

Engineering Interview Question Prompts:

Goal: Below is a list of general and specific questions that you MIGHT be asked during an interview. Please note that the following questions are not identical to the interview. It all depends on the company and the type of position for which you are applying.

Subject Area: Majors in Colleges of Engineering (i.e. chemical, civil, mechanical, computer science, and engineering, etc.)

Questions:

General:

1. Tell me about the most challenging engineering project that you have been involved with during the past year.
2. Why did you select [INSERT MAJOR HERE] engineering as your field or major?
3. What appeals to you about working for our company?
4. Why did you apply for this particular job?
5. In what instances have you demonstrated leadership skills, and how would you describe your style?
6. What processes have you helped develop or singularly created that enhanced engineering performance capabilities? What was the impact of this process on your team's/department's/division's performance and/or how did this impact something bigger company-wide?
7. Tell me about your greatest success in using logic to solve an engineering problem.
8. Describe an occasion when you worked on a team and something did not go well. How did you respond?
9. What checks and balances do you use to make sure that you don't make mistakes?
10. Do you have any patents? If so, tell me about them. If not, is that something you see yourself pursuing in the future? Why or why not?
11. What engineering skills have you developed or improved upon during the past year?
12. Which software packages are you familiar with? What is the most interesting thing you know how to do with one of these packages?
13. What are you doing to stay current with the latest technology?

Problem-Solving Questions:

14. Describe any situations where you took initiative or displayed an entrepreneurial approach.
15. Give me an example of how you applied your problem-solving skills to a design challenge.
16. Share an example of how you have applied your skills to on-site work.
17. Describe your most successful engineering project. What enabled you to achieve this success?
18. What about on-site work is most challenging for you?

Questions About Your Resume:

19. What have you accomplished outside of school and work that you are proud of?
20. What are your salary expectations?
21. Where would you like to be with your career five years from now?

Technical Questions

Interviewees might give you 1-2 questions (like a quiz) related to the subject and position you are applying. Key is to clue them in on your thinking process so be sure to explain things out loud.

However, it is important that you know the basic foundation of your major, therefore, it is important that you go into your interviews prepared for questions of your subject matter. The question below are examples of the type of questions you might receive but not an exact copy of what interviewers will ask.

Here are a few examples of some technical questions:

1. What is the required information to repair a midbeam in a building?
2. Describe any projects or coursework which equip you to work on design issues for water systems.
3. How much oil is necessary to pollute the ocean? (Environmental)
4. Do you have any security clearance to work on classified projects? If you have worked on a DOD project, describe a challenge which you encountered.
5. What are the ways to filter the contaminants in drinking water?
6. What are sources of contaminants in water?
7. Describe the differences between Corsim and Vissim models. (Civil)
8. How have you best applied computer technology to your work during the past year?
9. What software have you learned to use or mastered more fully during the past year?
10. Describe the process you use for writing a piece of code, from requirements to delivery. (Facebook, Cisco Systems)
11. Name a passive and active circuit component.
12. How do wireless signals lose power over distance?

Top 50 Technical Interview Questions:

1. What development tools have you used?
2. What languages have you programmed in?
3. What source control tools have you used?
4. What are your technical certifications?
5. What do you do to maintain your technical certifications?
6. How did your education help prepare you for this job?
7. How would you rate your key competencies for this job?
8. What are your IT strengths and weaknesses?

9. Tell me about the most recent project you worked on. What were your responsibilities?
10. From the description of this position, what do you think you will be doing on a day-to-day basis?
11. What challenges do you think you might expect in this job if you were hired?
12. How important is it to work directly with your business users?
13. What elements are necessary for a successful team and why?
14. Tell me about the project you are most proud of, and what your contribution was.
15. Describe your production deployment process.
16. Give an example of where you have applied your technical knowledge in a practical way.
17. How did you manage source control?
18. What did you do to ensure quality in your deliverables?
19. What percentage of your time do you spend unit testing?
20. What do you expect in the solution documents you are provided?
21. Describe a time when you were able to improve upon the design that was originally suggested.
22. How much reuse do you get out of the code that you develop, and how?
23. Which do you prefer; service-oriented or batch-oriented solutions?
24. When is the last time you downloaded a utility from the internet to make your work more productive, and what was it?
25. What have you done to ensure consistency across unit, quality, and production environments?
26. Describe the elements of an in tier architecture and their appropriate use.
27. Compare and contrast REST and SOAP web services.
28. Define authentication and authorization and the tools that are used to support them in enterprise deployments.
29. What is ETL and when should it be used?
30. You have been asked to research a new business tool. You have come across two solutions. One is an on-premises solution, the other is cloud-based. Assuming they are functionally equivalent, would you recommend one over the other, and why?
31. What do you do to ensure you provide accurate project estimates?
32. What technical websites do you follow?
33. Have you used Visual Studio?
34. Have you used Eclipse?
35. What is a SAN, and how is it used?
36. What is clustering, and describe its use?
37. What is the role of the DMZ in network architecture?
38. How do you enforce relational integrity in database design?
39. When is it appropriate to denormalize database design?
40. What is the difference between OLAP and OLTP? When is each used?
41. You have learned that a business unit is managing a major component of the business using Excel spreadsheets and Access databases. What risks does this present, and what would you recommend be done to mitigate those risks?
42. What automated-build tools or processes have you used?
43. What is the role of continuous integration systems in the automated-build process?

44. Describe the difference between optimistic and pessimistic locking.
45. In databases, what is the difference between a delete statement and a truncate statement?
46. What are transaction logs, and how are they used?
47. What are the most important database performance metrics, and how do you monitor them?
48. What is the role of SNMP?
49. What is a cross-site scripting attack, and how do you defend against it?
50. In network security, what is a honeypot, and why is it used?

C/C++ Interview Questions:

1. What leads to code-bloating in C++?
2. Write a C program to find the depth or height of a tree.
3. Write a program that reads a positive integer N and then prints an "N times table" containing values up to $N * N$.
4. How would you check if a binary tree is balanced?
5. How do you compare two linked lists?
6. Write a C program to compare two linked lists.
7. How would you detect a loop in a linked list?
8. Write a C program to detect a loop in a linked list.
9. How do you do dynamic memory allocation in C applications?
10. Describe the advantages and disadvantages of dynamic memory allocation vs. static memory allocation.
11. What's the difference between a constructor and a destructor?
12. What is function overloading and operator overloading?

10 Important Interview Questions Engineers Should Prepare for and Why they are asking these questions:

1) When did you start your job search? Have you been offered any positions?

- **What they're really asking:** This question is trying to establish whether there is any particular reason you aren't currently employed. Also, the company won't want to hire someone that has applied for a job simply because they are desperate to be employed.
- **How to answer:** Be relaxed and explain that you are looking for a company and role with the right fit, and that you are quite choosy when it comes to finding the 'right job'. You may then need to answer what you believe the 'right job' entails.

2) What do you enjoy most/least about engineering?

- **What they're really asking:** The interviewer is trying to gauge your general attitude towards work.

- **How to answer:** You should tailor this to the responsibilities of the role you are interviewing for and try to keep your answer centered on the positives.

3) Where do you see yourself ten years from now?

- **What they're really asking:** Your potential employer will want to be sure that you aren't going to move on to another job too soon.
- **How to answer:** You should research a career path that would flow from the position for which you are interviewing and ensure that you emphasize the intention to master the demands of that position first.

4) What would you consider to be your greatest success in using your skills to solve an engineering problem?

- **What they're really asking:** Your potential employer is trying to assess two things: how you approach explaining your achievements and how you apply your problem-solving abilities to overcome obstacles.
- **How to answer:** Draw upon a specific example – one that showcases your strengths as an engineer, such as the ability to think on your feet.

5) What new engineering specialty skills have you developed during the past year?

- **What they're really asking:** As an engineer, it's important to keep up to date with changes in the industry and technological advances. This question is designed to find out if you are proactive in procuring new knowledge or learning new skills.
- **How to answer:** Detail any particular skills that you developed whilst at university and describe how you obtained them. Finish up talking about your willingness to learn.

6) What do you get out of engineering that you couldn't get from any other kind of work?

- **What they're really asking:** The employer wants to gain an understanding of what motivates you to move forward in your career.
- **How to answer:** You could talk about one engineering achievement that you are especially proud of, or you could explain how day-to-day aspects of the work stimulate you. If it is the latter, you should again tailor this to the role for which you are interviewing.

7) On your last project assignment, what problems did you identify that had been previously overlooked?

- **What they're really asking:** Your potential employer will want to determine what you contribute to a team.

- **How to answer:** This is an ideal opportunity to depict several key qualities such as attention to detail, effective communication and creative thinking. You should come to the interview prepared with an example.

8) What was the workload like in your previous engineering department?

- **What they're really asking:** They want to establish your expectations and how you would handle a heavy workload.
- **How to answer:** It is imperative that you do not complain about the workload in your previous job, even if it was taxing. Illustrate your efficiency; explain how you manage your time and prioritize tasks.

9) What personal characteristics do you feel are necessary to be a successful engineer?

- **What they're really asking:** This question is really an assessment of your values. Your potential employer may be trying to get a feel for your character.
- **How to answer:** Choose three or four characteristics and expand on why you think they're important. You could also describe how a previous manager of yours displayed these qualities to good effect and how you learned from that example.

10) Describe an experience with a difficult client. How did you handle the situation?

- **What they're really asking:** They want to analyze your emotional stability and how you act under pressure, as well as how you treat clients.
- **How to answer:** Your answer should include: the way you listened to what the client had to say, confirmed an understanding of their concerns and subsequently took responsibility to resolve the situation by offering a solution, without going into too much detail about the specific complaint.

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