile shows his phone number and home address. Last week he shared a message about a flood without checking whether it was true. He uses the password rojan123 for all his accounts.

- Write two of Rojan's habits that can harm his online reputation, and say why. (2)
- Suggest two things Rojan should do to protect his accounts and manage his digital reputation. (2)

7 Numerical problems [4]

Solve the following problems. Show your working.

- a. i. What number is the binary 1101? (1) [2]
ii. Write the number 20 in binary. (1)

[illegible]

Answer:



- b. A memory card has 32 GB of free space. A song takes about 4 MB. About how many songs can it store? (Use 1 GB = 1024 MB.) [2]

Answer: _____

8 Think

Think, then answer.

Walk through any town in Nepal and look at the satellite dishes on the roofs: they all point in nearly the same direction, roughly south and up into the sky, and they never move. Why?

9 Activity: Screen time at home (Activity 13.3)

(not marked)

Ask each member of your household how many hours a day they spend on a phone, a TV and a computer, or look at the screen-time figures in their phone's settings. Fill in the table.

Member of the household	Phone (hours)	TV (hours)	Computer (hours)	Total (hours a day)
myself				

Who spends the most time on screens? Write one long-term effect it could have, and one way to reduce it.

