



CORE

(Mechanical/Chemical/ Electrical/Civil)

Interviewed Ambuj Verma from Jaguar Land Rover India (Electronics)

Q. When did you start preparing for the placements?

A. Started preparing from the end of internships only - JULY month

Q. Whom did you consult regarding the preparation and how did you get their contact?

A. Seniors who knew in college of Micron, Qualcomm, also tried reaching out to people on LinkedIn that were in core companies (messed IITD alumni and those did internships in same profile)

Q. What books or online resources did you refer to?

A. Core courses of electrical - Analog Electronics, Digital Electronics, Circuit Theory *mainly*

In books: 1. Digital: Morris Mano

2. Analog: Shouri Sir Lectures on NPTEL

3. Circuit: notes from circuit theory course

For aptitude, referred to OCS Preleaf (aptitude also comes in core test)

Other than this:

Majorly above-mentioned books, small topics - verilog useful for the tests.

Q. Any mistake you made which you want to make the students sitting in placement aware of?

A. “Initially I thought that there are not many students in core, so the test doesn’t matter but the top companies and day 1 companies of core like texas and Nvidia, they just shortlisted 1 or 2 students. Also students forget that PG students are also the competition especially for the core profile”

Specifically:

1. TEXAS - Analog
2. Qualcomm - Digital
3. Jaguar - Power Electronics

– In the core profile also, they ask coding questions in tests and test the basic skills of coding.

Extras

Note - just adding things which can make things better, do only the things which seem feasible.

ALSO DON'T OVERDO THINGS IF IT SEEMS LIKE IT.

Interviewed Venkatesh Pillai from Intel Technologies (Software Engineer)

- There is only coding round + aptitude followed by an interview, the coding round is of medium level (not too tough)
- Written test : aptitude + basic digital questions
- Interview duration : 40 - 50 minutes
- Questions asked in the interview:
 - On hardware electronics *basic*
 - Stacks, Matrices, Bit Manipulations, Dynamic Programming
- Sites/Resources referred to: stuck only to **LeetCode** and **GeeksForGeeks**.

Q. What was the strategy while solving questions from LeetCode?

A) Started long term back in January itself, 10 easy questions + 10 medium questions and keep on repeating. “hard questions are not necessary”

Q. Mistakes that you made which you don't want the students to repeat?

- Practiced only from LeetCode but the test came from Hackerrank. Questions are not direct like in LeetCode but more like Hackerrank format.
- For software domains of Hardware companies, students who only prepare for software struggle because in interviews they test your knowledge on **hardware and digital**.
- **Stacks, Arrays and Strings** are underestimated and they must be practiced.

IMPORTANT:

- It is necessary to have some hardware and digital knowledge for hardware companies *even if* the role is software.
- Whatever company a student is preparing for, he/she must know what kind of products that companies make and what that company does.
- You can do projects from startups, it highlights your CV especially at the time of shortlisting and final selection.

John Deere :

The profile was of a software engineer but the company asked questions on Control Domain.

Interviewed Ishaan Garg from Groww (Product Manager)

– Books referred to:

- Decode and Conquer - Lewis Lin
- The Product Manager Interview - Lewis Lin
- Preparing for Product Interviews (with Flipkart APM deck examples) - Advait Sridhar and Akash Ramdas
- Swipe to Unlock - Aditya Agashe, Neel Mehta and Parth Detroja
- Case Interview Secrets - Victor Cheng (*For basic structuring and flow of the case interview*)
- Cracking the PM interview - Gayle Laakmann McDowell

– Students can follow “**the product folks**”

– You should have good problem solving skills, user understanding and user insights.

– Students can brush up on the **First round i.e** RCA - Root Cause Analysis.

– **Guesstimates, Cases and Product Ideology**

– Students can study case studies and sample cases from the books mentioned above.

–**Procedure:**

- After the CV shortlisting, everybody is sent an Email, in the email there is a problem statement, you have to study the problem well and prepare a whole document. (**deck**)
- In the detailing of the solution (don't need to go into the whole process) you have to list out certain features, certain techniques, certain tech requirements, functional requirements which would make it easier for everyone else in the organization to understand the problem.

– Skills required for Product Manager role:

- It is very open-ended i.e how you think of solution on spot
- Communication skills
- How you present your thoughts

–**What is a deck?**

Define the problem, pinpoint the reason, write a detailed solution.

Interviewed Raghav Sharma from Flipkart (Product Manager)

Procedure of Process:

- Deck : They release a problem statement and give windows of 8-9 days to work on the problem and create a PPT of seven to eight pages.
- For making PPT, referred to google for sample decks, previous year decks and on **LinkedIn**, there are sample decks open to all uploaded by the students who prepared it at their time of placements. (most of the students don't know this feature of LinkedIn)
- Shortlisting is done on the basis of Decks, there is no pre-shortlisting. In the Flipkart PM role, **they do not look over CG or CV**.
- In one month, the shortlist will be released.

How to solve a deck?

- The critical step is coming up with the problem that you are going to solve. The problem needs to be relevant enough and that “needs to be solved”.
- You should have some idea why that problem is relevant and you should present it with some statistics and facts.
- You should have a reason why you chose a particular solution for a problem, you need to justify this in your deck.
- What could be the pitfalls or the problems that might come up with your solution.

What does the recruiter look for in a candidate's deck?

- **Primarily**, the company looks for hygiene of the deck, the color, the font, the way the content is presented. *Advised to use images instead of text sometimes.*
- The problem that candidate picked and reason for choosing that problem. Why is it relevant and if it is relevant what would be the impact it would generate by solving that.
- Whether the candidate looked over all the used cases of the particular problem.
- Whatever solution, candidate has proposed, it should be something that can be executed in economic terms and is solvable in one or two years.

Interviewed Raghav Sharma from Flipkart (Product Manager) [Continue....]

Interview Procedure:

- After getting shortlisted, flipkart assigns a buddy.
- There are YouTube channels : **PM Schools** - <https://youtu.be/9GSXkGgcivA>
Product Folks - <https://youtu.be/U7Rx0HvyF3Q>
Exponent - <https://youtu.be/IP05OgGbU8Q>
- There are 3 rounds:
 - **Problem Solving** - There are either Guesstimates or Root Cause Analysis (RCA).
 An example for RCA : Why are the number of engagements or shares on whatsapp declining? – So, you need to interact with the interviewer or cross-question in order to come to the conclusion.
 - **Problem Designing/ Product Thinking** -
 An example : How will you design an OLA App for blind people?
 – They see how you approach towards the problem/ cross-questioning
 – The interview duration is around 50-60 minutes
 - **HR Round** -
 To see if you're fit for the role of Product Manager
- **How to prepare for interview rounds?**
 - Make a group with your shortlisted candidates, and daily have 3-4 mock cases with them, it takes around 3-4 hours per day.
 - You have to follow the same routine everyday for 30 days.
 - You are allotted a buddy, where the buddy sessions take place once in a week.

Interviewed Soumay Srivastava from Wipro Enterprises (FMCG)

Q. What are the processes involved in recruitment?

1. There is one aptitude test followed by an interview (Resume shortlist + Test shortlist). The aptitude was more like a rapid fire round; a test of how quick you are in solving questions. [40 questions in 20 minutes]
 2. You cannot go back once you have attempted the question + limited time.
 3. Syllabus of the test was - Mathematics, English, General Aptitude.
- Students can refer to HUL and PNG repositories to prepare for interviews (situation-based questions).
 - *In FMCG: they don't ask about case studies or what you did in 4 years of your branch, they ask you **what you did in 4 years of your college life.***
 - *In interviews,*
 - They grill you on your Resume, ask you to explain your Resume.(Mainly Internships or Projects and cross-question on them i.e for example: “were you satisfied with the result? How did you come to the conclusion?”
 - Apart from your Resume, they ask **Situation-based questions.** You are given a situation and asked what you would do if you were present in this situation.

SOME IMPORTANT POINTS TO BE NOTED FOR INTERVIEW:

- You should know your CV thoroughly and also you should be able to explain each and every word you've mentioned in your CV in depth.
- “In Jaguar Interview , I was asked in depth about the **technical skill** I mentioned, generally, Technical Skills are not asked upon in interviews”

Q. What do they look for in Candidate's Resume?

A. “All-rounder” Specifically, in FMCG, they want the Resume to be balanced, with a decent CGPA along with decent achievements. The student should have equal experience in leadership roles, different clubs and activities, should have done projects to show that he/she has problem solving skills, and should have done an internship to show that you can work in a professional environment.

Resources referred to :

- Prepleaf (<https://www.prepleaf.com>)
- Brainstellar, Famous books of probability for Aptitude.

Interviewed Ashit Ranjan from FARE Labs (Business Leadership Trainee)

Q. What does Business Leadership Trainee actually mean?

A. It is a mixture of Business Development and Business Analytics. It is a client facing role and it works on analytical testing and calibration services. The FMCG companies are their clients (their products are tested in FARE Labs). They have to look upon the existing clients and bring new clients as well. “You don’t only get exposure on Business Development but you also develop yourself into Business Analytics”

Q. What were the pre-processes involved?

A. Resume Shortlisting followed by two rounds of Group Discussions and then the final interviews.

SOME BASIC POINTS TO REMEMBER BEFORE GOING INTO A GD: (*Brownie Points*)

- They want you to take initiatives. You should be the one who is bringing in new arguments, bringing in a new way of thinking in GD. *Mostly, people tend to repeat points that are already spoken.*
- You should be a good listener, it counts to what others are speaking.
- At the end, they want you to summarize it well. People usually are not able to summarize well and it gives a bad impression that you weren’t attentive while others were speaking.

Q. What are interviews based upon?

1. The interviews are more inclined towards the Resume. They grill you on your Resume, you should know in depth about each and every word you mentioned in your Resume.
2. They want to see that you are confident enough to face the client, so it is important that you present yourself well in front of them.

Interviewed Yashasvi Suryansh from Jaguar Land Rover (Mechanical Core)

Procedure of the processes: Written test → SOP writing → Interview

Test comprises of : Core Mechanical + Aptitude + Coding

Pattern of Test :

1. Aptitude and Core: consist of 3 levels - Easy, Medium & Hard (each having different weightages). Total Questions : 20
2. Coding : 3 Questions , Duration : 90 mins.

Preparation :

For Core -

- Concepts must be decently furnished.
- Revise tutorials
- Practice questions from GATE Exam Books (contains summary of courses)
- There are online practice forums like BYJU's

For Aptitude -

- Brainstellar → <https://brainstellar.com/>
- TED-Ed Puzzles Playlist → [A lot of companies ask similar questions]
- <https://youtube.com/playlist?list=PLJicmE8fK0EhMiOWNNhIY4Lxg8tupXKhC>
- Book → 50 Challenging problems in probability
- OCS Placement Series
- Test series on Prepleaf → <https://www.prepleaf.com>

For Coding - Solved questions of Easy and Medium category on :

- LeetCode → <https://leetcode.com>
- InterviewBit → <https://www.interviewbit.com>

– Written Tests were more conceptual rather than numerical

– It is important to revise the core courses for preparing for core companies.

SOP-

- Holds significant weightage, questions might be asked on your SOP in interview
- Asked to submit SOP **15 days** before interview

Interviewed Yashasvi Suryansh from Jaguar Land Rover (Mechanical Core) [Continue....]

Standard HR Questions :

Q. What are your ambitions? Why do you want to join Jaguar?

Q. How passionate are you about the company?

Background you should preferably have to appear for Jaguar :

- CGPA: plays a crucial role in core companies (*For past 2-3 years, most of the selected students are 9 pointers*)
- Test Rank: *Usually*, students who are **Top 5** in tests are shortlisted for further rounds.
- Projects & Internships: In interview, they grill you specifically on your projects and internships mentioned in your CV. "What is that about?" "How much do you know about them?"

– In the interview, Jaguar asks **original questions with a hard level of difficulty**.

Interview : [45 MINUTES]

- 10-15 minutes on Resume.
 - You need to clearly know in depth about your CV.
 - "In my case, spent 10-15 minutes solely on one project"
- 10-15 minutes on general questions of Core Mechanical
- Final 10 minutes → HR Round

Preparation for Interview :

- Mock Interview : You can conduct a mock interview with your friend based on Resume
- Get your concepts clear because interview is mostly conceptual (no solving part)
- Research a bit about the company, ask questions on company like:
"What is the vision of Jaguar in the coming years?"
- You should go through your SOP before appearing for the interview, questions are sometimes SOP driven too.

Syllabus to focus in core:

- APL104 → Solid Mechanics and related
- Design of Machines & Theory of Machines
- MCL140 → Thermodynamics
- Heat and Mass Transfer
- Vibrations & Automobile Engineering - NOT TAUGHT IN IITD (if you have a background in weaker dynamics, it's an advantage)
- MCL723 → Weaker Dynamics (there are also various series on youtube)
- MCL316 → Vibrations

Interviewed Yashasvi Suryansh from Jaguar Land Rover (Mechanical Core) [Continue....]

PREPARATION LINKS -

1. Coding:

- <https://www.interviewbit.com/courses/programming/> Or <https://leetcode.com/problemset/algorithms/>
- For speed, Do Virtual contests on <http://codeforces.com/contests>
- GeeksForGeeks → <https://www.geeksforgeeks.org>

2. Puzzles:

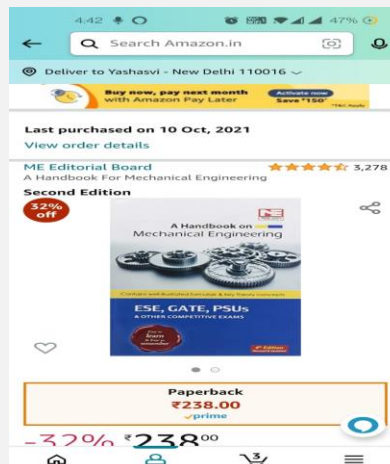
<https://owncloud.iitd.ac.in/nextcloud/index.php/s/45yBMmNDWZZnxC>: contains nearly everything

I did in that order:

1. 50 challenging problems
2. brainstellar.com/
3. gurmeet.net
4. [Ted Ed puzzles](#)

You can also do

- Xinfeng Zhou
- Peter Winkler
- Heard on the Street: Quantitative Questions from Wall Street Job Interviews
- <http://www.cseblog.com/>



“This is another YouTube channel which I referred to during my degree in general... Contains really good explanations for a lot of concepts... Would recommend students to go through this channel once, especially thermo and automobile engineering part” - <https://youtube.com/c/Lesics>

“A great playlist for introducing Vehicle Dynamics. Some concepts might be overwhelming so I'll recommend the students to touch this only when they've prepared all other courses... It's more beneficial to revise the concepts you already know rather than learning new concepts at this stage” - https://youtube.com/playlist?list=PLW3FM5Kyc2_4PGkumkAHNXzWtgHhaYe1d

Interviewed Ajay Kumar Soni from Qualcomm (System Engineer)

Test :

- No coding questions asked, only aptitude + operating systems + database management + Object Oriented Programming
- Mainly focus on **architecture and digital logic** (should know about what the company works upon)
- You need to practice objective questions (*has previous year folder, not shared yet*)

In Interview: 2 Tech rounds followed by 1 HR round. [Duration - 2.5 hours]

What is asked in the Technical Round?

– You need to have good knowledge of computational networks, wireless technology and basics of operating systems.

For example : “How memory management works?” “How does system fault occur?”

– You should be specifically good in **C language**.

– Questions on Data Structures and Algorithms are asked, max to max they ask questions on trees, not more than that (*“no questions on Dynamic Programming are asked”*)

– 2-3 questions on coding are asked. For example- “Find n^{th} last node in the linked list?”

– DCP and IP are compulsory for Qualcomm Interviews

– **BITWISE OPERATOR (VERY IMPORTANT TOPIC FOR THIS PARTICULAR PROFILE)**

“No company specific questions were asked in Qualcomm Sector”

What must a candidate’s CV contain?

– Good knowledge of networking, Computer Architecture and Operating Systems.

– “They forced me to solve questions in C language only, they want to hire students who are good at C language *only*”

Mistakes you made?

“If you don’t know any answer to the question, directly deny that you don’t know that answer. Don’t try to fool the interviewer, or put him in a loop”

– There are a total of **2 rounds** of interviews - Total 2.5 Hrs.

– “You don’t need to focus much on algorithms, there won’t be any question on DP”

– **FOCUS ON RECURSION TOPIC**

Interviewed Kamal Tewari from Lam Research (Modeling Design Technologist) PhD

Pre-processes involved:

1. Telephonic Interview:
 - Basic questions related to candidate's previous research, what the candidate is pursuing in PhD
2. Personal Interview: **3 rounds**
 - **1st round** (Technical Round) :
 - Basic technical questions related to mechanical were asked. Questions were asked on CFD (Computational Fluid Dynamics).
 - **“Mostly they were focusing on how the candidate approached towards the problem”.**
 - The projects done and approach used were focused on. (*Not too much technical*)
 - In technical, they asked questions on Fluid flow and Mass transfer
 - **2nd round** (Fitman Round) :
 - There were managerial type of questions and how the candidate's background matches with the profile of the company
 - **3rd round** : interviewed by the director

“Written round is basic GATE syllabus”

- Basic questions related to mechanical core (referred to textbooks only)

Interview:

- Mostly ask behavioral interview questions.
- They asked “what did you do?, how did you do this thing?” and questions like that, and they go into depth
- You must know what is written in the Resume in depth.
- There were basic technical questions asked.

For example : **Heat Transfer from Bulk Volume Analysis**

“Whatever you are presenting, do it in an effective way. You should show how you deserve that position. Problem Solving Skills are what they look for in a candidate”

Interviewed Nehal Jain from Enphase Solar Energy

(Hardware Engineer)

Summary for Core Engineering preparation:

1. Had genuine interest in core EE subjects, so prepared for core along with the semesters.
2. For tests, 2 courses were important - ELL202(Circuit Theory) and ELL201(Digital Electronics), so study them well.
3. Companies like Texas Instruments focus slightly on Analog Electronics, but questions were not very hard. Basic knowledge of Circuit Theory was sufficient. Questions like basic RLC circuit solving were asked in interviews as well.
4. Interviews generally did not focus much on coding, but decent knowledge of HDL or Hardware languages like Verilog is expected.
5. Enphase focuses slightly on Power Electronics, but general knowledge of ELL302(Power Electronics) would suffice.
6. In resume, course projects are mostly sufficient, it is not mandatory to have fancy stuff like SURA, Publications etc.
7. Companies like Qualcomm, STMicroelectronics often ask some tricky/hard questions, and they are more inclined towards MTech students as well.
8. Communication Engineering is generally not asked in core interviews, Control Systems may be asked.
9. Overall, course knowledge is sufficient for interview questions.

Additional tips/takeaways:

1. Always keep a backup profile, like I kept SDE/Analytics as backup and did moderate preparation.
2. Use your applications judiciously.
3. Did some CP from standard sites like Leetcode/InterviewBit to practice.
4. Learning SQL for Analytics might help.
5. Do practice past year questions of a company to gain more insight.
6. Be thorough with your CV, they generally grill you on that.
7. A CGPA of 8+ is considered safe, though 7.5+ may be sufficient as well.
8. Practice your communications skills, they help in interviews.
9. If you do not know the answer to a question, try to show your approach to the question. They are interested in your approach and not always the final solution.

Interviewed Mudit Aggarwal from Texas Instruments(Digital Engineer)(PPO)

Summary:

1. Initially I also felt inclined towards SDE/Quant companies, but I didn't get really good at coding and CP etc., and I developed interest in core EE subjects, so I decided to go for core engineering profiles.
2. For core preparation, course knowledge is good enough, if you have studied them properly in the semesters.
3. Courses like ELL201,ELL202,ELL304 help in the interviews since circuit based questions are asked.
4. Interviews went smoothly during the internship drive, and the questions were not very demanding.
5. In general, tech profiles demand programming proficiency, so basic knowledge of programming and Data Structures helps. Rigorous CP is not required.
6. Having a good CGPA and projects demonstrates the working and academic rigor of the candidate, so try to keep it sorted.
7. Companies mainly look at the academic and projects section in the resume, PORs and ECAs do not have any significance here.
8. In particular, no additional courses and resources have to be consulted for preparation. Good electives often tailor the skill sets of a candidate.
9. Develop interest in courses as you study them, keeping everything for the end wouldn't help.

Interviewed Akshdeep Singh Ahluwalia from Dr. Reddy's (Core Technical)

Summary:

1. Interned at BPCL as a Research Associate after 3rd Year, and a winter intern after 7th semester.
2. Interned at Dr. Reddy's after 8th semester, in the core chemical engineering profile.
3. The interview was preceded by a GD, where the cases were discussed. For example, properties of a Skin Cream.
4. Courses like Fluid Mechanics, Transport Phenomena, Mass Transfer, Chemical Reaction Engineering are important.
5. Projects are usually grilled upon. So be thorough with your CV.
6. Questions were not very hard, course knowledge is usually sufficient.
7. Coding is not a part of interviews, unless you have mentioned it in your projects.
8. The test, however, had some questions from Chemistry, like JEE stuff, which were very static. Hardly anyone would remember those reactions, no need to prepare particularly for it.
9. Try to keep good projects and CGPA in your resume (8+ is desirable).
10. If in earlier years, take up projects in core chemical engineering, they would help in core interviews while demonstrating working proficiency.

Final Strategies for preparation [Electrical/ Mechanical/ Chemical Core]

1. Two month Strategy:

For Electrical Core, start revising past courses like ELL201(Digital Electronics), ELL202(Circuit Theory), ELL304(Analog Electronics) since these courses are the ones which form the basis of most of the questions in the tests as well as the interviews. If you have applied to Communication engineer profiles, you may also consider revising ELL311(Communication Engineering) and ELL205(Signals and Systems).

Practice programming questions from LeetCode and InterviewBit to get a feel of the coding questions asked in interviews. Revising Verilog might be useful as well.

For Mechanical Core, the pattern is similar, about revising some of the important courses mentioned above like Solid Mechanics, Vibrations, Machine Design, Thermodynamics, Heat and Mass Transfer etc. and programming as mentioned above. If time permits, you might want to read up a bit of Vehicle Dynamics as well.

For Chemical Core, revise courses like Heat and Mass Transfer, Transport Phenomena, Chemical Reaction Engineering, Fluid Mechanics etc. Be thorough with your project work, and be prepared to be grilled on them.

Practicing some GATE questions can be useful to brush up on some routine questions.

Apart from this, the last quarter may be spent on preparing standard HR questions and going through basic aptitude problems.

1. One Month strategy:

Prepare the above mentioned courses as per your proficiency in them, but Electrical Engineering students should try to keep good knowledge of at least Digital Electronics and Circuit Theory, Mechanical Engineering students should be thorough with Solid Mechanics, Heat and Mass Transfer, and Vibrations, and Chemical Engineering students should cover Transport Phenomena, Heat and Mass Transfer, and Fluid Mechanics. Look up the online resources mentioned above for HR questions, aptitude problems, and practice some routine LeetCode questions, which are commonly asked in interviews.

1. One week strategy:

Go through the past questions from these companies' interviews and tests, and get acquainted with the pattern of questions. Be thorough with your CV points and whatever projects you have mentioned since they are the potential grilling points in the interviews. You can also see the standard HR questions online and how to go about them. Practice some routine-moderate level programming questions.

Talk to seniors who have cracked these interviews to get first hand experience from their interviews.