

**Read this document  
completely before doing  
anything!**

# Part A Questions

1. Discuss, and make a comparison of, pollution by conventional fossil-fuel power plants and nuclear-fission power plants. Consider thermal pollution, chemical pollution, and radioactive pollution.
2. A sample has an activity of 0.0061 Bq per gram of carbon.
  - a. Find the age of the sample, assuming that the activity per gram of carbon in a living organism has been constant at a value of 0.23 Bq.
  - b. Evidence suggests that the value of 0.23 Bq might have been as much as 40% larger. Repeat part (a), taking into account this 40% increase.
3.
  - a. A sample is being dated by the radiocarbon technique. If the sample were uncontaminated, its activity would be 0.011 Bq per gram of carbon. Find the true age (in years) of the sample.
  - b. Suppose the sample is contaminated, so that only 98.0% of its carbon is ancient carbon. The remaining 2.0% is fresh carbon, in the sense that the it contains has not had any time to decay. Assuming that the lab technician is unaware of the contamination, what apparent age (in years) would be determined for the sample?

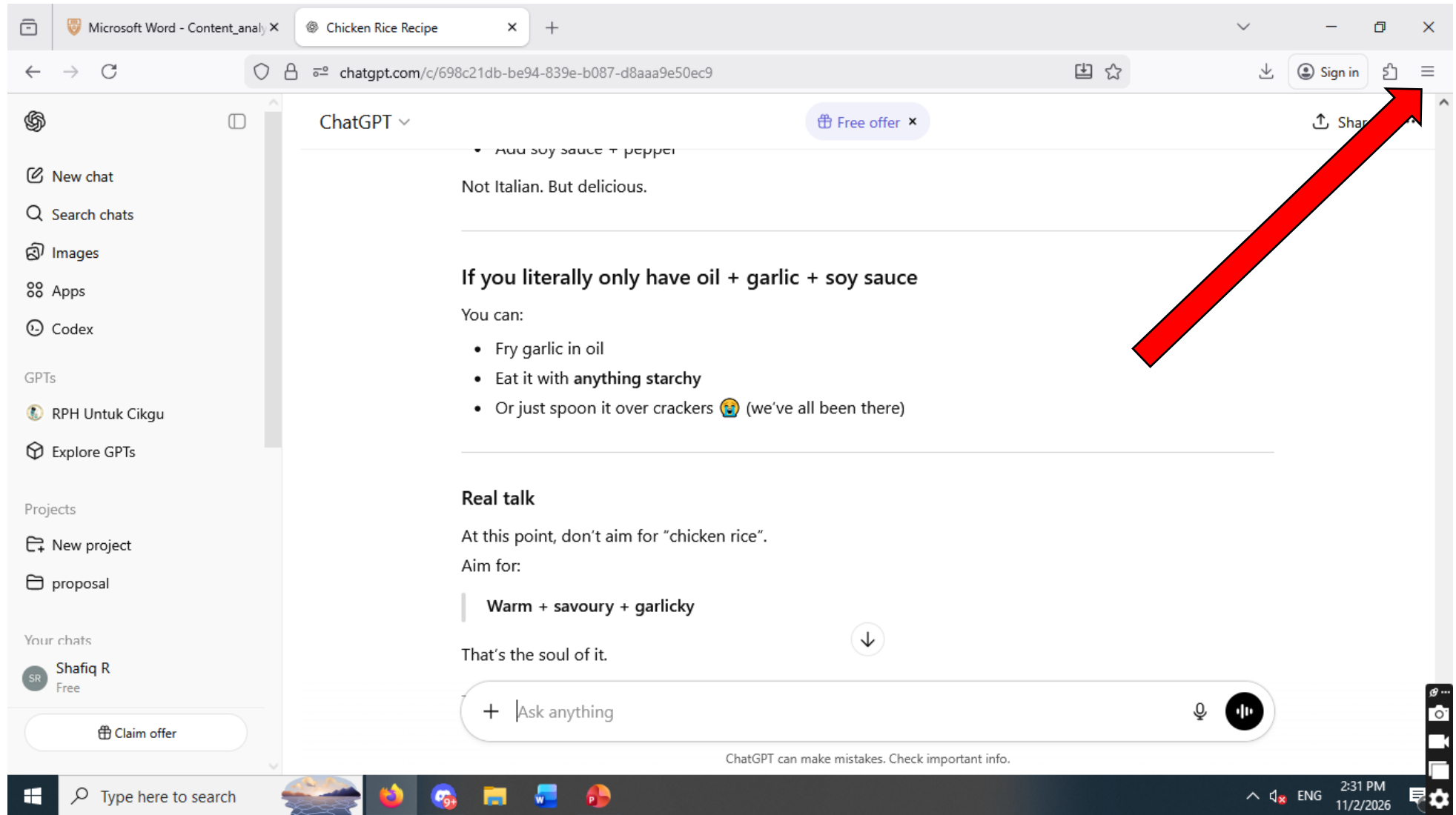
## Part B Questions

1. How did using ChatGPT change (or not change) your understanding of the physics concept involved? *(Focus on what you understood better, differently, or still found confusing after using ChatGPT.)*
2. When using ChatGPT, were you mainly checking answers, following steps, or actively explaining and questioning ideas? *(Describe how you interacted with ChatGPT, not whether you liked it.)*
3. At what point did you realize ChatGPT's explanation was helpful or insufficient, and what did you do next? *(Mention a specific moment when you judged the explanation and how you responded, e.g., asked follow-up questions, stopped using it.)*
4. Did using ChatGPT help you solve similar physics problems on your own afterward? Why or why not? *(Think about whether you could apply the idea independently, not just repeat the same steps.)*
5. How did you decide whether ChatGPT's solution or explanation was correct? *(Explain how you checked or evaluated the answer, e.g., equations, logic, units, prior knowledge.)*

**For Part B, make sure  
to type it out in  
Word and then save  
as pdf, no  
handwriting please.**

**How to export  
your chat?**

# For Part A, Step 1



The screenshot shows the ChatGPT web interface in a browser window. The browser's address bar displays the URL: `chatgpt.com/c/698c21db-be94-839e-b087-d8aaa9e50ec9`. The page title is "Chicken Rice Recipe". The ChatGPT interface shows a conversation with the following text:

ChatGPT

• Add soy sauce + pepper

Not Italian. But delicious.

**If you literally only have oil + garlic + soy sauce**

You can:

- Fry garlic in oil
- Eat it with **anything** starchy
- Or just spoon it over crackers 🥲 (we've all been there)

**Real talk**

At this point, don't aim for "chicken rice".

Aim for:

**Warm + savoury + garlicky**

That's the soul of it.

At the bottom of the chat area, there is a text input field with the placeholder text "Ask anything" and a microphone icon. Below the input field, a small disclaimer reads: "ChatGPT can make mistakes. Check important info."

A red arrow points to the "Sign in" button in the top right corner of the browser window.

# Step 2

The screenshot shows a web browser window with the ChatGPT interface. The browser's address bar displays the URL `chatgpt.com/c/698c21db-be94-839e-b087-d8aaa9e50ec9`. The ChatGPT sidebar on the left includes options like 'New chat', 'Search chats', 'Images', 'Apps', 'Codex', and 'GPTs'. The main chat area shows a conversation with the title 'Chicken Rice Recipe'. The chat history includes a message about adding soy sauce and pepper, followed by a response stating 'Not Italian. But delicious.' The current prompt is 'If you literally only have oil + garlic + soy sauce' and the response lists three options: 'Fry garlic in oil', 'Eat it with anything starchy', and 'Or just spoon it over crackers 🥹 (we've all been there)'. Below this, the prompt 'Real talk' is shown, followed by the response 'At this point, don't aim for "chicken rice". Aim for: Warm + savoury + garlicky'. The chat input field at the bottom contains the text '+ Ask anything'. A red arrow points from the chat area to the 'Print...' option in the browser's menu, which is open on the right side of the screen. The menu also shows options like 'Sync and save data', 'New tab', 'New window', 'New private window', 'Bookmarks', 'History', 'Downloads', 'Passwords', 'Extensions and themes', 'Save page as...', 'Find in page...', 'Translate page...', 'Zoom', 'Settings', 'More tools', 'Report broken site', 'Help', and 'Exit'. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons. The system tray on the right indicates the time is 2:31 PM on 11/2/2026.

Microsoft Word - Content\_analy x Chicken Rice Recipe x

chatgpt.com/c/698c21db-be94-839e-b087-d8aaa9e50ec9

ChatGPT Free offer x

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Real talk

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+ Ask anything

ChatGPT can make mistakes. Check important info.

Sync and save data Sign In

New tab Ctrl+T

New window Ctrl+N

New private window Ctrl+Shift+P

Bookmarks >

History >

Downloads Ctrl+J

Passwords

Extensions and themes Ctrl+Shift+A

Print... Ctrl+P

Save page as... Ctrl+S

Find in page... Ctrl+F

Translate page...

Zoom - 100% + ↗

Settings

More tools >

Report broken site >

Help >

Exit Ctrl+Shift+Q

Type here to search

2:31 PM 11/2/2026

# Step 3

The screenshot shows a web browser window with a Microsoft Word tab and a ChatGPT page. The ChatGPT page displays a recipe for "Hainanese-style Chicken Rice (Home Version)". The recipe includes ingredients and instructions. A print dialog is open on the right side of the screen, showing settings for printing 11 sheets of paper. The dialog has a blue border and a white background. The settings are as follows:

- Destination: Microsoft Print to PDF
- Orientation: Portrait
- Pages: All
- Color mode: Color
- Fewer settings: A4
- Scale: Scale 100
- Pages per sheet: 1

Red arrows point to the "Microsoft Print to PDF" option, the "Portrait" orientation, the "All" pages selection, and the "Print" button.

ChatGPT can make mistakes. Check important info.

**Name your file “yourname\_partA.pdf”**

**For Part B, make sure to type it out in Word and then save as pdf, no handwriting please.**