Grade 8 Computing

Unit 10 · Generative AI

WORKSHEET

Full marks 31

Name _____ Class _____ Roll no. ____ Date _____ Marks _____ / 31

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.

back-translation	deepfake	diffusion model	generative AI	hallucination	image generator
large language model	lateral reading	prompt	tokens		

AI that makes new things, such as text, pictures, sound or code, is _____. What you type to tell it what you want is a _____. A model trained on an enormous amount of text to predict what comes next is a _____. Before training, its text is split into small pieces called _____, often a whole word, sometimes part of one. Something an AI writes that sounds true but is made up is a _____. A _____ makes a picture by starting from noise and removing it step by step. A video or recording made with AI to show a real person saying something they never said is a _____. Translating a translation back into the first language, to check it, is called _____.

2 Multiple choice [5]

Choose the correct option for each of the following questions.

i. What is a **prompt**? [1]

a. the answer a chatbot gives
b. what you type to tell a generative AI what you want
c. a mistake in an AI's answer
d. the text a model was trained on

ii. Your next-word model wrote "Rara is the birthplace of the Buddha." Why? [1]

a. One of its training sentences said so.
b. Each pair of words was in its text, and it looks only at the last word, so it can't tell the sentence went wrong.
c. Rolling the dice always makes mistakes.
d. The model was trained on false sentences.

iii. A chatbot gives you the name of a book, its author and the year it was published, to use in your project. What should you do? [1]

a. Use it: chatbots are trained on books, so it must be right.
b. Ask the chatbot whether it is sure.
c. Search for the book yourself, and use it only if you find it and it really says what you need.
d. Use it, but don't say where you found it.

iv. Which job is best done with **rules people write**, not AI? **[1]**

a. recognizing a friend's voice

b. working out a student's grade from a mark, by the school's grading rules

c. writing a poem about the monsoon

d. turning a photo into a painting

v. Your aunt gets a WhatsApp call. It sounds exactly like her son, who works in Qatar. He says he has been arrested and needs Rs 2 lakh sent at once, and not to tell anyone. What should she do first? **[1]**

a. Send the money quickly: it is his voice.

b. Ask the caller to prove it by saying his name.

c. Hang up, and call her son, or his friends or employer, on numbers she already has.

d. Share the recording in the family group to ask what they think.

3 A next-word model in Python **[3]**

This program looks through a model's training text for the word "is", and counts what came after it. Write exactly what it prints, in the box under it, then answer.

```
words = ["the", "bus", "is", "late", "the", "road", "is", "full",
         "the", "bus", "is", "full"]
after_is = 0
full = 0
for i in range(len(words) - 1):
    if words[i] == "is":
        after_is = after_is + 1
        if words[i + 1] == "full":
            full = full + 1
print("After is:", after_is)
print("full came", full, "times")
```

```
OUTPUT
```

After "is", what is the chance that the model picks "full"?

4 Write a program **[3]**

Write the program on the lines. Any program that does the job gets the marks.

These are a week's lowest night temperatures in Jumla, in °C:
`temps = [-3, -7, -2, -5, -9, -4, -6]`. An AI's program started with `highest = 0` and printed `Highest: 0`. Write a program that prints the highest and the lowest temperature correctly.

5 Check the AI's program [7]

Read each program an AI wrote, then answer.

a. An AI wrote this program to print the total price of 3 notebooks at Rs 45 each, with Rs 10 off the whole bill, and said that it prints `Total: 125`. [3]

```
price = 45
count = 3
total = price * count - 10 * count
print("Total:", total)
```

i. Work out the right total yourself.
ii. What does the program really print?
iii. Fix the bug.

b. The school's rule: **A+** for 90 and above, **A** for 80 to 89, **below A** for under 80. Complete the table for the AI's program, then fix it. [4]

```
mark = int(input("Mark: "))
if mark > 90:
    print("A+")
elif mark > 80:
    print("A")
else:
    print("below A")
```

Mark	Should print	The program prints
95		
90		
85		
80		
79		

The fix:

6 Short answers [7]

Write short answers to the following questions.

a. Rewrite this prompt so that a chatbot could give a useful answer, and label its parts: task, context, format and limits. "Tell me about earthquakes." [3]

b. For each problem, say whether it is best solved by fixed steps, rules people write, learning from data, or a mix, and give a reason. **[4]**

i. Finding the cheapest of 20 phone data packs from a list of prices.
ii. Deciding which students get a scholarship using the school's published rules.
iii. Suggesting a disease from a photo of a rice leaf.
iv. A help line for a mobile company that understands questions in any words and then shows the customer's data balance.

7 Think **[2]**

Think, then answer.

A chatbot can add up a bill, if you ask it. Give two reasons a shop's billing program should still be an ordinary program.

8 Activity: There and back again (not marked)

Write three Nepali sentences: one polite, to a teacher (तपाईं or हजुर); one with a saying (उखान); and one about a girl, such as "मेरी बहिनी हिजो विद्यालय गई।" With permission, translate each into English with a translation app, then translate the English back into Nepali in the same app.

My Nepali sentence	The app's English	Back in Nepali	What changed?