Practical 17.

Python program to summarise the given text.

```
import nltk
from nltk.tokenize import sent_tokenize, word_tokenize
from nltk.corpus import stopwords
from nltk.probability import FreqDist

# Download necessary NLTK data
nltk.download('punkt')
nltk.download('stopwords')

def summarize_text(text, sentence_count=2):
    # Tokenize sentences and words
    sentences = sent_tokenize(text)
    words = word_tokenize(text.lower())

    # Remove stopwords and punctuation
    stop_words = set(stopwords.words('english'))
    words = [word for word in words if word.isalnum() and word not in
stop_words]

    # Calculate word frequencies
    word_freq = FreqDist(words)

    # Score sentences based on word frequencies
    sentence_scores = {}
    for sentence in sentences:
```

```
        for word in word_tokenize(sentence.lower()):
            if word in word_freq:
                sentence_scores[sentence] = sentence_scores.get(sentence, 0) +
word_freq[word]


    # Sort sentences by score and return the top ones
    top_sentences = sorted(sentence_scores, key=sentence_scores.get,
reverse=True)[:sentence_count]
    return " ".join(top_sentences)


# Example text
text = """
Artificial Intelligence (AI) is the simulation of human intelligence processes by
machines,
especially computer systems. These processes include learning, reasoning, and
self-correction.
AI is being used across industries for applications like speech recognition,
decision-making,
and language translation. With advancements in technology, AI continues to
revolutionize the world
and is expected to play a significant role in shaping the future.
"""


# Generate summary
summary = summarize_text(text, sentence_count=2)
print("Summary:\n", summary)
```

Output

Summary:

Artificial Intelligence (AI) is the simulation of human intelligence processes by machines,

especially computer systems. With advancements in technology, AI continues to revolutionize the world

and is expected to play a significant role in shaping the future.