

# CS Exam Q3

## Instructions:

- You can't use internet during this exam
- You can only use provided extensions during this exam but with any themes
- You can't locally host AI Chatbots
- This exam has a total weighted marks of 143.25
- Weighted marks are multiplied off the total marks of the question.
- Unlike traditional exams, this exam can have marks with decimal points like 0.5 or 0.1
- Extra marks may be given

Q1. Write code for a Package class made for a package manager, Think of all the things a usual package manager would require. Write the implementation too.

*[ /2] Class [ /4] Features [ /4] Implementation , Total: 10 × 1 Weighted: 10*

...

Q2. Write a Packages class, with functions to handle packages, and download them from "src.packagemanager.net" using curl. You can't install curl. You can't read documentation of it.

*[ /3] Functions [ /7] Implementation [ /5] Usage of curl , Total: 15 × 1 Weighted: 15*

...

Q3. How would you write a program that has subcommands like "help", "pkgs", "install", etc, and receive an output?

*[ /6] Implementation , Total: 6 × 1.05 Weighted: 6.3*

...

Q4. Write a maze algorithm, as a function, you get "bool[256][256] tiles, Vector2 pos" as arguments. Vector2 has 2 ints, x and y.

*[ /8] Implementation [ /4] Optimization Total: 14 × 1.25 Weighted: 17.5*

Q5. Write 5 git subcommands.

*[ /5] Subcommands Total: 5× 0.5 Weighted: 2.5*

1. ...

2. ...

3. ...

4. ...

5. ...

Q6. Write the name of three shells.

*[ /3] Shell names Total: 3× 0.5 Weighted: 1.5*

1. ...

2. ...

3. ...

Q7. Write pseudocode for an analogue clock with 3 hands, seconds, minutes and hours.

*[ /8] Implementation Total: 8×1.25 Weighted: 10*

...

Q8. Make bash aliases for git subcommands from Q5.

*[ /2] Aliases [ /5] Optimization Total: 7× 0.9 Weighted: 6.3*

...

Q9. Make a program that writes the time to a file from the first argument. You don't have access to any documentation

*[ /5] Implementation Total: 5× 1.75 Weighted: 8.75*

...

Q10. What is a Vector?

*[ /5] Explanation Total: 5× 0.9 Weighted: 4.5*

...

Q11. You are given RGB.h and some documentation on it. Write a program to control RGB lights from the first 3 arguments given corresponding to R, G, B. You may reuse code from previous questions.

*[ /6] Implementation [ /6] Documentation Reading Total: 12× 1 Weighted: 12*

Q12. Try to write the short forms of these words.

*[ /5] Short Forms of words Total: 5× 0.9 Weighted: 4.5*

1. vector ...
2. array ...
3. subcommand ...
4. keyboard & mouse ...
5. audio ...

Q13. Write Code that involves Enums. Like the type of a device in a Device class

*[ /5] Usage of Enums [ /3] Code makes sense in a real world scenario Total: 8× 1 Weighted: 8*

...

Q14. What is a shell?

*[ /5] Explanation Total: 5× 0.9 Weighted: 4.5*

...

Q15. Write a function to transition a float, a from 0 to 1 and then 1 to 0 smoothly

*[ /6] Implementation Total: 6× 1.15 Weighted: 6.9*

...

Q16. Final Question: Write a logging library which has three functions, info(), warn(), err(), which prints a readable color coded log and writes it to a file “log.txt” in the same directory. Write Documentation in Markdown.

*[ /8] Implementation [ /4] Documentation [ /4] Output [ /3] Optimization/Quality [ /5]  
Writing to a file Total: 25× 1 Weighted: 25*

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