KPIT

# KPIT's On-Campus Freshers' Hiring

## (Students in 7th Semester)

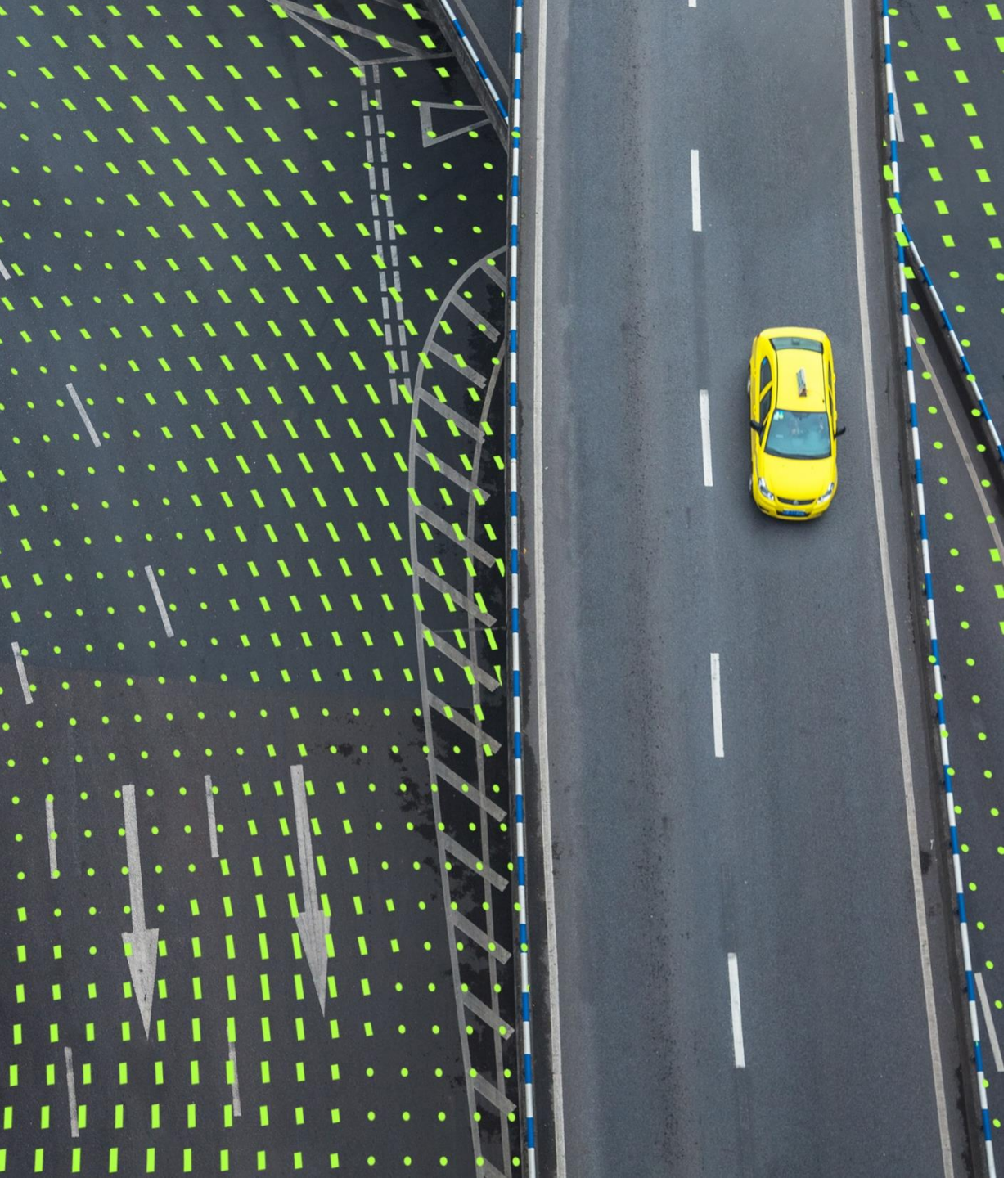
13 Sept 2021


Mr Rahul Uplap, Head ECoDe

Cdr (Dr) Shishir Sahay, Retd. Indian Navy
Head, Campus Hiring, ECoDe

Ms Sharmila S


# Overview



# Overview

- Job Description and Eligibility criteria
- Registration Process on KPIT's TalentOjo portal
- Overall Test Structure and Three-stage Selection Process
  - Day 1: Mon, 13 Sept 21
  - Day 2: Thu, 16 Sept 21 (For short-listed candidates)
- Syllabus for the Tests
- Instructions / Rules for the Exam
- Key Take-aways
- Contact Details

# Job Description and Eligibility Criteria

# Job Description

- Different domains / departments in KPIT
  - Autonomous Driving,
  - Connected Vehicles, Mobility,
  - Power-train, Mechanical Engineering,
  - Classic and Adaptive AUTOSAR
  - Artificial Intelligence applications for Mobility, etc.
- Analyze requirements given by the clients.
- Design or understand algorithms / concepts → mathematical model.
- Programming in C, C++, Python, MATLAB®, Simulink, etc.
- Testing of code and Simulink models
  - Verification and Validation
  - Hardware-in-the-loop testing
- Optimization and porting of code onto micro-controllers

# Joining CTC and Five-Year Accelerated Career Progression Plan

- **Cost to Company (CTC) upon Joining:**
  - *3.6 Lac per year (LPA). Please note that there is a two-year bond.

  *Differential salary hiring model is under discussion with Higher Management at KPIT.
- **If you**
  - Perform excellent in our Genesis program (KPIT's Graduate Training Program for Freshers); and
  - You are consistently in top 5%,
  - Your CTC can grow up to approx. 10 LPA in five years (nearly a three-time jump in five years!)
- Other Benefits (may change / improve)
  - Medical Insurance for Employees - 6 Lac
  - Parental Health Insurance – 5 Lac for parents and in-laws (payment basis, 50% cheaper than market)
  - Personal Accident Insurance – 20 Lac
  - Free Annual Health check for employees and their family members (parents, in-laws, spouse)

# Eligible Branches

- Automobile Engineering
- Comp Science & Business Studies
- Comp Science; Comp Science and Information Technology; Information Technology
- Electrical Engineering
- Electronics & Electrical Engineering
- Electronics & Telecom Engineering
- Electronics and Communication
- Electronics and Comp Science Engineering
- Instrumentation Engineering
- Mechanical Engineering
- Mechatronics
- Robotics & Automation

# Eligibility Criteria

**Academic Qualifications (Any one track):**

- 10th (Total: 60% & Maths: 70%) → 12th (Total: 60%, Maths: 70% & English: 50%) → B.Tech (60% aggregate or equivalent till 7th Sem)
- 10th (Total: 60% & Maths: 70%) → Diploma (Total: 60%) → B.Tech (60% aggregate or equivalent till 7th Sem)
- 10th (Total: 60% & Maths: 70%) → 12th (Total: 60%, Maths: 70% & English: 50%) → Diploma (Total: 60%) → B.Tech (60% aggregate or equivalent till 7th Sem)

- Graduation passing-out year – 2022 only

In this case, Students need not enter their Diploma marks in the TalentOjo portal.

# Registration Process on TalentOjo Portal

# Registration Process in KPIT's TalentOjo Portal

- You can access the registration link by logging into the https://talentojo-kel.kpit.com/tojo/

- Request you to kindly login to TalentOjo Portal by using below login credentials:
  - **User ID**: Personal email-id (not college e-mail id)
  - **Password**: Create a new password using the following process.
    - You can reset it by clicking on 'Forgot password' link.
    - Then follow the instructions to create a new password.

# Registration Process in KPIT's TalentOjo Portal


Please review the information carefully before submitting.

FILL DETAILS TO APPLY

Fields marked * are mandatory.

UNIVERSITY / COLLEGE REGISTRATION NUMBER (URN / CRN) OF THE STUDENT *

← University / College Registration Number (URN / CRN) of the student

PERSONAL INFORMATION

FIRST NAME *

MIDDLE NAME

LAST NAME *

GENDER *

Select Gender

BIRTH DATE *

03/10/2005

# Registration Process in KPIT's TalentOjo Portal

PERSONAL EMAIL ID *

MOBILE NUMBER *

PAN #

AADHAR CARD # *

## PERMANENT ADDRESS

C/O NAME *

HOUSE NUMBER *

STREET *

CITY *

DISTRICT *

STATE *

Select State

POSTAL CODE *

PREFERRED WORK LOCATION *

Select

IF KPIT IS NOT ABLE TO GIVE YOUR PREFERRED LOCATION, ARE YOU READY TO JOIN KPIT? *

Select

## DETAILS ABOUT THE COLLEGE / INSTITUTE

NAME OF THE UNIVERSITY / RELEVANT CERTIFICATE OR DEGREE AWARDING BODY *

Select College

# Test Structure

# Test structure

**Day 1: 13 Sept 2021**
**(2.5 hours in total for both sections)**
**6:30 PM to 9:00 PM:** You are allowed to log into the test from 6:30 PM to 7:15 PM only

**Day 1: Section A**
(All sub-sections are **mandatory**)

1. Aptitude
2. Engineering Mathematics
3. Professional skills and Knowledge of English Language
4. Basics of C Language

**Day 1: Section B**

(Attempt **any one sub-section** from the following, as per your expertise)

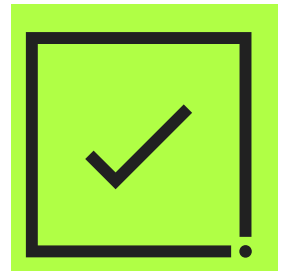
1. Basic Electronics & Engineering Fundamentals
2. CS / IT Engineering
3. Mechanical Engineering & Controls
4. Electrical Engineering

Short-listed candidates

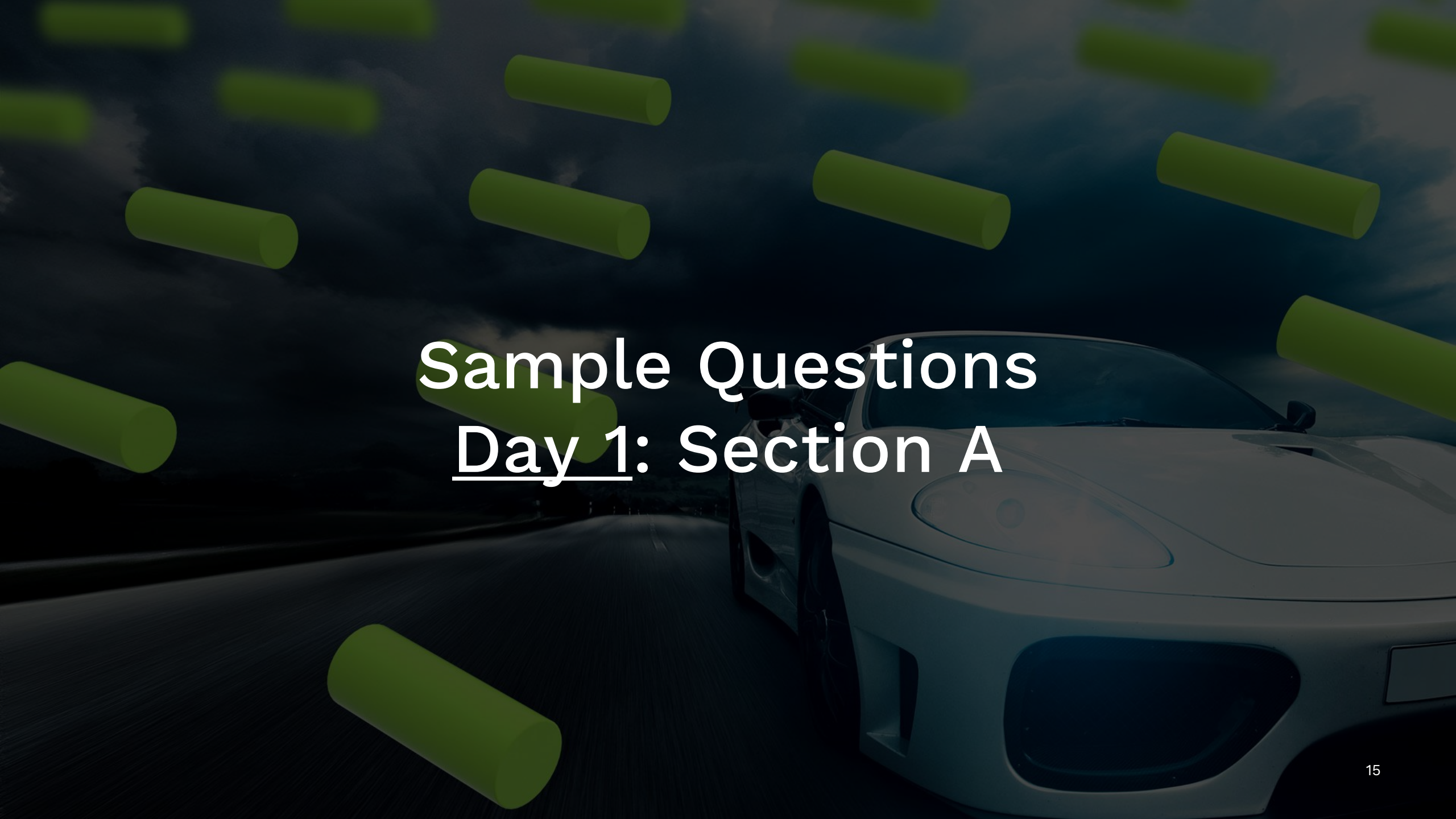
**Day 2: 16 Sept 2021**
**(3 hours)**
**6:30 PM to 9:30 PM:** You are allowed to log into the test from 6:30 PM to 7:15 PM only

Day 2: **Coding round**

Short-listed candidates



Short-listed candidates will be informed about the further process



# Sample Questions
## Day 1: Section A

## What should you expect in this section?

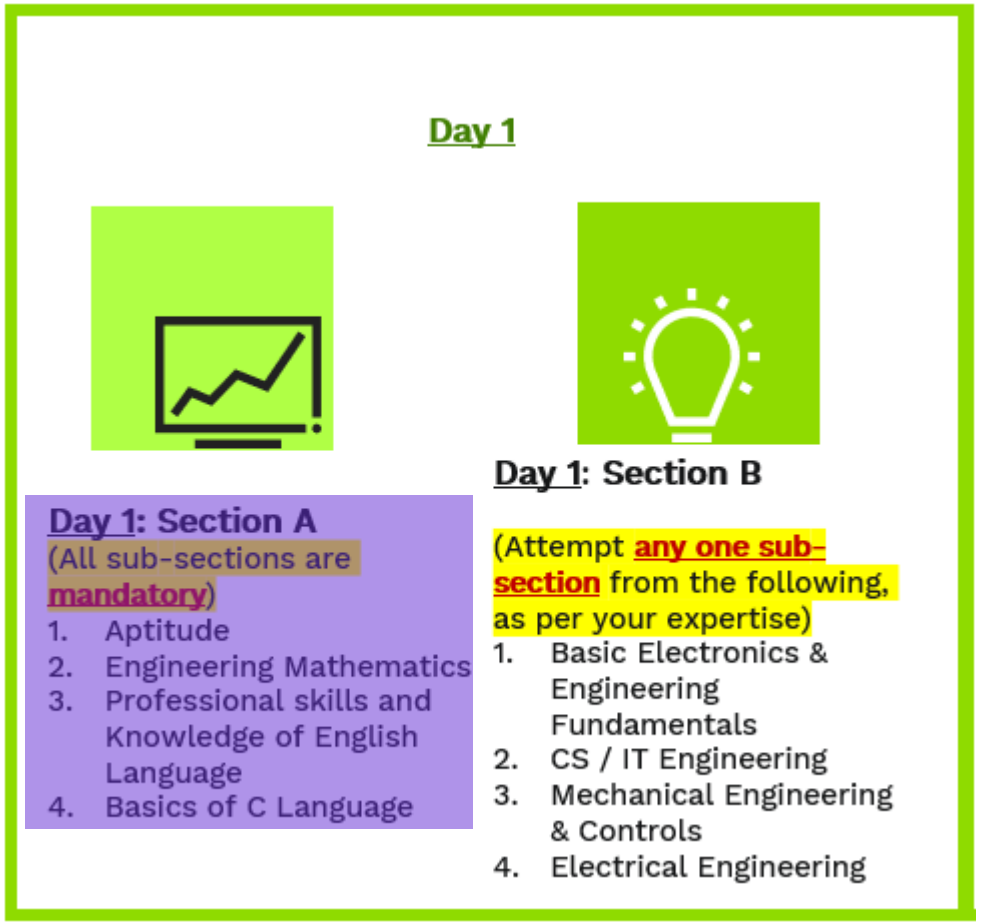
## This Section is common for all the participants

Aptitude

Engineering Mathematics

Professional Skills and Knowledge of English Language

Basics of C Language



# Example Problem on Aptitude

1. The percentage profit earned by selling an item for Rs. 1920 is equal to the percentage loss incurred by selling the same item for Rs. 1280. At what price should the item be sold to make 25% profit?

A. Insufficient Data

B. Rs. 3000

C. Rs. 2000

D. Rs. 2200

2. The average age of a class of 22 students is 21 years. The average increased by 1 when the teacher's age also included.

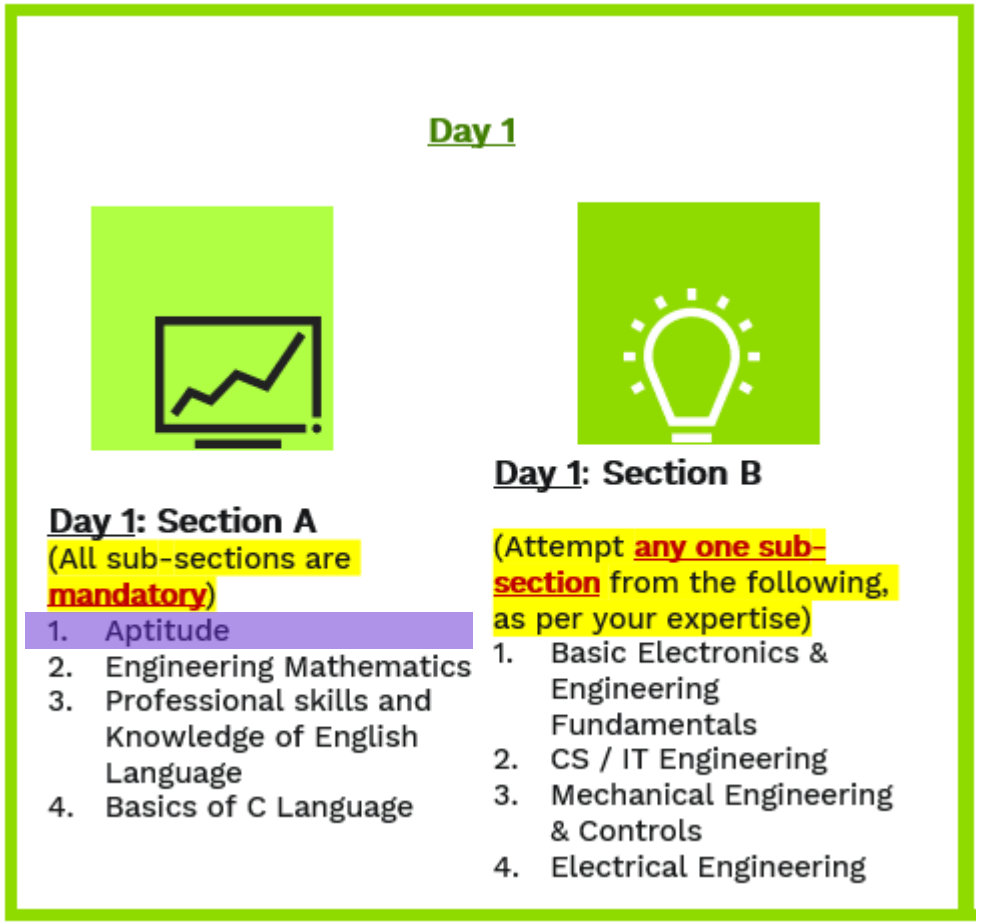
What is the age of the teacher?

A. 48

B. 45

C. 43

D. 44



# Example Problem on Engineering Mathematics

1. The lowest eigen value of the matrix $\begin{bmatrix} 4 & 2 \\ 1 & 3 \end{bmatrix}$

A. 5

**B. 2**

C. 1

D. 4

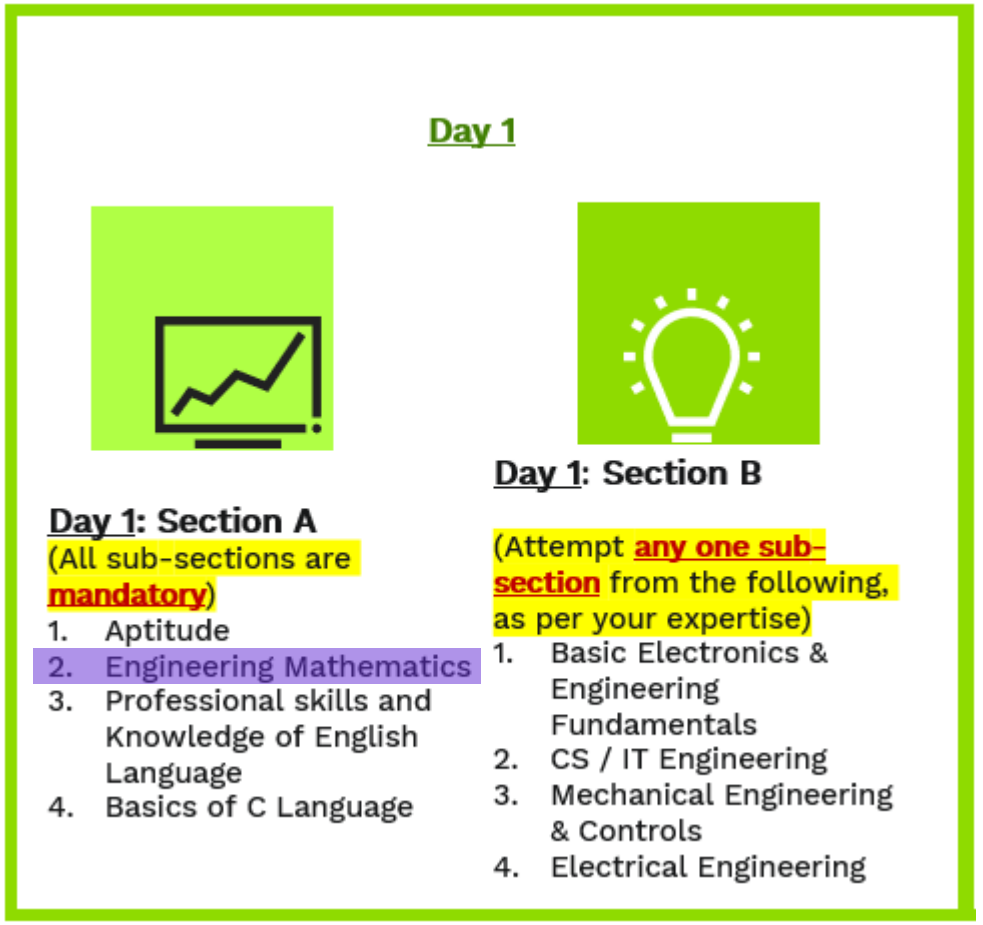
2. Solve $\lim_{x \to \infty} \frac{1 - \cos(x)}{x^2}$

A. 0.25

**B. 0**

C. 1

D. 2



# Example Problem on Professional Skills and Knowledge of English Language

1. Select the option in which both the columns are exactly same:

| | | |
|---|---|---|
| A. | KPIT Technology Ltd | KPIT Technologies Ltd |
| B. | Larsen and Tuobro Ltd | Larsen and Toubro Ltd |
| C. | Tata Consultancy Service | Tata Consultancy Services |
| **D.** | Google Inc. Ltd. | Google Inc. Ltd. |

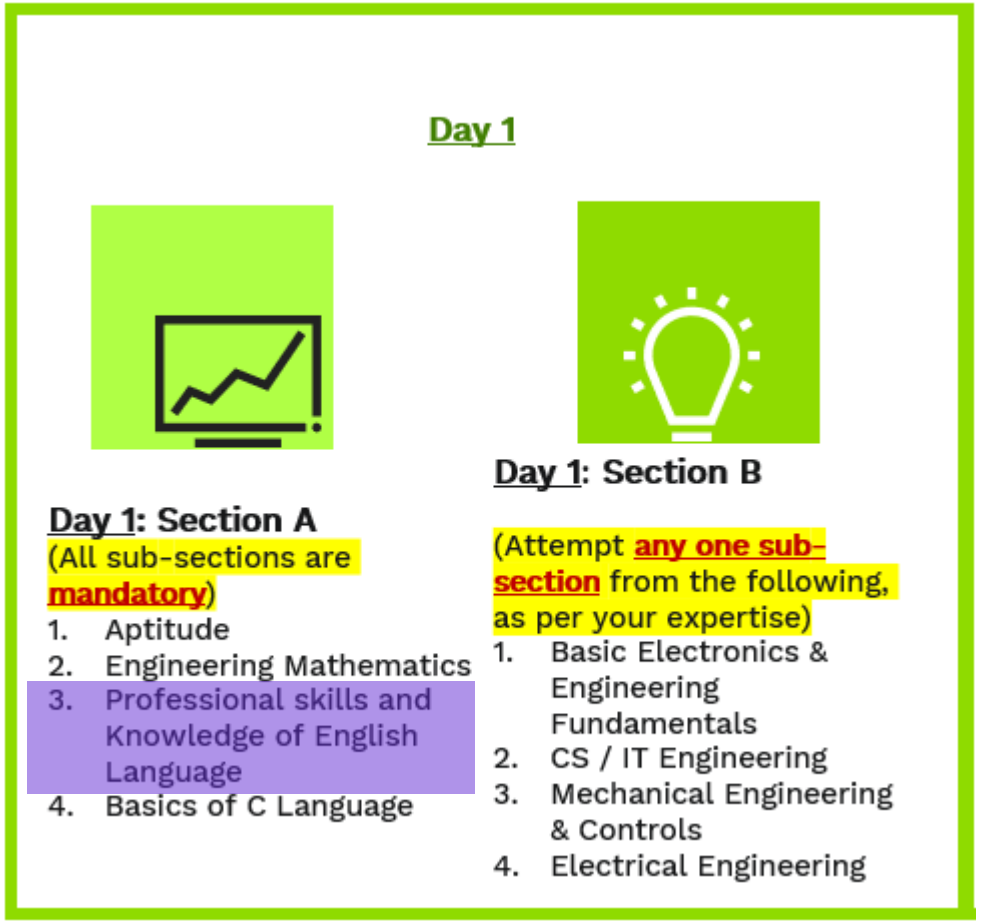
2. I ___ watching TV when Paul and Simon arrived.

A. were

B. is

**C.** was

D. am



# Example Problem on Basics of C Language

1. In statement "char *const q = "KPIT" ;" q is a:

A. pointer to constant

**B. constant pointer**

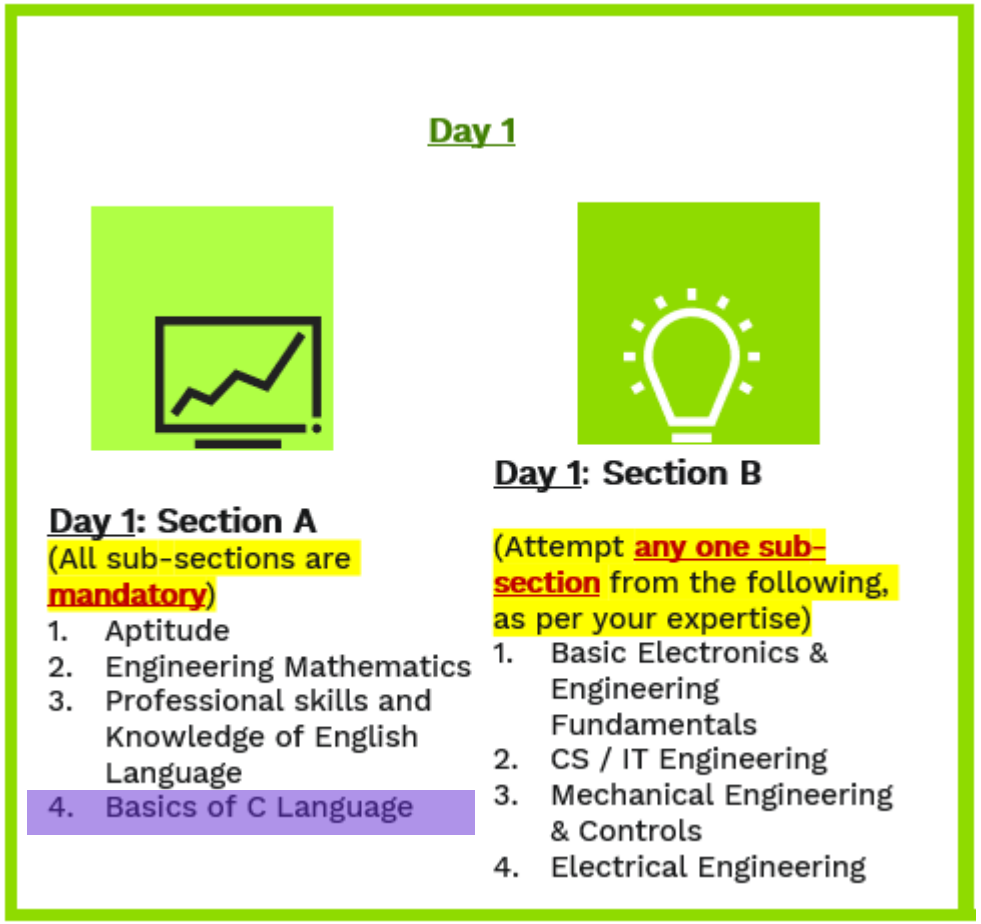
C. const pointer to constant

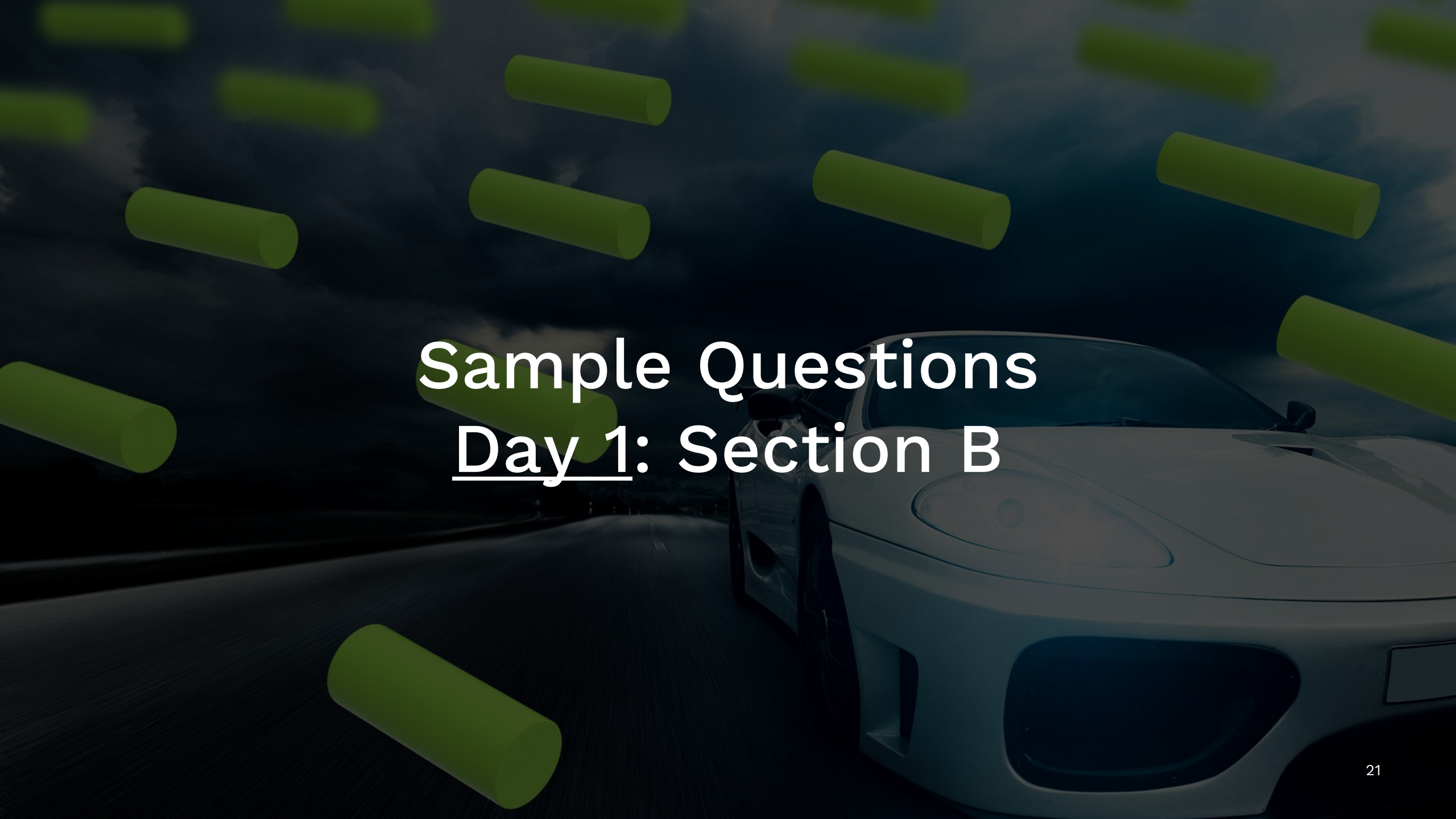
2. A structure can be nested inside another structure.

This statement is:

**A. True**

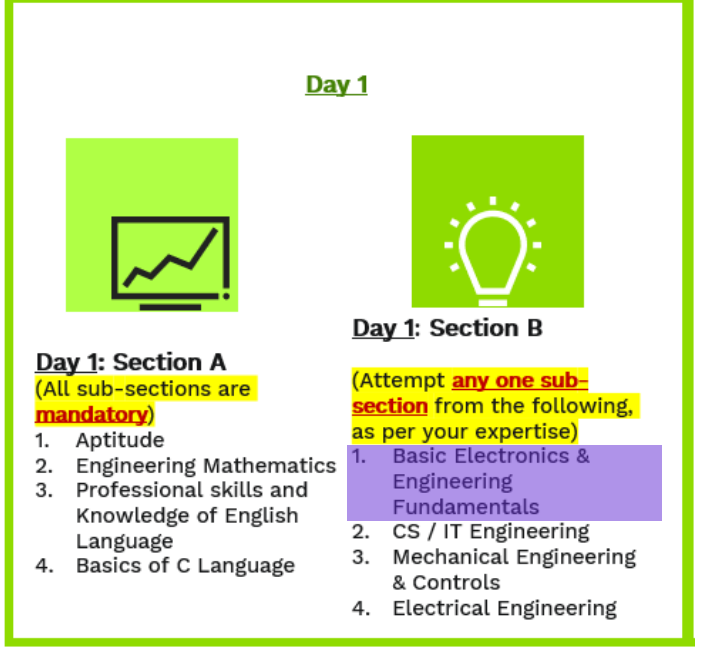
B. False





# Sample Questions
# Day 1: Section B

# Basic Electronics & Engg Fundamentals




You should expect Multiple Choice Questions on these topics / subjects.

CONTROL SYSTEMS, SIGNAL PROCESSING

DIGITAL ELECTRONICS

ANALOG ELECTRONICS, CIRCUIT THEORY

COMPUTER ORGANIZATION

# Example Problem for Basic Electronics & Engg Fundamentals

1. Which of the following transfer function will have the greatest maximum overshoot?

A. $9/(s^2+2s+9)$

B. $16/(s^2+2s+16)$

C. $25/(s^2+2s+25)$

**D. $36/(s^2+2s+36)$**

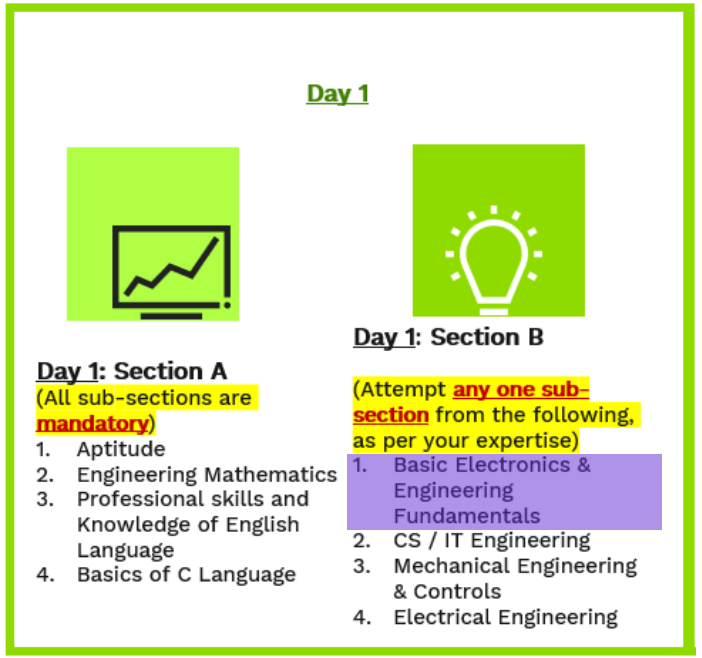
2. Simplify Y = AB' + (A' + B)C.

**A. AB' + C**

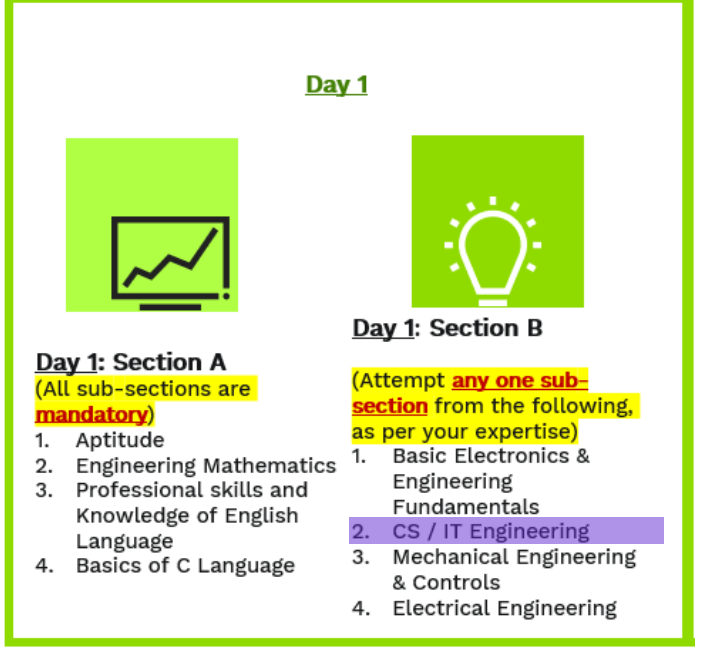
B. AB + AC

C. A'B + AC'

D. AB + A



# Computer / IT Engineering




You should expect Multiple Choice Questions on these topics / subjects.

DATA STRUCTURES

COMPUTER FUNDAMENTALS AND ARCHITECTURE

OBJECT-ORIENTED CONCEPTS

DATABASE

# Example Problem for CS / IT Engineering

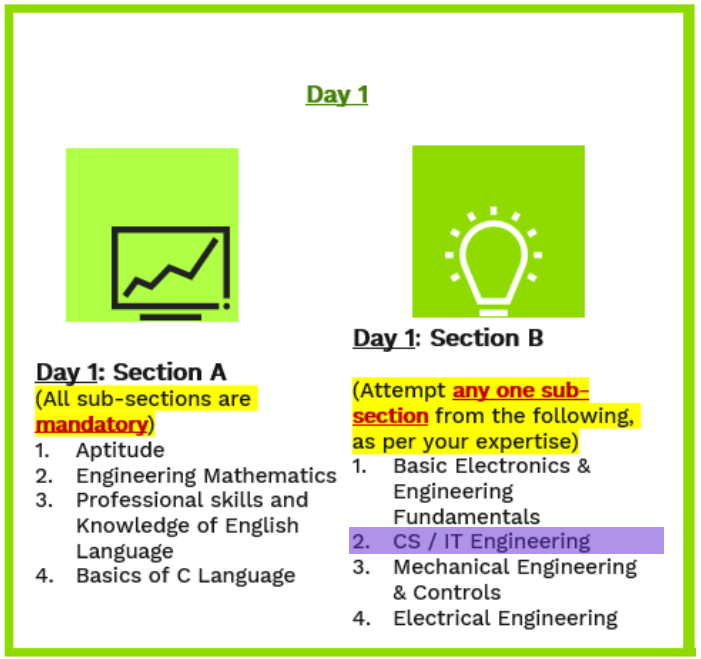
1. Which of the following recursive formula can be used to find the factorial of a number?

A. fact(n) = n * fact(n)

B. fact(n) = n * fact(n+1)

**C. fact(n) = n * fact(n-1)**

D. fact(n) = n * fact(1)




2. Which among the following best defines abstraction?

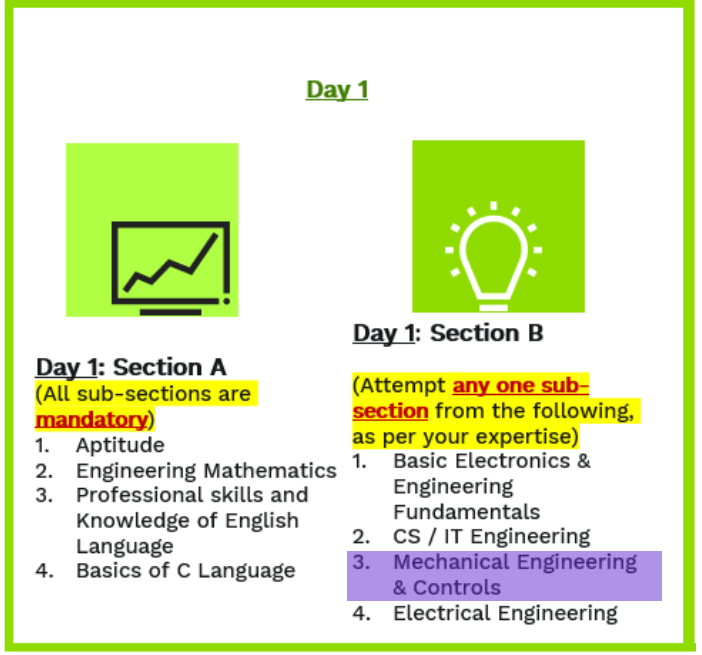
A. Hiding the implementation

B. Showing the important data

C. Hiding the important data

**D. Hiding the implementation and showing only the features**

# Mechanical Engineering and Controls




You should expect Multiple Choice Questions on these topics / subjects.

BASICS OF MECHANICAL ENGINEERING

CONTROL SYSTEMS

MATH MODELLING

VEHICLE DYNAMICS

# Example Problem for Mechanical Engineering & Controls

1. Compression Ratio of a petrol engine is nearly

A. 4:1

**B. 8:1**

C. 15:1

D. 20:1

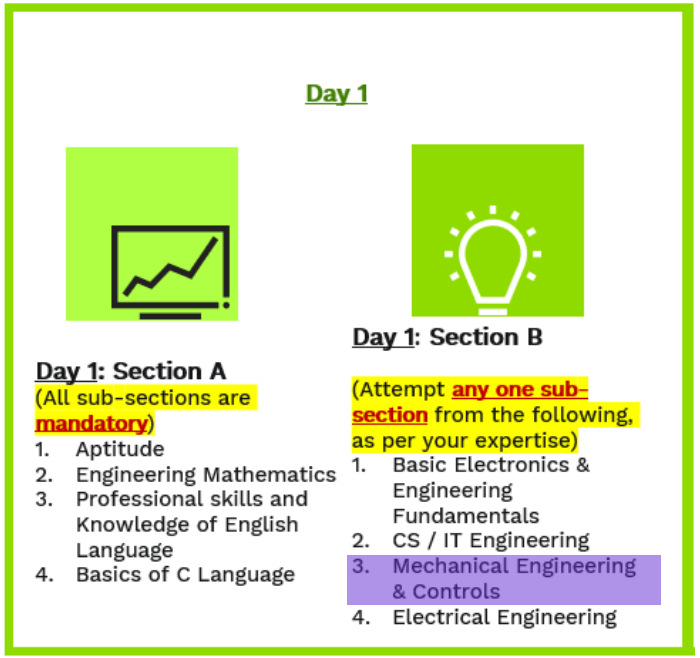
2. Wheelbase of a vehicle is the

**A. Distance between the centers of the front and rear wheels**

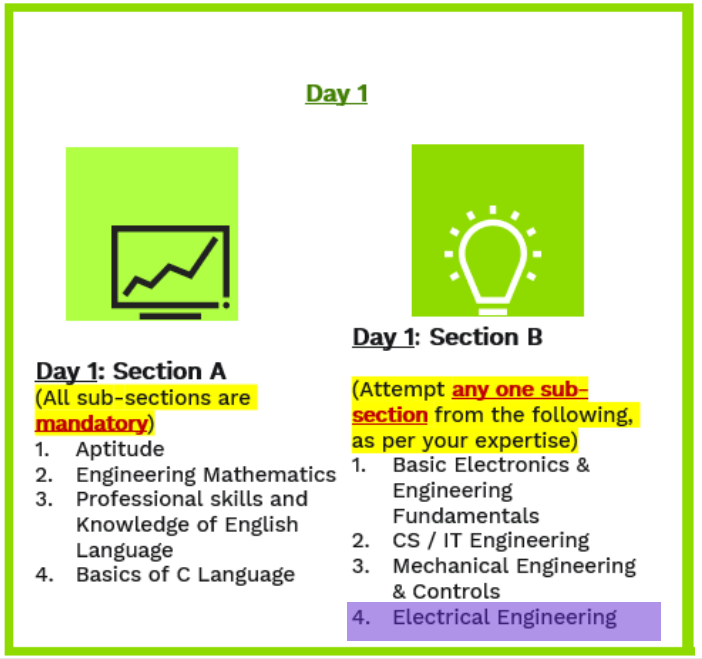
B. Distance between the centers of the front tyres

C. Distance between the centers of the rear tyres

D. Extreme length of the vehicle



# Electrical Engineering




You should expect Multiple Choice Questions on these topics / subjects.

CONSTRUCTION PRINCIPLES - MOTORS AND GENERATORS

POWER ELECTRONICS

CONTROL SYSTEMS

CIRCUIT THEORY

# Example Problem for Electrical Engineering

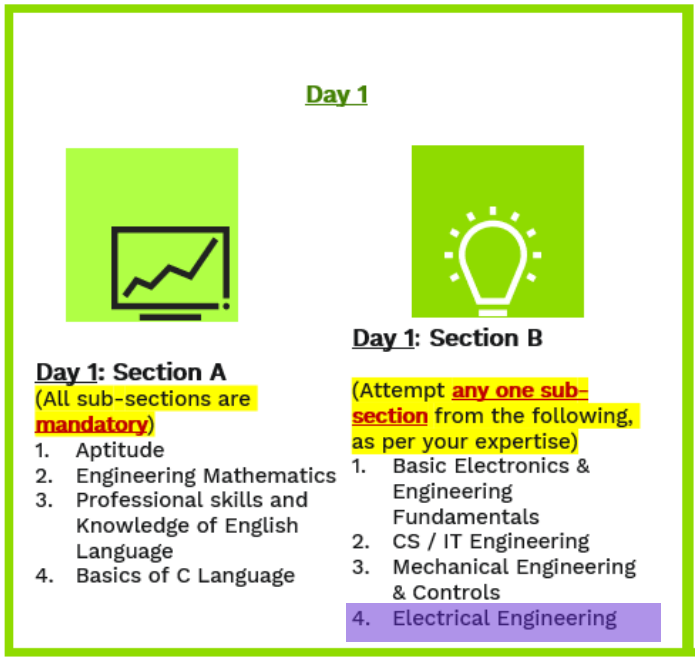
1. If the terminal voltage of 220 V dc generator having armature resistance of 1 Ω. The induced emf produced is 200 V. The armature current for the above machine is?

**A.** 20 A

B. -20 A

C. -10 A

D. 10 A



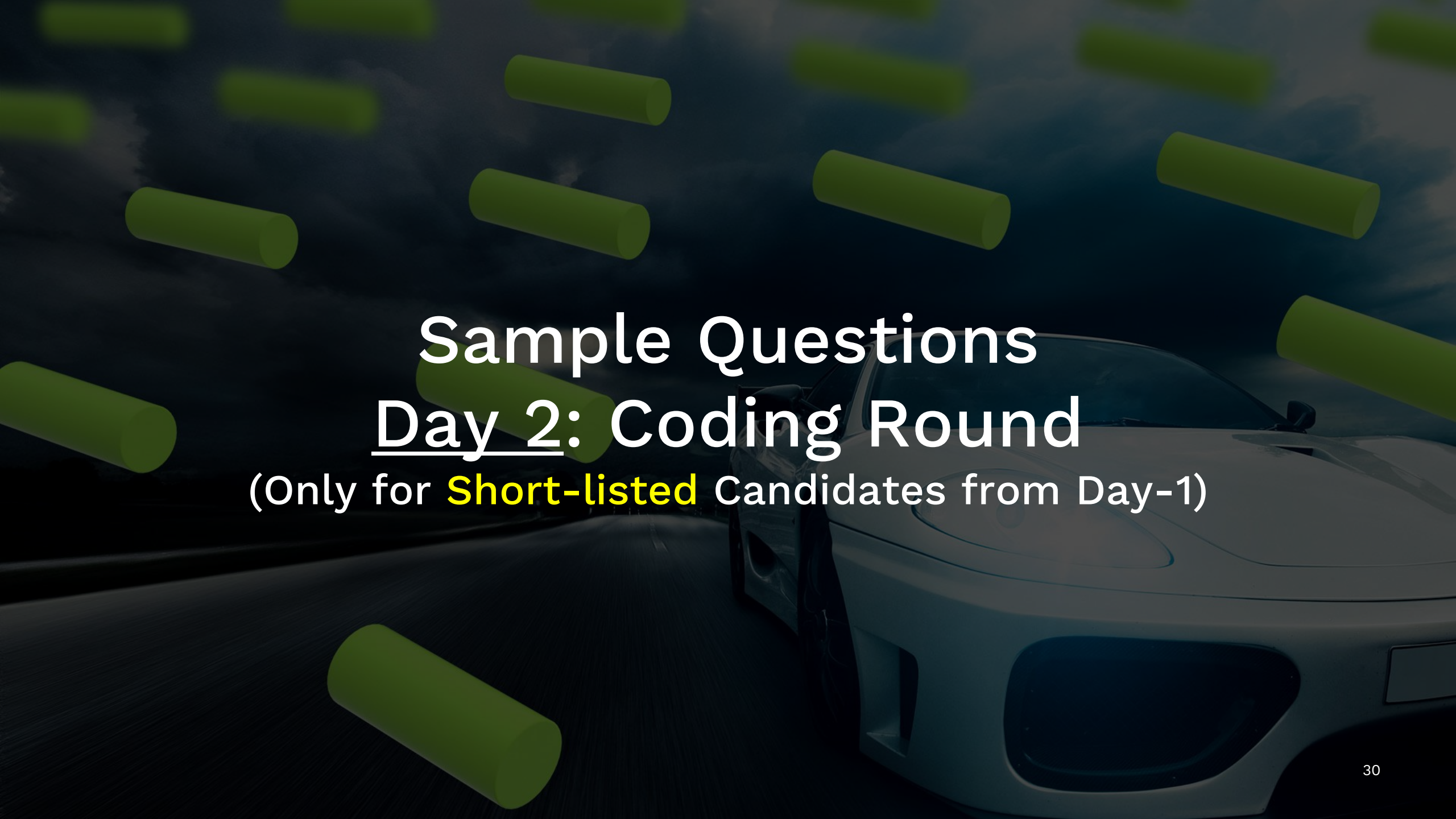

2. Kirchhoff's Current law is based on the law of conservation of

A. energy

B. momentum

C. mass

**D.** charge



# Sample Questions
# Day 2: Coding Round
(Only for Short-listed Candidates from Day-1)

# Test structure

**Day 1: 13 Sept 2021**
**(2.5 hours in total for both sections)**
**6:30 PM to 9:00 PM:** You are allowed to log into the test from 6:30 PM to 7:15 PM only

**Day 1: Section A**

1. Aptitude
2. Engineering Mathematics
3. Professional skills and Knowledge of English Language
4. Basics of C Language

**Day 1: Section B**

(Attempt any one sub-section from the following, as per your expertise)

1. Basic Electronics & Engineering Fundamentals
2. CS / IT Engineering
3. Mechanical Engineering & Controls
4. Electrical Engineering

Short-listed candidates

**Day 2: 16 Sept 2021**
**(3 hours)**
**6:30 PM to 9:30 PM:** You are allowed to log into the test from 6:30 PM to 7:15 PM only

Day 2: **Coding round**

Short-listed candidates

Short-listed candidates will be informed about the further process

# Example Problem 1 for Coding Round

## Identify the speed-optimized code out of the below code snippets.

Code snippet #1:

```c
#include <stdio.h>
int main(void)
{
int data[1000];
int x = 1, y = 5, c = 25, d = 7;
for (int i = 0; i < 1000; ++i) {
data[i] = (((c % d) * x / y) % d) * i;
}
return 0;
}
```

**Code snippet #2:**

```c
#include <stdio.h>
int main(void)
{
int data[1000];
int x = 1, y = 5, c = 25, d = 7;
int value = (((c % d) * x / y) % d);
for (int i = 0; i < 1000; ++i) {
data[i] = value * i;
}
return 0;
}
```

A. Code snippet #1 and code snippet 2 both leads to speed optimized code

B. Code snippet #1 leads to speed optimized code

C. Code snippet #2 leads to speed optimized code

D. Code snippet #1 and code snippet #2 will have same execution times in similar environment

# Example Problem 2 for Coding Round

**Predict the output of given code snippet?**

```
#include <iostream>
using namespace std;
int i;
class A
{
public:
~A()
{
i=10;
}
};
int foo()
{
i=3;
A ob;
return i;
}
int main()
{
cout << foo() << endl;
return 0;
}
};
```

A. 0

B. 3

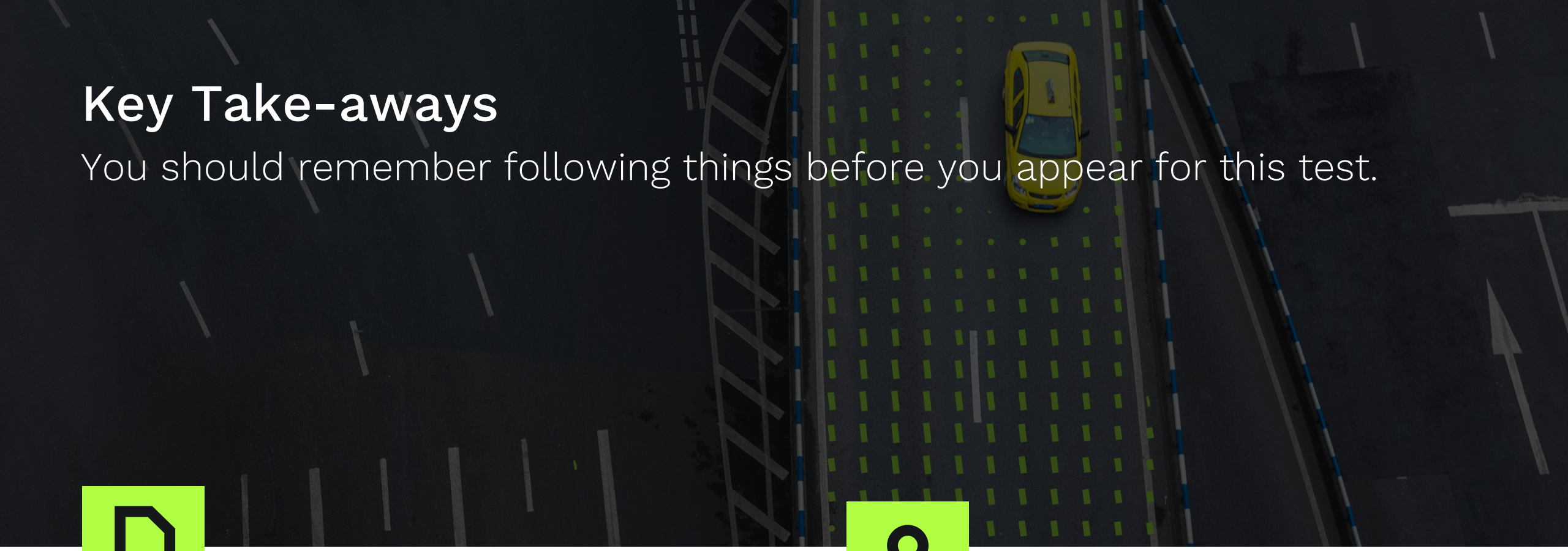
C. 10

D. None of the above

# Rules for the Test
(Very Important)

# How Should You Arrange Your Test Environment?

- Please ensure that your monitor / laptop is close to a wall, and **no one can stand behind the monitor**.
- **You will be asked to show the room anytime during the test. Hence …**
  - Ensure that no one else is in your room.
  - No digital device or textbook around you.
  - No mobile-phone or any video-casting device around you.
- Please have a high-resolution camera mounted on the monitor. **Do not change its position**.
- Do have rough-paper, pen and calculator with you (for calculations).
- No water-breaks / toilet-breaks are allowed. Do keep some water and snacks handy.
- **The test-platform shall automatically log you out if …**
  - Your complete face is not visible throughout the test.
    - You should be facing a light-source. Also, there should not be any light-source behind you.
  - Someone else is talking in the room or there is some noise in the room.
  - You are wearing tinted glasses or sun-glasses.
  - You are browsing any web-site.
  - You connect any additional monitor over VGA, HDMI or Bluetooth / Wi-Fi.



# Key Take-aways

You should remember following things before you appear for this test.

Keep your Aadhar card / Govt. ID handy to authenticate yourself.
It should be a non-laminated card.
Mobile-photos will not be allowed.

Test 1 is planned on 13 Sept 2021.

Those who qualify Day 1 will have Test 2 on 16 Sept 2021 (Day 2).

# Key Take-aways

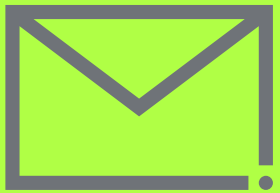
You should remember following things before you appear for this test.

Reliable and high-speed internet connection.

A High-Resolution camera so we can proctor your test.

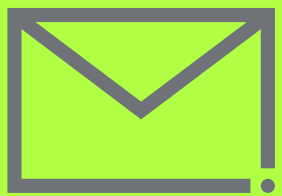
Dedicated time for the test duration and for the initial registration process.

# Further Process



After Day 1 test, we will share the list of shortlisted candidates for Day 2.
Similarly, after Day 2, we shall share the list of shortlisted candidates for the further process.
Final selected candidates shall be intimated on or before 30 Sep 21.

# Contact Details for this Process



**Campus Team, KPIT**
campus@kpit.com
Please do not communicate with anyone else.

KPIT does not charge any money from anyone for the Recruitment Process.

## Beware of Fraudsters !!!

In case of fraud, KPIT Legal / Campus Team will be unable to help you.

# All the best for this test !

# About the Assessment Platform

(Explanatory Video-link will be sent after Registration)

# Thank You