



hemanaac s &lt;naaccriteriaa12022@gmail.com&gt;

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**Fwd: Corps d'élite - The Top 300 students for Specialised Training**

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**Ms. N.VIJAYALAKSHMI, IQAC Coordinator & Head, Dept. of Computer Science, SIGC**

8 August 2023 at

&lt;vijayalakshmi@sigc.edu&gt;

15:57

To: "naaccriteriaa12022@gmail.com" &lt;naaccriteriaa12022@gmail.com&gt;

----- Forwarded message -----

From: **Aditya Sambamoorthy** <aditya@inlustro.co>

Date: Fri, Nov 19, 2021 at 6:14 PM

Subject: Corps d'élite - The Top 300 students for Specialised Training

To: CEO Sigc &lt;ceo@sigc.edu&gt;, Principal Sigc &lt;principal@sigc.edu&gt;, MS.VIJAYALAKSHMI N &lt;vijayalakshmi@sigc.edu&gt;, DR.PRABA V &lt;praba@sigc.edu&gt;

Cc: Jayaraman B &lt;jayaraman@inlustro.co&gt;, Deepa G &lt;deepa@inlustro.co&gt;

Respected Madam,

Thank you for having organized such a wonderful visit to Shrimati Indira Gandhi College. I really appreciate your hospitality and the time you allocated to discuss the way forward. It was an extremely productive session and I am writing this letter to encapsulate the key details of the conversation and attach the Student Evaluation form for conducting the student selection exercise.

1. We discussed that we will try to achieve optimum performance for this year in terms of placement by identifying 300 candidates in their final years from across all the departments for a communication boot camp that will empower them to get placed.

2. The boot camp will be conducted for a period of 5 weeks from the **5th of January, 2022 to the 14th of February, 2022. The boot camp will be held from 1:15-4:00 PM. From 1:15-2:15 PM, we will be having career-focused information sessions. From 2:15-4:00 PM, we will be conducting soft skills training workshops according to the following schedule**

> **Week 1 - Effective Communication in a Professional Setting - Communication 101**

> **Week 2 - Team building, Creativity and Innovation through a Project-Based Learning Model**

> **Week 3 - Developing your Personal Brand with a focus on developing a Growth Mindset**

> **Week 4 - Business Storytelling & Business Etiquettes**

> **Week 5 - Interview Centric Training and Resume Writing**

3. **In order to select students from the final years, we decided on a uniform evaluation process. Each mentor is assigned 20 students and from amongst them, 3 students have to be selected based on a student evaluation form attached along with this email. The form will be filled by the academic mentor. Section IV alone has to be counter verified and graded out of 5 points by members of the placement team who will be observing the interview process. We have attached two sets of question papers for the test mentioned in section III along with this email. The staff has to administer this test to their group of 20 students and evaluate the answers as per the answer key attached to this email. After getting the score out of 40, they are expected to convert it to out of 15 and enter that score in Section III of the evaluation sheet.**

4. At the end of each week in the boot camp, we will be asking our students to present their learnings through an in-class activity. We will also invite founders and HR executives from different companies to come in and take part in the workshop so as to create more opportunities for placement.

5. For each student who has been selected as part of the Corps d'élite, together, we will be profiling in detail their career interests and options so as to maximize their chances of placement, in line with their individual strengths. We will also be administering a survey to these students to better profile their interests.

Please feel free to add any further points that I may have missed out in this email. Also do go through the Student Evaluation sheet and the 2 sets of Screening Tests attached here to see if it is acceptable and let me know if we can go ahead.

Best Regards,  
Aditya Sambamoorthy  
Founder and CEO

**InLustro**

InLustro Learning Pvt Ltd

Contact At - +91-7338709583


LinkedIn Personal: <https://www.linkedin.com/in/aditya-sambamoorthy-56350045/>


LinkedIn InLustro: <https://www.linkedin.com/company/inlustro/>

InLustro Website: <https://inlustro.co/>

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**3 attachments**

 **Student Evaluation Form.pdf**  
271K

 **Inlustro Screening Test Set 1.pdf**  
647K

 **Inlustro Screening Test Set 2.pdf**  
671K



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**Fwd: UG & PG Syllabi for Computer Science oriented programmes and M.B.A in SIGC**

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**Ms. N.VIJAYALAKSHMI, IQAC Coordinator & Head, Dept. of Computer Science, SIGC**

8 August 2023 at

&lt;vijayalakshmi@sigc.edu&gt;

15:54

To: "naaccriteriaa12022@gmail.com" &lt;naaccriteriaa12022@gmail.com&gt;

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From: **MS.VIJAYALAKSHMI N** <vijayalakshmi@sigc.edu>

Date: Fri, Mar 12, 2021 at 11:55 AM

Subject: Re: UG &amp; PG Syllabi for Computer Science oriented programmes and M.B.A in SIGC

To: Aditya Sambamoorthy &lt;aditya@inlustro.co&gt;

Dear Sir,

In continuation of my previous mail, it would be convenient if you could send us a schedule of the dates on which classes will be held during March and April as many students are concerned regarding how all the 64 hours would be accommodated within the short span of time. Some of them who wish to join are yet to make a decision due to this reason. As the semester is coming to a close, and students may leave the college in a few months, they would like to know in advance about how long they will be attending the sessions as only one or two sessions are held per week. It will be helpful if you could kindly clarify this matter so that we could help the students to reap the benefits of the training program.

Thank you.

N.VIJAYALAKSHMI.

On Fri, Mar 12, 2021 at 11:28 AM MS.VIJAYALAKSHMI N &lt;vijayalakshmi@sigc.edu&gt; wrote:

Dear Sir,

Greetings of the day.

In response to your mail, it is hereby brought to your notice that totally 91 students have enrolled in the technical stream and 110 students have enrolled in the non-technical stream bringing the total head count to 201 as previously discussed and agreed in the previous discussions along with our CEO. The sessions shall be conveniently conducted from 3.30 p.m to 5.30 p.m. There are 37 participants from PG and 73 participants from UG in the management group. It is assured that all students will be attending the sessions further on and staff shall monitor their participation during the sessions.

Thanking you.

N.VIJAYALAKSHMI.

[Quoted text hidden]



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Thanking you.

N.VIJAYALAKSHMI.

On Wed, Mar 10, 2021 at 3:08 PM Aditya Sambamoorthy &lt;aditya@inlustro.co&gt; wrote:

Respected CEO and Principal,

I am writing this email with the intent of scheduling a meeting to streamline the rollout of the **Placement Crash Course for the final-year students**.

The sessions commenced last week and two classes have been conducted ever since. The classes are held on **Wednesdays and Fridays from 3:30 to 5:30 pm**. This timing was chosen after discussing it with the teaching staff of the college.

We had already indicated to the coordinating staff members -- Madam Vijayalakshmi and Madam Malathy -- that in order to scale down the price of the **crash course offering to Rs 500**, we require the participation of **at least 200 students** in the program on the whole - both technology and arts put together. Ideally, we would like to see 100 percent participation in this course from all final year students as it will strongly benefit their placement opportunities by empowering their candidacy with the requisite technical skill, managerial acumen, and corporate exposure.

There was a request to reschedule class timings on both Wednesday and Friday to suit student needs. This was communicated to us only an hour or so before the classes commenced. In spite of adjusting the timings to cater to the student requirements, we witnessed sub-optimal participation from the students with only 80 students attending the technical session and a mere 18-20 at best attending the non-technical sessions. Due to the absence of staff monitoring, it was also extremely difficult for us to keep track of the students - more so in the HR session wherein, there was extreme confusion. The WhatsApp group with the students was not created with the right set of students causing them to be removed from time to time, distorting communications.

I would like to initiate a meeting **at the earliest, before proceeding further** to set certain things in order so as to maximize the benefit for the students and minimize any irregularities or aberrations to facilitate smooth conduct of the sessions hereafter. Request the presence of the CEO, the Principal, the Vice-Principal, and other key staff members to reconcile the following issues

- Finalizing the timing of the sessions
- Ensuring consistent and expected level of student participation

- Vouchsafing staff monitoring to facilitate smooth conduct of these sessions

Seeking your understanding.

Best Regards,  
Aditya Sambamoorthy  
Founder and CEO  
InLustro Learning Pvt. Ltd.

On Fri, 26 Feb 2021 at 17:50, Nithya Venkatesan <nithya@inlustro.co> wrote:

Hello Ma'am

Greetings to you from InLustro!

We are writing this email to invite your students and faculty to a **statewide free-of-cost online data science Bootcamp**.

We are an Edutech firm (InLustro) that specialises in developing learning programs for college students aimed at preparing them for a successful career in today's competitive business landscape. We are partnering with a global nonprofit organisation **VizForSocialGood** (<https://www.vizforsocialgood.com/>) along with a couple of other corporates and colleges to organize this data science drive consisting of a **10-hour session spread over 5 days(2 hours each day)**. We will be covering the basics of different aspects of Data Science that will help create a career pathway for the students in this emerging data-powered economy.

#### Schedule for the event:

DATE	TIME	TOPIC
1-3-2021	7 PM - 9 PM IST	<b>Data Visualisation</b>
2-3-2021	7 PM - 9 PM IST	<b>Basics of AI/ML</b>
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4-3-2021	7 PM - 9 PM IST	<b>Deep Learning Part- 2</b>
5-3-2021	7 PM - 9 PM IST	<b>Reinforcement Learning</b>

Technologies Covered: **Scikit-learn, Tensorflow, Tableau**, and a few others.

This is an exclusive event wherein **participation is by invitation only**.

We are pleased to extend our invitation to the students and faculty of your esteemed institution.

For participating in the event kindly reach out to [support@inlustro.co](mailto:support@inlustro.co) with the list of names and contact details of the participants.

Event link, installation instructions and set up details for the boot camp will be shared through a subsequent email to the participants.

### **Why Data Science?**

>It's estimated that **over 1.5 lakh data science-based job openings will be generated in India within the next one year (2020-21)**

>70% of those openings will be aimed at freshers -just out of college with 0 yrs of work experience.

>However only 3% of our engineering graduates are qualified enough to take up the emerging job opportunity, leaving a majority of the vacancies unfilled.

### **Why this proposal now?**

>Given the current Covid situation with the majority of students working from home, a virtual event will have tremendous participation, thereby benefiting a large number of students.

>We will be bringing multiple corporate speakers working for top firms to address the students in the workshop, giving them industrial exposure and an excellent networking opportunity.

>We will be certifying students participating in our hands-on training session and have planned an exhaustive syllabus that will qualify students for beginner level job openings in Data Science. This upskilling event will have an **unprecedented impact on graduate employability creating over 1 lakh job opportunities for our graduates with an average salary of 7 lakhs per annum.**

### **Who are we?**

We are an ed-tech firm (InLustro) that collaborates with colleges to institute a customized and holistic learning program that trains students in the latest technological frameworks, while simultaneously exposing them to real-life problems through internships and other hands-on opportunities and equipping them with an array of people skills to embellish their portfolio.

We have over 300 students on our platform and have been running the program successfully for the past year **generating over 192 internship opportunities(within India and abroad), a 96% program placement rate, 20+ latest technology platforms, and multiple industry networking sessions. Under our tutelage, our students were selected for the nationwide CAWACH initiative as well.**

**Our website link: <https://www.inlustro.co>**

Please find attached the link for registration

Thanks,

Nithya V  
Business Development Executive  
Team Strategic Partnerships  
InLustro

On Tue, 23 Feb 2021 at 14:36, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:  
Respected Madam,

I am enclosing the link for the diagnostic test for the Tech group and the Non-Tech Group below. The tests will be common for both the basic and the advanced tracks - as a way of assessing their capabilities.

Tech Group:  
<https://www.surveymonkey.com/r/PM5Q8XR>

Non-Tech:  
<https://www.surveymonkey.com/r/PHLG5X8>

The test is completely online and just requires a smartphone with internet connectivity to complete. Kindly help with circulating the link to the students. Ask them to attend the test either today or tomorrow so that we can start classes from Thursday onwards.

Best Regards,  
Aditya Sambamoorthy  
Founder and CEO  
InLustro Learning Pvt. Ltd.

On Thu, 18 Feb 2021 at 15:53, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:  
Respected CEO Sir, Principal ma'am and NV ma'am,

Along with this email, I am enclosing the detailed PPT and flyer for the crash course program that we have planned for Smt. Indira Gandhi college to train the final year for placements.

Best Regards,  
Aditya Sambamoorthy  
Founder and CEO  
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On Wed, 6 Jan 2021 at 13:01, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:  
Respected Madam,

Thank you for your time. It was a pleasure talking to you.

We are confident that we can nurture a fruitful synergy with Shrimati Indira Gandhi College to benefit the students and to empower them to ride out the wave of disruptive innovation.

I am attaching the slides presented during our discussion for your reference.

Looking forward to hearing from you and taking this proposal forward.

Best Regards,  
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On Wed, 6 Jan 2021 at 12:06, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:  
Respected Madam,

Kindly join this link : <https://us02web.zoom.us/j/8079641160>

Best regards,  
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On Mon, 4 Jan 2021 at 17:56, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:  
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Cc: Niwin Santhosh &lt;niwin@inlustro.co&gt;, Nithya Venkatesan &lt;nithya@inlustro.co&gt;, DR.PRABA V &lt;praba@sigc.edu&gt;, MS.VIJAYALAKSHMI N &lt;vijayalakshmi@sigc.edu&gt;, Harshita Chaudhary &lt;harshita.colpal@gmail.com&gt;

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**Fwd: Report**

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From: **Aditya Sambamoorthy** <aditya@inlustro.co>

Date: Thu, 27 Jan, 2022, 9:31 PM

Subject: Fwd: Report

To: CEO Sigc &lt;ceo@sigc.edu&gt;, Principal Sigc &lt;principal@sigc.edu&gt;

Cc: DR.PRABA V &lt;praba@sigc.edu&gt;, Deepa G &lt;deepa@inlustro.co&gt;, MS.VIJAYALAKSHMI N &lt;vijayalakshmi@sigc.edu&gt;

Respected CEO and Principal,

Attached along with this email is a detailed report about the Corps d'elite Communication Bootcamp conducted for the students identified by our Screening Tool.

Looking forward to hearing from you soon and taking this collaboration to the next level by instituting the REAL initiative for years 1,2 and 3 for the upcoming batches to instil a robust communication framework in the students, as discussed with the academic team at IG earlier last year.

Kind Regards,  
Aditya Sambamoorthy

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 **Training Evaluation Report.pdf**  
156K



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Subject: Re: UG &amp; PG Syllabi for Computer Science oriented programmes and M.B.A in SIGC

To: CEO Sigc &lt;ceo@sigc.edu&gt;

Cc: DR.PRABA V &lt;praba@sigc.edu&gt;, Deepa G &lt;deepa@inlustro.co&gt;, Harshita Chaudhary &lt;harshita.colpal@gmail.com&gt;, MS.VIJAYALAKSHMI N &lt;vijayalakshmi@sigc.edu&gt;, Niwin Santhosh &lt;niwin@inlustro.co&gt;, Principal Sigc &lt;principal@sigc.edu&gt;

Respected Sir,

We at InLustro Learning Pvt. Ltd. are writing this email to you with reference to our earlier meeting last week regarding the results of our crash course program.

Attached with this email are 3 documents :

1. An answer booklet containing the detailed explanations and solutions for all the tests administered to the students during our course.
2. A PDF document titled "All Results" containing the marks of each test, the subject-wise average, and individual performance feedback along with identified areas of improvement for each candidate.
3. A PDF document titled "Top 30 Students" containing the performance records of the top 30 students who have been shortlisted for finer training and potential placement assistance.

Looking forward to having a more detailed discussion about the results and the way forward for the shortlisted candidates later this week on Thursday.

Best regards,  
Aditya Sambamoorthy  
Founder and CEO  
InLustro Learning Pvt. Ltd.

On Thu, 1 Apr 2021 at 16:49, Aditya Sambamoorthy <aditya@inlustro.co> wrote:

Respected CEO,

Thank you for the response.

I completely understand. Classes are going on smoothly now.

It's only natural that there are such issues in the beginning. We are confident that with the support of the management and the staff, such issues can be quickly remedied.

I am glad to share that the students are doing well. Thank you for giving us the opportunity.

I'm also confident that we can soon rollout the program to all the students as we had discussed earlier. Looking forward to meeting you in person and planning the detailed roll out plan for the entire institution.

Best Regards,  
Aditya Sambamoorthy  
Founder and CEO  
Inlustro Learning Pvt. Ltd

On Thu, 1 Apr 2021 at 11:45 AM, <[ceo@sigc.edu](mailto:ceo@sigc.edu)> wrote:

Dear Mr. Aditya,

March was a hectic month for us due to year end accounts closing.

Regarding the challenges you have listed – we understand sincerely apologize for any inconvenience.

Requesting Respected Principal Maam and team to plan better, to ensure such issues are prevented in the future.

It will be good to meet with Mr. Aditya in person sometime in late April or early May timeframe to discuss career tree mapping for both college as well as schools. Thank you.

Regards,

K. Chandrasekharan

CEO – Chief Executive Officer

National College Council

Shrimati Indira Gandhi College

National College Higher Secondary School

Sri Jayendra Matriculation Higher Secondary School

Santhanam Vidhyalaya

---

**From:** Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)>

**Sent:** 31 March 2021 13:30

**To:** Principal Sigc <[principal@sigc.edu](mailto:principal@sigc.edu)>; CEO Sigc <[ceo@sigc.edu](mailto:ceo@sigc.edu)>

**Cc:** Niwin Santhosh <[niwin@inlustro.co](mailto:niwin@inlustro.co)>; DR.PRABA V <[praba@sigc.edu](mailto:praba@sigc.edu)>; MS.VIJAYALAKSHMI N <[vijayalakshmi@sigc.edu](mailto:vijayalakshmi@sigc.edu)>; Harshita Chaudhary <[harshita.colpal@gmail.com](mailto:harshita.colpal@gmail.com)>; Deepa G <[deepa@inlustro.co](mailto:deepa@inlustro.co)>

**Subject:** Re: UG & PG Syllabi for Computer Science oriented programmes and M.B.A in SIGC

++ Adding our new Business Development Executive Deepa to this email chain.



On Wed, 10 Mar 2021 at 15:08, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:

Respected CEO and Principal,

I am writing this email with the intent of scheduling a meeting to streamline the rollout of the **Placement Crash Course for the final-year students**.

The sessions commenced last week and two classes have been conducted ever since. The classes are held on **Wednesdays and Fridays from 3:30 to 5:30 pm**. This timing was chosen after discussing it with the teaching staff of the college.

We had already indicated to the coordinating staff members -- Madam Vijayalakshmi and Madam Malathy -- that in order to scale down the price of the **crash course offering to Rs 500**, we require the participation of **at least 200 students** in the program on the whole - both technology and arts put together. Ideally, we would like to see 100 percent participation in this course from all final year students as it will strongly benefit their placement opportunities by empowering their candidacy with the requisite technical skill, managerial acumen, and corporate exposure.

There was a request to reschedule class timings on both Wednesday and Friday to suit student needs. This was communicated to us only an hour or so before the classes commenced. In spite of adjusting the timings to cater to the student requirements, we witnessed sub-optimal participation from the students with only 80 students attending the technical session and a mere 18-20 at best attending the non-technical sessions. Due to the absence of staff monitoring, it was also extremely difficult for us to keep track of the students - more so in the HR session wherein, there was extreme confusion. The WhatsApp group with the students was not created with the right set of students causing them to be removed from time to time, distorting communications.

I would like to initiate a meeting **at the earliest, before proceeding further** to set certain things in order so as to maximize the benefit for the students and minimize any irregularities or aberrations to facilitate smooth conduct of the sessions hereafter. Request the presence of the CEO, the Principal, the Vice-Principal, and other key staff members to reconcile the following issues

- Finalizing the timing of the sessions
- Ensuring consistent and expected level of student participation
- Vouchsafing staff monitoring to facilitate smooth conduct of these sessions

Seeking your understanding.

Best Regards,

Aditya Sambamoorthy

Founder and CEO

InLustro Learning Pvt. Ltd.

On Fri, 26 Feb 2021 at 17:50, Nithya Venkatesan <[nithya@inlustro.co](mailto:nithya@inlustro.co)> wrote:

Hello Ma'am

Greetings to you from InLustro!

We are writing this email to invite your students and faculty to a **statewide free-of-cost online data science Bootcamp**.

We are an Edutech firm (InLustro) that specialises in developing learning programs for college students aimed at preparing them for a successful career in today's competitive business landscape. We are partnering with a global nonprofit organisation **VizForSocialGood** (<https://www.vizforsocialgood.com/>) along with a couple of other corporates and colleges to organize this data science drive consisting of a **10-hour session spread over 5 days(2 hours each day)**. We will be covering the basics of different aspects of Data Science that will help create a career pathway for the students in this emerging data-powered economy.

**Schedule for the event:**

DATE	TIME	TOPIC
1-3-2021	7 PM - 9 PM IST	<b>Data Visualisation</b>
2-3-2021	7 PM - 9 PM IST	<b>Basics of AI/ML</b>
3-3-2021	7 PM - 9 PM IST	<b>Deep Learning Part- 1</b>
4-3-2021	7 PM - 9 PM IST	<b>Deep Learning Part- 2</b>
5-3-2021	7 PM - 9 PM IST	<b>Reinforcement Learning</b>

Technologies Covered: **Scikit-learn, Tensorflow, Tableau**, and a few others.

This is an exclusive event wherein **participation is by invitation only**.

We are pleased to extend our invitation to the students and faculty of your esteemed institution.

For participating in the event kindly reach out to [support@inlustro.co](mailto:support@inlustro.co) with the list of names and contact details of the participants.

Event link, installation instructions and set up details for the boot camp will be shared through a subsequent email to the participants.

### **Why Data Science?**

>It's estimated that **over 1.5 lakh data science-based job openings will be generated in India within the next one year (2020-21)**

>70% of those openings will be aimed at freshers -just out of college with 0 yrs of work experience.

>However only 3% of our engineering graduates are qualified enough to take up the emerging job opportunity, leaving a majority of the vacancies unfilled.

### **Why this proposal now?**

>Given the current Covid situation with the majority of students working from home, a virtual event will have tremendous participation, thereby benefiting a large number of students.

>We will be bringing multiple corporate speakers working for top firms to address the students in the workshop, giving them industrial exposure and an excellent networking opportunity.

>We will be certifying students participating in our hands-on training session and have planned an exhaustive syllabus that will qualify students for beginner level job openings in Data Science. This upskilling event will have an **unprecedented impact on graduate employability creating over 1 lakh job opportunities for our graduates with an average salary of 7 lakhs per annum**.

### **Who are we?**

We are an ed-tech firm (InLustro) that collaborates with colleges to institute a customized and holistic learning program that trains students in the latest technological frameworks, while simultaneously exposing them to real-life problems through internships and other hands-on opportunities and equipping them with an array of people skills to embellish their portfolio.

We have over 300 students on our platform and have been running the program successfully for the past year **generating over 192 internship opportunities(within India and abroad), a 96% program placement rate, 20+ latest technology platforms, and multiple industry networking sessions. Under our tutelage, our students were selected for the nationwide CAWACH initiative as well.**

Our website link: <https://www.inlustro.co>

Please find attached the link for registration

Thanks,

Nithya V

Business Development Executive

Team Strategic Partnerships

InLustro

On Tue, 23 Feb 2021 at 14:36, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:

Respected Madam,

I am enclosing the link for the diagnostic test for the Tech group and the Non-Tech Group below. The tests will be common for both the basic and the advanced tracks - as a way of assessing their capabilities.

Tech Group:

<https://www.surveymonkey.com/r/PM5Q8XR>

Non-Tech:

<https://www.surveymonkey.com/r/PHLG5X8>

The test is completely online and just requires a smartphone with internet connectivity to complete. Kindly help with circulating the link to the students. Ask them to attend the test either today or tomorrow so that we can start classes from Thursday onwards.

Best Regards,

Aditya Sambamoorthy

Founder and CEO

InLustro Learning Pvt. Ltd.

On Thu, 18 Feb 2021 at 15:53, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:

Respected CEO Sir, Principal ma'am and NV ma'am,

Along with this email, I am enclosing the detailed PPT and flyer for the crash course program that we have planned for Smt. Indira Gandhi college to train the final year for placements.

Best Regards,

Aditya Sambamoorthy

Founder and CEO

InLustro Learning Private Ltd.

On Wed, 6 Jan 2021 at 13:01, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:

Respected Madam,

Thank you for your time. It was a pleasure talking to you.

We are confident that we can nurture a fruitful synergy with Shrimati Indira Gandhi College to benefit the students and to empower them to ride out the wave of disruptive innovation.

I am attaching the slides presented during our discussion for your reference.

Looking forward to hearing from you and taking this proposal forward.

Best Regards,

Aditya Sambamoorthy

Founder and Director

InLustro

On Wed, 6 Jan 2021 at 12:06, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:

Respected Madam,

Kindly join this link : <https://us02web.zoom.us/j/8079641160>

Best regards,  
Aditya Sambamoorthy  
Founder and Director  
InLustro

On Mon, 4 Jan 2021 at 17:56, Aditya Sambamoorthy <[aditya@inlustro.co](mailto:aditya@inlustro.co)> wrote:

Respected Madam,

Thank you for the details. I will go through them and get back to you on Wednesday at 11 AM with our proposal for the topics and the learning schedule. I will share a zoom invite for the call as we near the appointed date and time.

Best Regards,  
Aditya Sambamoorthy  
Founder and Director  
InLustro

On Mon, 4 Jan 2021 at 14:47, MS.VIJAYALAKSHMI N <[vijayalakshmi@sigc.edu](mailto:vijayalakshmi@sigc.edu)> wrote:

Dear Aditya,

In continuation of our discussion, I have attached the required syllabus.

Looking forward to hearing from you.

Thank you.

---

### 3 attachments



**All Results.pdf**  
72K



**Top 30 Students.pdf**  
60K



**solutions to the crash course.pdf**  
2053K

# TRAINING EVALUATION REPORT

## **Executive Summary**

The main purpose of this evaluation report is to assess the effectiveness of the sessions carried out for students of Srimati Indira Gandhi college. This report provides an insight about programme objectives, activities facilitated, assessment methods and overview of the evaluation objectives. Overall, the students and the mentors informed that the programme was well received and rated the experience as good.

While examining the evaluation process, learner engagement, response, transferring of knowledge needed some improvements to achieve objectives in a better way. It is referring to the designing of programme plan, methods of delivery, different kinds of assessment etc., Therefore, recommendations for further actions are as follows:

- To modify the current training material to ensure that clear and specific objectives are met.
- Create a yearly planner with realistic manageable goals by identifying the audience needs.
- Activities and resources have to be reframed or refined based on the learners current KSA.
- Follow-up support is essential throughout the training process.

## **Learning outcomes achieved**

- Able to frame simple day-day conversations
- Learners understand different elements of an email.
- Able to understand the importance of subject and to differentiate between formal and informal way of email communication.
- Able to write simple emails.
- Able to deliver short speeches.
- Able to design slides with effective visuals with simple content.
- Able to answer commonly asked interview questions and know how to respond in a right way.

## **Learner Engagement**

- Rewards in the form of certificates enhanced learner engagement
- This created a learning spirit & they were motivated and inspired to participate in discussions.
- The active participation of many learners in speech and presentations influenced other learners to come forward in giving their speech.
- Used real-life scenarios to engage them in the learning process.
- Learner engagement soared up at the time presenting a speech.



## Observation

- Chosen simple content to facilitate the learning process easier.
- Applied VAK learning styles to streamline the learning process.
- Applied active learning methods that supported the learners to conceptualize the materials to understand and to re-call it.
- Data evaluation is gathered through presentations, JAM topics, day-day interactions, class tests and by mock interviews.

## Gap Identification

- Learners need in-depth knowledge in rudimentary level of English.
- Majority of learners finds it hard to communicate in the English language.
- Time spent on each topic could be extended.
- It would be ideal to have a batch size of 30-35 participants.

## Challenges

- Poor bandwidth issues
- Batch size
- Communication gap
- Time duration

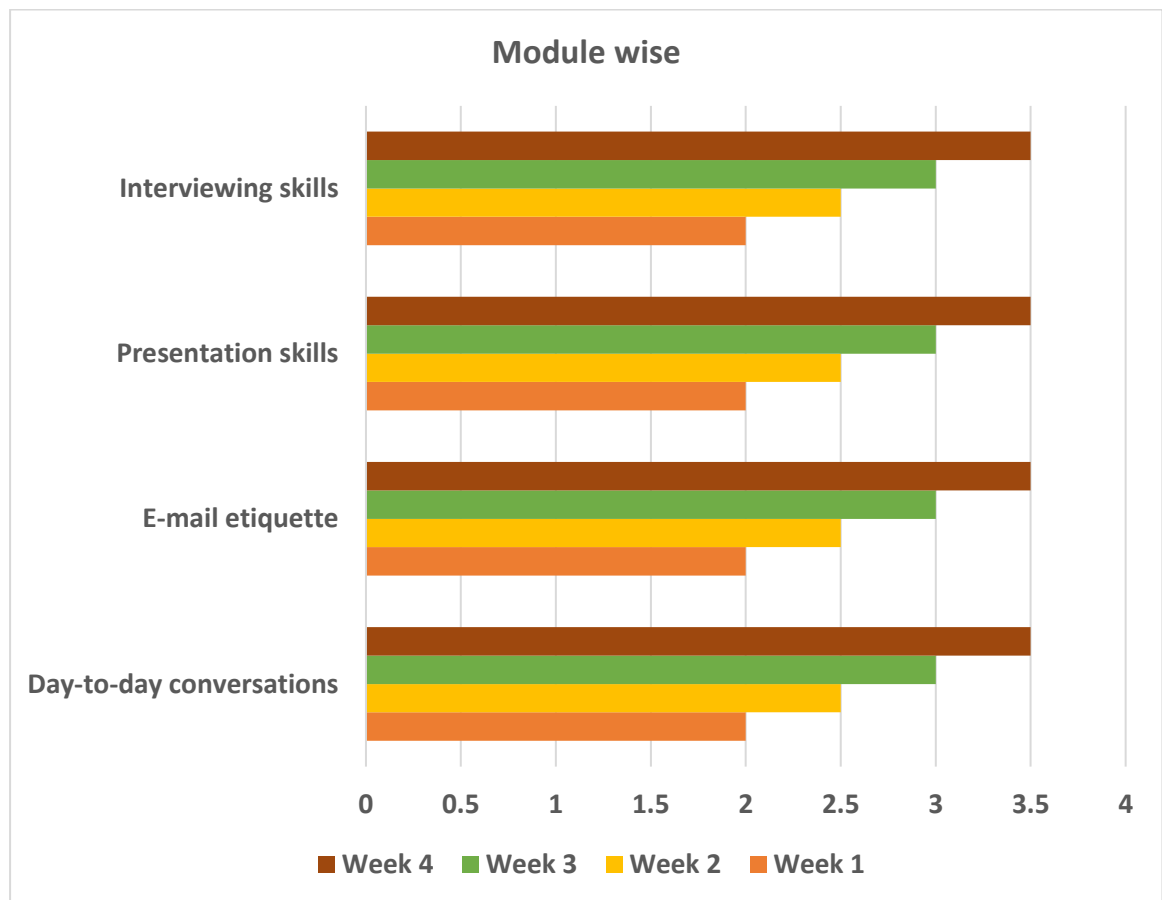
## Biggest Impact

- **Mercy Enrose** – I remember this learner due to her extensive participation and her way of applying the learning would be quicker. While delivering the speech, she was one of the learners who followed all the tips and strategies of structuring a presentation. She has shown utmost participation with correct answers.
- **Lakshmipriya** - A learner who takes part in almost all the activities and who brings the entire group to participate due to her influence. She is a learner who applied whatever that has been given in the participant handout and quickly apply whatever she has learnt like Mercy.
- **Samyuktha** – Any classroom discussion gets motivated due to her presence. She is an active participant who comes forward very quickly in presenting it in a right way. She supports and helps her peers in delivering their speech and spread positive vibes in the class. It becomes interesting and encouraging with her presence that evokes critical thoughts in everyone. She becomes an observer to the class and shares effective feedback about the students sometimes.
- **Mahesh Pasumai** – This learner is highly curious to learn and shares her answers for almost all discussions. I remember her because though she has

challenges in communicating in English, but confidently she comes forward in presenting her views without any hesitation.

- **Srinithi Ravichandran** – I remember her for good work in presentation skills in designing slides, She was able to apply all the techniques that's has been discussed during the class hours. She is an enthusiastic learner who is interactive and studious in engaging conversations.

## Tangible outcome



## Performance Analysis:

- **Learner engagement:** The learners found the content & materials to be engaging, useful and favourable that stimulated learning process and it was actually matching their needs to find relevant jobs.
- **Learning outcomes:** This was clearly identified with direct and indirect ways of assessing them through oral-discussions, in small group activities, a questionnaire to assess their obtained knowledge, skills and attitudes.
- **Behaviour:** Assessing behavioural changes would be challenging as acquiring knowledge can be measured quickly however these changes have to applied in the workplace lies the biggest challenge.

## Follow-up

To further enhance this programme, the following modules can be implemented to improve students' skill development and the continuous process of learning help them to face the interviews in an effective manner and to raise the bar as per the employers' requirements. Therefore, in view of the above, we are providing a long-term soft skills course with our R.E.A.L programme as discussed with you over the conversation for the UG and PG students.



### Year 1 (For UG)

#### **Grammar & Soft skills**

- Foundation of Grammar
- Essentials of Communication skills
- Impromptu speaking
- Johari window
- Personality Development

### Year 2

- Presentation skills
- Designing slides
- Virtual meetings
- Problem solving skills
- Are Soft skills important?

### Year 3

- Resume Readiness
- Interviewing skills
- E-mail Etiquette
- Business Etiquette
- Cross-cultural communication

## Year 1 (For PG)

### **Grammar & Soft skills**

- A guide to cover the basics & intermediate grammar
- Refine your Communication Skills
- Cross-cultural communication
- Presentation skills
- Time Management skills
- Designing slides

## Year 2

- Presentation skills
- Virtual meetings
- Are Soft skills important?
- Resume building
- Campus to Corporate
- Teamwork

# Student Evaluation Form

## Section I

Rate the student on a scale of 1 to 5 with 5 being the highest on the following parameters (Add 1 point for Agree and 2 points for Strongly Agree and 0 points for the rest for each question):

1. Does the student exhibit a clear understanding of the core concepts of his/her academic discipline?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. Does the student showcase a strong academic performance in his/her course work (Tests, Examinations, etc)?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. Does the student show a strong willingness to learn and grasp new concepts?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. Does the student have good communication skills?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

---

5. Does the student have a good attitude coupled with good behavior?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. Does the student show a keen awareness of the industry/role in which he/she wishes to be placed?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. Does the student regularly attend classes at the institution?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. Does the student strongly aspire for a job after graduation?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. Does the student have strong involvement and support from their parents with regard to pursuing a career after graduation?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

---

10. Does the student demonstrate strong reading, writing, and logical thinking skills?

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

**Total Section Score**

## **Section II**

Please answer Yes or No for the following questions.

**(Add 1 point for every Yes and 0 for No)**

1. Does the student come from an educated family background?

Yes	No
-----	----

2. Has the student participated in any industry conference/internship/workshop?

Yes	No
-----	----

3. Does the student exhibit good interpersonal interaction skills?

Yes	No
-----	----

4. Does the student follow directions/instructions sincerely?

Yes	No
-----	----

---

5. Does the student complete assignments/deliverables on time?

Yes	No
-----	----

6. Does the student have a strong preconceived notion in terms of the job role or salary expectations?

Yes	No
-----	----

7. Can the student make alternate travel arrangements in case they have to stay back for training?

Yes	No
-----	----

8. Can the student assure 100% attendance during the training period (Jan-Feb 2022)?

Yes	No
-----	----

9. Does the student remain attentive and participative during class hours?

Yes	No
-----	----

10. In case of an extraneous circumstance wherein the student is unable to attend the training at the college campus, will they be able to attend it from home? (Do they have sufficient data on their mobile phones or a strong internet connection at home?)

Yes	No
-----	----



---

**Total Section Score**

**Section III**

1. What is the student's score on the screening test?  
(Convert the score to a scale of 15)

**Total Section Score**

**Section IV**

This section is to be filled only if the staff feels that the candidate strongly deserves to be a part of the **corps d'élite** (Pronounced as kor-dae-leet).

1. Elucidate the core strengths of the candidate while explaining why he/she deserves to be a part of **corps d'élite**. (To be evaluated from 1 to 5, 5 being the highest)  
(The answer has to be filled by the evaluator but has to be scored by the placement officers.)

---

2. Discuss the potential areas of improvement for the candidate with specific reference to their soft skills/attitude. **(No points need to be deducted)**

**Total Section Score**

---

## Score Calculation

Calculate the total scores for the candidate by adding individual sectional scores of sections I, II, III, and IV.

**Total Score**

The candidate is to be selected by the staff for **corps d'élite** if they score amongst the top 15% (**Top 3**) of their 20 member group.

InLustro  
Screening Test  
Set 1

For each question, indicate the best answer using the directions given. If a question has answer choices with ovals, then the correct answer consists of a single choice. If a question has answer choices with square boxes, then the correct answer consists of one or more answer choices. Read the directions for each question carefully.

**Text Completion:** For each blank, select one entry from the corresponding column of choices. Fill all blanks in the way that best completes the text.

1

Although I felt confident that my mathematical abilities would give me an edge in Vegas, having tried my hand at gambling, I now realize I am a bit of a \_\_\_\_\_.

malcontent
tyro
bourgeois
teetotaler
masochist

2

His \_\_\_\_\_ approach to the sport was copied by competitors and quickly became the standard method.

dangerous
lax
rehashed
novel
ineffective

3

The museum's collection is vast and (i) \_\_\_\_\_, covering thousands of years of worldwide art history; thus, to (ii) \_\_\_\_\_ it, it would take several days at least.

Blank (i)

lofty
painstaking
comprehensive

Blank (ii)

scrutinize
undertake
appreciate

4

The famous story that H.G. Wells' *War of the Worlds* caused panic in the streets is (i) \_\_\_\_\_; instead of running in fear, many listeners were simply (ii) \_\_\_\_\_ by the storytelling, staying inside in order to not miss a single moment of it.

Blank (i)

apocryphal
salubrious
arcane

Blank (ii)

harrowed
perused
riveted

5

The (i) \_\_\_\_\_ cat refused to walk around tamely on a leash, but the (ii) \_\_\_\_\_ dog not only heeled, but obeyed each of its master's commands obediently and never needed to be (iii) \_\_\_\_\_ for not listening.

Blank (i)

pernicious
recalcitrant
credulous

Blank (ii)

prodigal
complaisant
insipid

Blank (iii)

countenanced
impeded
admonished

6

George decided to (i) \_\_\_\_\_ eating red meat to reduce his high cholesterol, as he had been told by his doctor that his current diet was (ii) \_\_\_\_\_ to his overall health; it was a difficult lifestyle change, as he had a(n) (iii) \_\_\_\_\_ for hamburgers.

Blank (i)

impugn
cease
bolster

Blank (ii)

deleterious
volatile
disparate

Blank (iii)

anachronism
predilection
abeyance

Questions 7–9 are based on the following passage.

<sup>1</sup> During photosynthesis, plants convert carbon dioxide and water into oxygen and glucose, a sugar used for energy storage. <sup>2</sup> Each carbon dioxide molecule is broken into oxygen gas and a carbon atom, which, with other carbon atoms, is used to generate glucose in a process called “carbon fixation.” <sup>3</sup> There are a few different carbon-fixation pathways plants can take.

<sup>4</sup> The C3 pathway, named for a three-carbon molecule produced during the process, is most common.

<sup>5</sup> Certain plants have evolved and can use a C4 pathway instead of a C3 pathway when it is more efficient to do so. <sup>6</sup> The C4 pathway results in the saturation of a particular enzyme, RuBisCo, with carbon dioxide.

<sup>7</sup> RuBisCo’s job is to fix carbon, and when saturated with raw materials, it can perform more efficiently.

<sup>8</sup> CAM plants have evolved a different method of making photosynthesis more efficient. <sup>9</sup> These plants do not alter the saturation of carbon dioxide around RuBisCo. <sup>10</sup> Instead, they change the way in which they collect the raw ingredients of photosynthesis from the environment. <sup>11</sup> Plant leaves contain “stomata,” openings through which carbon dioxide is collected, but through which water can also be lost. <sup>12</sup> CAM plants close openings in their stomata during the day and open them at night. <sup>13</sup> This prevents water from evaporating out of their stomata during the day and is a useful adaptation in hot, arid environments.

<sup>14</sup> You may be wondering: don’t CAM plants need carbon dioxide and sunlight at the same time to photosynthesize? <sup>15</sup> They do, and this has a dramatic effect on when they photosynthesize. <sup>16</sup> The reactions involved in photosynthesis fall into two categories: the “light” reactions require light, and the “light-independent” or “dark” reactions do not. <sup>17</sup> At night, CAM plants do not completely photosynthesize anything; they collect carbon dioxide, perform the light-independent part of the process, and wait. <sup>18</sup> In the daytime, they perform the light-dependent reactions and use the available sunlight and the carbon dioxide they collected at night to generate glucose and oxygen.

7

Which of the following is implied by the underlined sentence?

- A. Any plant that can use a C4 pathway can use a C3 pathway.
- B. Any plant that can use a C3 pathway can use a C4 pathway.
- C. Only C4 plants contain RuBisCo.
- D. Only C3 plants contain RuBisCo.

8

C4 plants are similar to CAM plants in that \_\_\_\_\_, but different in that \_\_\_\_\_.

- A. they have both evolved to increase photosynthetic efficiency by saturating RuBisCo with carbon dioxide . . . they gather that carbon dioxide at different times of day
- B. they both close their stomata during the day . . . CAM plants perform only the light-dependent photosynthetic reactions during the day whereas C4 plants perform only the light-independent reactions during the day
- C. they are both well suited to arid environments . . . C4 plants use RuBisCo, but CAM plants lack RuBisCo
- D. they both use evolutionary adaptations to perform photosynthesis more efficiently . . . they use different mechanisms to do so

9

You're talking to a friend about what you learned in the passage when your friend says, "But isn't photosynthesis just one cycle? Why would it function differently in the day than at night?" Which sentence most directly answers your friend's questions?

---

**Sentence Equivalence:** Select the two answer choices that, when used to complete the sentence, fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.

---

10

The musician's attempts to brighten the mood continually failed, as all his songs sounded like \_\_\_\_\_.

- encomiums
- dirges
- waltzes
- jigs
- laments
- threnodies

11

With a handlebar mustache and a loping walk, the reenactor \_\_\_\_\_ the look of a nineteenth-century baseball player; he seemed to have stepped right out of a previous era.

- subverted
- epitomized
- underscored
- mocked
- exemplified
- satirized



Questions 12–14 are based on the following passage.

Passage adapted from “Poetry and Philosophy” by Justin Bailey (2013)

<sup>1</sup>As the logical positivism rose to ascendancy, poetic language was increasingly seen as merely emotive. <sup>2</sup>Wittgenstein’s influential *Tractatus* argued that only language corresponding to observable states of affairs in the world was meaningful, thus ruling out the value of imaginative language in saying anything about the world. <sup>3</sup>Poetry’s contribution was rather that it showed what could not be said, a layer of reality which Wittgenstein called the “mystical.” <sup>4</sup>Despite Wittgenstein’s interest in the mystical value of poetry, his successors abandoned the mystical as a meaningful category, exiling poetry in a sort of no man’s land where its only power to move came through the empathy of shared feeling.

<sup>5</sup>Yet some thinkers, like Martin Heidegger, reacted strongly to the pretensions of an instrumental theory of knowledge to make sense of the world. <sup>6</sup>Heidegger, Hans-Georg Gadamer, and Paul Ricoeur all gave central value to poetry in their philosophical method, signifying a growing sense among continental thinkers that poetic knowing was an important key to recovering some vital way of talking about and experiencing the world that had been lost.

12

The author is primarily concerned with \_\_\_\_\_.

- A. exploring the contribution of philosophy to discussions of poetic method and appreciation
- B. enumerating the reasons why Wittgenstein and his successors were misguided in their philosophical approach
- C. arguing that given the current trajectory of philosophy, poetry will soon no longer be studied in mainstream society
- D. describing the mainstream marginalization of poetry among philosophers of a certain period before noting significant exceptions

13

Select the sentence in the passage in which the author contrasts the position of a group of philosophers against those who followed Wittgenstein.

14

Select all answers that apply.

Which statements can be inferred from the passage?

- A. Some of Wittgenstein’s successors used his work to exclude something that was important to him.
- B. Philosophers agree that instrumental theories of knowledge are sufficient in understanding the world.
- C. Most positivists followed Wittgenstein in arguing for poetic knowledge as a meaningful category in philosophy.

15

Having finally fixed the engine, the mechanic took a moment to listen to it  
\_\_\_\_\_.

- purr
  - hum
  - rattle
  - clank
  - whine
  - drone
- 

16

Frequently, beginning pilots find themselves unable to trust their instruments,  
\_\_\_\_\_ them in the air and leaving them upside down.

- stranding
  - bewildering
  - informing
  - reassuring
  - mystifying
  - misinforming
-

Questions 17–20 are based on the following passage.

The future of poetry is immense because in poetry, where it is worthy of its high destinies, humanity, as time goes on, will find an ever surer and surer stay. There is not a creed which is not shaken, not an accredited dogma which is not shown to be questionable, not a received tradition which does not threaten to dissolve. Our religion has materialized itself in the fact, in the supposed fact; it has attached its emotion to the fact, and now the fact is failing it. But for poetry the idea is everything; the rest is a world of illusion, of divine illusion. Poetry attaches its emotion to the idea; the idea is the fact. The strongest part of our religion today is its unconscious poetry.

- 17 With which of the following assertions would the author most likely agree?
- A. The appeal of art focused on abstract emotion will outlast that of art focused on representing historical events.
  - B. A religion that involved no emotion could nevertheless be popular in the right cultural milieu.
  - C. Poetry should only be used to describe fanciful, unrealistic events.
  - D. While certain dogmas may fade as time progresses, we're likely to see others gain a stronger cultural hold.

- 18 The author contrasts poetry most strongly against which of the following?
- A. Ideas
  - B. Facts
  - C. Religion
  - D. Emotion

Passage adapted from "The Study of Poetry" in *Essays in Criticism: Second Series* by Matthew Arnold (1888)

- 19 Which of the following is the best paraphrase of the underlined sentence "Poetry attaches its emotion to the idea; the idea is the fact?"
- A. Poetry derives its effects from abstract concepts, not physical realities.
  - B. The emotions felt most strongly by readers of poetry are those inspired by unrealistic situations.
  - C. When reading poetry, readers are expected to suspend their disbelief and pretend that even outrageous scenarios could potentially occur.
  - D. Poetry places more importance on the novelty of the concepts discussed than on their objective truth value.
- 20 The author's use of the underlined phrase "the supposed fact" accomplishes which of the following?
- A. It suggests that religion and poetry are not mutually exclusive.
  - B. It reprises the author's point that perceived facts are subject to revision as more is learned.
  - C. It introduces the idea that a reliance on facts might be somehow subpar to a reliance on emotions.
  - D. It suggests that some people perceive as facts ideas to which they have attached strong emotions.

For each question, indicate the best answer using the directions given. If a question has answer choices with ovals, then the correct answer consists of a single choice. If a question has answer choices with square boxes, then the correct answer consists of one or more answer choices. Read the directions for each question carefully.

1

Quantity AThe y-intercept of the line  $y = 3x - 4$ Quantity BThe x-intercept of the line  $y - 3.5 = 0.5(x - 3)$ 

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

2

A car dealer sold two trucks for \$40,000 each, resulting in a 25% profit on one car and a 20% loss on the other car.

Quantity A

The dealer's net gain

Quantity B

The dealer's net loss

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

3

In a particular seven-sided polygon, the sum of four equal interior angles, each equal to  $a$  degrees, is equivalent to the sum of the remaining three interior angles.

Quantity A $a^\circ$ Quantity B $110^\circ$ 

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

4

The arithmetic mean of  $a$ ,  $b$ ,  $c$ , and  $d$  is 14.

Quantity A

32

Quantity B

The arithmetic mean  
of  $a + 3b + 2d$  and  
 $a - b + 2c - 48$

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

5

Quantity A

0

Quantity B

$(-1)^{137}$

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

6

You have a 7.5-inch tall right cylindrical glass with a three-inch radius. You also have an ice cube tray that makes perfectly cubic ice cubes with half-inch sides. You put three ice cubes in your glass.

Quantity A

The volume of the ice  
cubes

Quantity B

The volume of soda that  
you can add to the glass  
without spilling

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

7

Quantity A

The minimum number  
of handshakes that can  
occur among a dozen  
people if each person  
only shakes each other  
person's hand once

Quantity B

The number of ways that  
three people out of five  
can be seated at a table

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

**8**

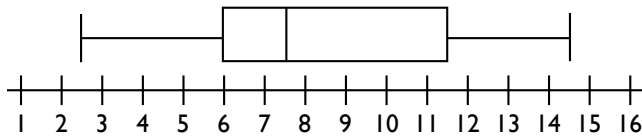
If  $v$  is divisible by 2, 3, and 15, which of the following is also divisible by these numbers?

Multiple answers may be correct.  
Select all that apply.

- A.  $v + 5$
- B.  $v + 15$
- C.  $v + 20$
- D.  $v + 30$
- E.  $v + 90$

**9**

What is the interquartile range of the data depicted in the following box-and-whisker plot?



- A. 5.0
- B. 5.5
- C. 6.5
- D. 7.5

**10**

A small circle with radius 5 lies inside a larger circle with radius  $x$ . What is the area of the region inside the larger circle but outside of the smaller circle in terms of  $x$ ?

- A.  $2\pi x - 5\pi$
- B.  $\pi x^2 - 5\pi$
- C.  $2\pi x - 25\pi$
- D.  $\pi x^2 - 25\pi$

**11**

If  $m$  and  $n$  are both odd integers, which of the following is or are not necessarily odd?

Multiple answers may be correct.  
Select all that apply.

- A.  $2m - n$
- B.  $mn$
- C.  $\frac{m+n}{2}$
- D.  $m^2n$
- E.  $\frac{m^2+n^2}{2}$

**12**

Satoshi and Reginald together have 46 bottlecaps. If they were to receive 6 bottle caps each, Satoshi would have three times as many bottle caps as Reginald. How many bottlecaps does Satoshi have?

The following information applies to questions 13–15.

A study was conducted to determine the effectiveness of a getting a flu shot at preventing the flu. 1000 patients were studied: 500 who got a flu shot at least three months ago, and 500 who had not received a flu shot. The patients were then asked if they had caught the flu in the past two months.

Table 1: Number of Patients Who Caught The Flu

Patient Age Group	Vaccinated	Unvaccinated
Under 18	18	63
18–30	4	32
31–50	5	29
51–70	4	51
Over 70	19	75

13

In the study, a patient who received a flu shot was how much less likely to catch the flu than an unvaccinated patient?

- A. 60% less likely
- B. 65% less likely
- C. 75% less likely
- D. 80% less likely

14

Suppose the scientists who performed the study create a pie chart that includes all 1000 patients and that reflects a patient's odds of catching the flu depending on vaccination status and age group.

What would be the measure of the central angle of the portion of the chart representing vaccinated patients of all age groups who caught the virus?

- A.  $15^\circ$
- B.  $18^\circ$
- C.  $24^\circ$
- D.  $36^\circ$

15

The health department wants a public service announcement to focus on the age group with the greatest difference in percentage of people who got flu shots and caught the flu and people who did not get flu shots and caught the flu. On which of the following demographics should their public service announcement focus?

- A. Under 18
- B. 31–50
- C. 51–70
- D. Over 70

16

A traffic light hangs  $t$  feet from the ground, over a street. A man standing on the exterior edge of the shadow of the traffic light is  $h$  feet tall, and his shadow is  $s$  feet long. How far is the man standing from the spot on the street directly under the traffic light?

- A.  $\frac{Th}{s}$   
 B.  $\frac{sT}{h}$   
 C.  $\frac{hs}{T}$   
 D.  $hsT$

17

150 seniors attend a high school. The school offers a philosophy class on ethics and one on metaphysics. There are 27 seniors in the ethics class and 32 in the metaphysics class. 95 seniors have elected to take neither class. How many seniors are enrolled in both philosophy courses this term?

18

If  $a(x) = 2x^3 + x$ , and  $b(x) = -2x$ , what is  $a(b(2))$ ?

- A. -132  
 B. 128  
 C. -503  
 D. 503

19

Find the length of a line segment whose endpoints are located at the coordinates  $(7, -4)$  and  $(-5, -1)$ .

- A. 12  
 B. 13  
 C. 14  
 D. 15

20

A tank containing 5,000 gallons of water springs a leak. It leaks one hundred gallons of water every fifteen minutes, but it is simultaneously filled at a rate of fifty gallons per hour. After how much time will the tank be empty?

- A. 13.56 hours  
 B. 14.04 hours  
 C. 14.18 hours  
 D. 14.29 hours



InLustro  
Screening Test  
Set 2

For each question, indicate the best answer using the directions given. If a question has answer choices with ovals, then the correct answer consists of a single choice. If a question has answer choices with square boxes, then the correct answer consists of one or more answer choices. Read the directions for each question carefully.

**Text Completion:** For each blank, select one entry from the corresponding column of choices. Fill all blanks in the way that best completes the text.

- 1 His demeanor was considered \_\_\_\_\_ due to his aloof manner and biting comments.

gentlemanly
haughty
froward
exemplary
peevish

- 2 Critics dismissed the new TV show as \_\_\_\_\_, calling it “a retread of every show of its kind we’ve seen in the last few years.”

putative
dull
fresh
invigorating
banal

- 3 Although the wine aficionado \_\_\_\_\_ Tori for her love of rosé, he did appreciate her for her \_\_\_\_\_ the opinions of a fellow wine critic, with whom he always disagreed.

Blank (i)

adored
rebuked
excused

Blank (ii)

support of
concern for
lambasting of

4

The electrician was finally \_\_\_\_\_ for his work, though the client had originally tried to \_\_\_\_\_ him.

Blank (i)

recognized
billed
remunerated

Blank (ii)

bilk
extort
reimburse

5

With his black eye, ripped jacket, and gruff demeanor, the grimacing bodyguard had a \_\_\_\_\_ look about him that convinced Jaime that this was not a person to \_\_\_\_\_ lightly.

Blank (i)

stoic
minatory
intransigent

Blank (ii)

gainsay
disabuse
encourage

6

While Ellen's friend-group tended to be studious and hardworking, she was not as \_\_\_\_\_ when it came to her schoolwork and often \_\_\_\_\_ her academics to pursue her private hobbies. Although her friends tried to appear \_\_\_\_\_ when she informed them that she had been accepted to a top-tier university, it was difficult for them to conceal their shock.

Blank (i)

sedulous
perfunctory
hidebound

Blank (ii)

underpinned
shirked
validated

Blank (iii)

discomfited
nonplussed
unperturbed

7

Often a person who is a mere \_\_\_\_\_ can appear to have a vast \_\_\_\_\_ of knowledge when he or she has a merely superficial grasp of \_\_\_\_\_ topics.

Blank (i)

pundit
dilettante
greenhorn

Blank (ii)

assimilation
repertoire
focus

Blank (iii)

elementary
recurrent
sundry

Questions 8–12 are based on the following passage.

<sup>1</sup> The word “blue,” say certain philosophers, means the sensation of color that the human eye receives in looking at the sky. <sup>2</sup> Now, say they further, as this sensation can only be felt when the eye is turned to the object, and as, therefore, no such sensation is produced by the object when nobody looks at it, therefore the thing, when it is not looked at, is not blue; and thus (say they) there are many qualities of things which depend as much on something else as on themselves. <sup>3</sup> The qualities of things that depend upon our perception of them, and upon our human nature as affected by them, metaphysicians call “subjective”; and the qualities of things which they always have, irrespective of any other nature, as roundness or squareness, they call “objective.”

<sup>4</sup> Now, the word “blue” does not mean the sensation caused by a gentian on the human eye, but it means the power of producing that sensation; and this power is always there, in the thing, whether we are there to experience it or not. <sup>5</sup> Precisely in the same way, gunpowder has a power of exploding. <sup>6</sup> It will not explode if you put no match to it. <sup>7</sup> But it has always the power of so exploding, and is therefore called an explosive compound, which it very assuredly is, whatever philosophy may say to the contrary.

<sup>8</sup> Hence I would say to these philosophers: if, instead of using the sonorous phrase, “It is objectively so,” you will use the plain old phrase “It is so,” and if instead of “It is subjectively so,” you will say, in plain old English, “It does so” or “It seems so to me,” you will be more intelligible to your fellow-creatures; and besides, if you find that a thing which generally “does so” to other people does not so to you, on any particular occasion, you will not fall into the impertinence of saying that the thing is not so, or did not so, but you will say simply that something is the matter with you. <sup>9</sup> If you find that you cannot explode the gunpowder, you will not declare that all gunpowder is subjective, and all explosion imaginary, but you will simply suspect and declare yourself to be an ill-made match.

Passage adapted from “Of the Pathetic Fallacy” by John Ruskin in *English Critical Essays: Nineteenth Century* (1916, ed. Edward Jones)

8

Based on the way the word is used in Sentence 4, what is a “gentian”?

- A. A feature of an object that the object has regardless of human interaction
- B. The ability to produce a subjective sensation in a viewer
- C. Something blue
- D. A type of thought experiment often employed in philosophical debates

9

Select all answers that apply.

Sentence 7 does which of the following?

- A. It draws a sharp distinction between two ways of defining physical qualities.
- B. It introduces the author’s opposing argument.
- C. It uses a familiar example to make metaphysicians look foolish.

10

Select all answers that apply.

Which of the following criticisms does the author raise against metaphysicians?

- A. They incorrectly assume that their perspective is universally applicable.
- B. They couch their claims in language that is hard to understand.
- C. They refuse to recognize that they have no evidence to support their claims.

---

11 The author's use of "say they" in a parenthetical in Sentence 2 \_\_\_\_\_.

- A. helps clarify to which of two groups of philosophers the argument at hand is attributed
- B. reminds the reader that metaphysicians have no evidence for the claims being presented
- C. emphasizes that the argument he's laying out is not his own
- D. helps the author contrast what a certain group says and what it does

12 Which of the following questions most closely parallels the passage's debate?

- A. If you keep dividing a thing in half, at what point can it be observed to no longer have the qualities of the original thing?
- B. How can we be sure that a source causes the same sensory experience in one person as in another?
- C. Can you ever absolutely know something to be true?
- D. If a tree falls in the woods and no one is around to hear it, does it make a sound?

---

**Sentence Equivalence:** Select the two answer choices that, when used to complete the sentence, fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.

---

13 The teacher's lectures tended to \_\_\_\_\_ instead of delving into the grand ideas of history.

- minutiae
  - ontologies
  - esoterica
  - hermeneutics
  - hypotheses
  - abstractions
-

14

The report put the \_\_\_\_\_ of the problem on the city's police and minimized the fault of other groups.

- onus
- solving
- focus
- burden
- resolution
- exegesis

15

Caught off guard, Alfred ventured a guess, which to his relief, his professor \_\_\_\_\_.

- validated
- derided
- corroborated
- ignored
- dismissed
- queried

16

The talk show host drew \_\_\_\_\_ from critics for his harshly confrontational interviews that were often painful to watch.

- ire
- acclimation
- suspicion
- ardor
- flak
- praise

17

Her answers rarely \_\_\_\_\_ the facts of the case, increasing the police's suspicion.

- jibed with
- proved
- led to
- dovetailed with
- opposed
- differed from

Questions 18–20 are based on the following passage.

<sup>1</sup> Peculiarities in the material I have used to elucidate the interpretation of dreams have rendered this publication difficult. <sup>2</sup> The work itself will demonstrate why all dreams related in scientific literature or collected by others had to remain useless for my purpose. <sup>3</sup> In choosing my examples, I had to limit myself to considering my own dreams and those of my patients who were under psychoanalytic treatment. <sup>4</sup> I was restrained from utilizing material derived from my patients' dreams by the fact that during their treatment, the dream processes were subjected to an undesirable complication—the intermixture of neurotic characters. <sup>5</sup> On the other hand, in discussing my own dreams, I was obliged to expose more of the intimacies of my psychic life than I should like, more so than generally falls to the task of an author who is not a poet but an investigator of nature. <sup>6</sup> This was painful, but unavoidable; I had to put up with the inevitable in order to demonstrate the truth of my psychological results at all. <sup>7</sup> To be sure, I disguised some of my indiscretions through omissions and substitutions, though I feel that these detract from the value of the examples in which they appear. <sup>8</sup> I can only express the hope that the reader of this work, putting himself in my difficult position, will show patience, and also that anyone inclined to take offense at any of the reported dreams will concede freedom of thought at least to the dream life.

Passage adapted from “Introductory Remarks” in *The Interpretation of Dreams* by Sigmund Freud (trans. 1913)

18

What evidence does the author offer to justify his choice to omit dreams described in scientific publications?

- A. He doesn't give direct evidence, but he suggests that his text will explain this decision.
- B. Those dreams came from patients diagnosed with various psychological conditions, so they introduced additional uncontrolled variables.
- C. Scientific publications edit the dreams they publish and may omit parts that would greatly change the author's interpretation of said dreams.
- D. The author had to interview people about their dreams to make sure that the questions people were prompted with were unbiased.

19

Select the sentence in which the author most directly elicits the reader's sympathy.

20

Select all answers that apply.

The passage supports which of these inferences?

- A. In the work that follows, the author discusses embarrassing things that occurred in his dreams and leaves nothing out.
- B. The author believes himself to have no “intermixture of neurotic characters.”
- C. Some readers might be offended by the content of some of the dreams the author discusses.

For each question, indicate the best answer using the directions given. If a question has answer choices with ovals, then the correct answer consists of a single choice. If a question has answer choices with square boxes, then the correct answer consists of one or more answer choices. Read the directions for each question carefully.

1

$r$  is  $s\%$  of 80  
 $s$  is  $r\%$  of 125

Quantity A $s$ Quantity B $r$ 

- Quantity A is greater.  
 Quantity B is greater.  
 The two quantities are equal.  
 The relationship cannot be determined from the given data.

2

$x > 0$   
 $y > 0$

Quantity A $(x + y)^2$ Quantity B $x^2 + 4xy + y^2$ 

- Quantity A is greater.  
 Quantity B is greater.  
 The two quantities are equal.  
 The relationship cannot be determined from the given data.

3

A square is inscribed within a circle with a radius of  $3\sqrt{2}$  cm. Use 3.14 for the value of  $\pi$ .

Quantity A

The area of the circle  
that is not covered by  
the square

Quantity B $20 \text{ cm}^2$ 

- Quantity A is greater.  
 Quantity B is greater.  
 The two quantities are equal.  
 The relationship cannot be determined from the given data.

4

Quantity A $\sqrt{320} - \sqrt{45}$ Quantity B $\sqrt{243} - \sqrt{48}$ 

- Quantity A is greater.  
 Quantity B is greater.  
 The two quantities are equal.  
 The relationship cannot be determined from the given data.



5

Quincy has \$20,000 to invest in one of two bank accounts and wants to earn as much money as possible in interest.

Quantity A

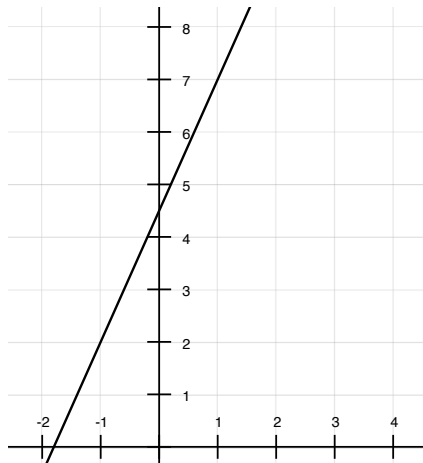
The amount of interest earned on Quincy's money in a savings account that earns 7.5% interest.

Quantity B

The amount of interest earned on Quincy's money in CD that earns 5.25% compounded monthly.

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

6



Quantity A

The x-intercept of the line perpendicular to the depicted line on which (3,4) is a point

Quantity B

10

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

7

Sheryl and Bonnie are competing in an archery tournament. Each person gets to shoot four arrows at a target, and the best shot counts. Sheryl hits the bullseye 42% of the time, and Bonnie hits it 35% of the time. Round to two decimal places.

Quantity A

The probability that Sheryl will hit the bullseye at least once in her first three tries

Quantity B

The probability that Bonnie will hit the bullseye at least once in her four tries

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

8

$$\frac{x}{y} = \frac{3}{7}$$

Quantity A  
 $x$

Quantity B  
 $y$

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the given data.

9

At a certain company, one quarter of the employees take the bus to work and one third drive. Of the remaining employees, half walk, one third ride a bike, and the rest take the subway. Out of the total number of employees, what fraction ride a bike to work?

- A.  $\frac{1}{12}$
- B.  $\frac{8}{15}$
- C.  $\frac{2}{21}$
- D.  $\frac{5}{36}$

10

Which of the following is or are (a) possible value(s) for  $x$  in the inequality  $|2x - 2| > 20$ ?

Multiple answers may be correct.  
Select all that apply.

- A.  $-12.5$
- B.  $-9$
- C.  $4$
- D.  $12$
- E.  $20$

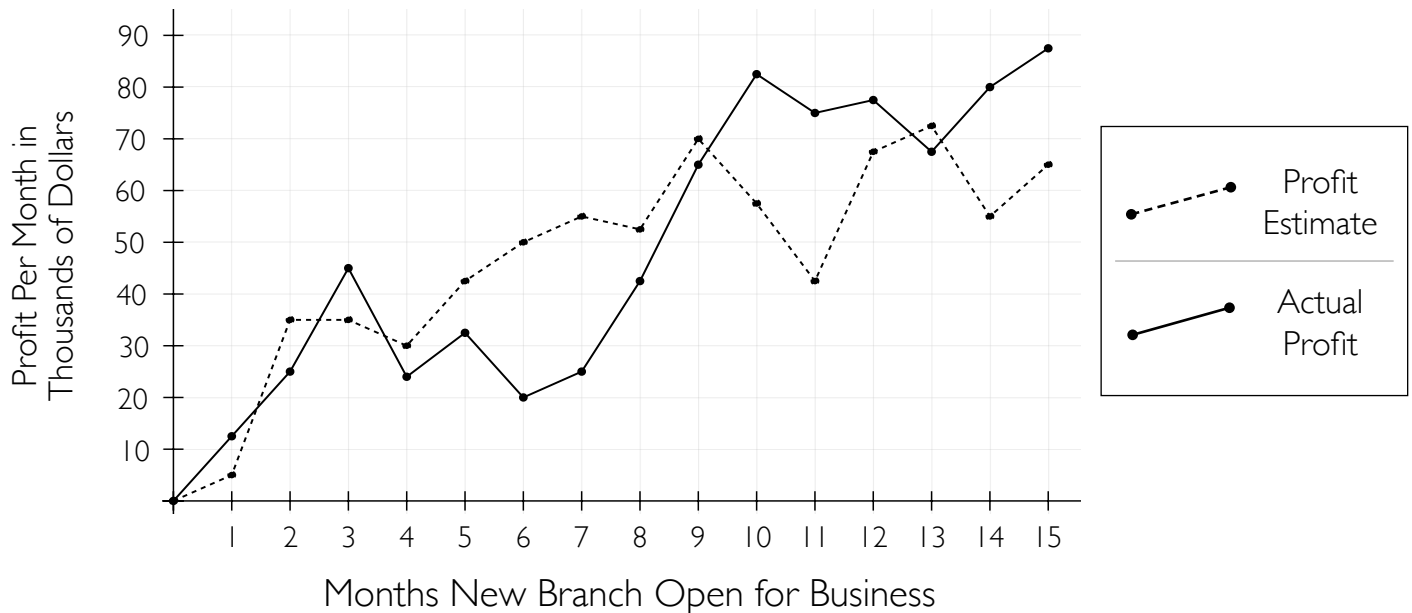
11

An ant begins at the center of a pie with a 12" radius. Walking out to the edge of pie, it then proceeds along the outer edge for a certain distance. At a certain point, it turns back toward the center of the pie and returns to the center point. Its whole trek was 55.3 inches. What is the approximate size of the angle through which it traveled?

- A.  $128.21^\circ$
- B.  $91.44^\circ$
- C.  $81.53^\circ$
- D.  $149.52^\circ$

The following information applies to questions 13–15.

A successful business decided to expand and open a new branch in a neighboring country fifteen months ago. Data about the profit per month of the new branch of the business is shown below.



**12** What was the percent increase in profit of the new branch of the business between the sixth month after it opened and the fourteenth month after it opened?

**13** If the business's profits had continued to decrease steadily after month 4 at the same rate as they were predicted to fall between months 2 and 4 after the new branch opened, what would be the new branch's profit after 6 months?

- A. 10.2
- B. 10.8
- C. 11.0
- D. 11.4

**14** What was the maximum amount of money by which the predicted profits and the actual profits differed over the course of the shown 15 months?

- A. \$25,500
- B. \$30,000
- C. \$30,500
- D. \$42,500

15

Which of the following equations represents the equation  $y = 4x^2 - 2$  shifted down 2 units and right 3 units?

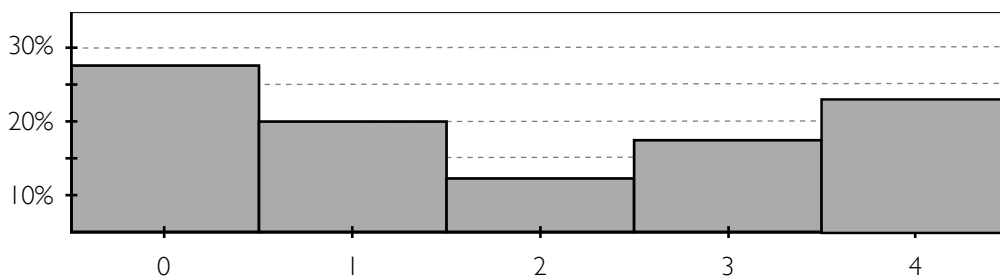
- A.  $y = 4(x + 2)^2 - 5$
- B.  $y = 4(x - 2)^2 - 5$
- C.  $y = 4(x - 3)^2 - 4$
- D.  $y = 4(x + 3)^2 - 4$

16

Solve for  $x$ :

$$\frac{x}{\sqrt{0.04}} = \sqrt{0.16}$$

- A. 0.08
- B. 0.2
- C. 0.64
- D. 0.4



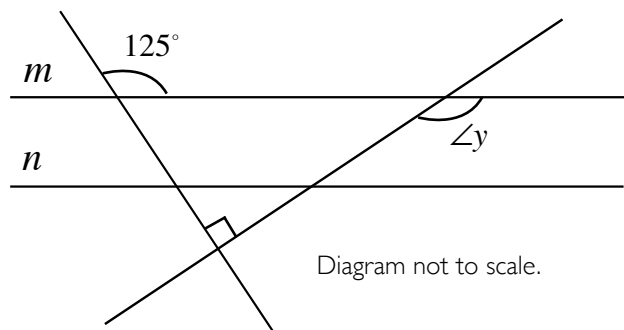
17

Consider the probability distribution shown above. What is the mean of the random variable being measured?

- A. 1.725
- B. 1.875
- C. 1.950
- D. 1.975

18

What is the value of angle  $y$ ?



**19**

A farmer has 34 ft of fence and wants to fence in his sheep. He wants to build a rectangular pen with one side formed by the side of his barn. He wants the area of the pen to be  $120 \text{ ft}^2$ . Which of the following could be the length of the side of the pen opposite the barn?

Multiple answers may be correct.  
Select all that apply.

- A. 8 ft
- B. 10 ft
- C. 12 ft
- D. 18 ft
- E. 24 ft

**20**

Simplify the following expression.

$$\frac{(x^4)^{-7}}{x^2 x^4}$$

- A.  $\frac{1}{x^{34}}$
- B.  $x^{34}$
- C.  $\frac{1}{x^{22}}$
- D.  $x^{22}$

**End of Section****STOP****End of Section**

# SOLUTIONS TO THE CRASH COURSE TESTS

(COURSE CONDUCTED FROM  
MARCH 2021 TO MAY 2021)

**INLUSTRO LEARNING PRIVATE LIMITED**

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# Verbal Ability

1. Fill in the blank with a suitable word from the options. After centuries of obscurity, this philosopher's thesis is enjoying a surprising \_\_\_\_\_ .

**Answer:** Renaissance

**Explanation:** The sentence tells us that the thesis has been in obscurity (forgotten or neglected) but now it is being revived. We can say it is undergoing a renaissance (revival).

2. Fill in the blank with suitable words from the options. There is a general \_\_\_\_\_ in the United States that our ethics are declining and that our moral standards are \_\_\_\_\_.

**Answer:** complaint - deteriorating

**Explanation:** The conjunction 'and' usually joins things of similar meaning or weight. This suggests that since ethics are declining, moral standards are also declining (deteriorating). Almost any word except 'optimism' would have fit the first blank.

3. Fill in the blank with suitable words from the options.

In the Middle Ages, the \_\_\_\_\_ of the great cathedrals did not enter into the architects' plans; almost invariably a cathedral was positioned haphazardly in \_\_\_\_\_ surroundings.

**Answer:** situation - incongruous

4. Quantum theory was initially regarded as absurd, unnatural and \_\_\_\_\_ with common sense.

**Answer:** incompatible

**Explanation:** The adjective 'incompatible' means (of two things) so different in nature as to be incapable of coexisting. This best befits the given context- initially quantum theory was thought of as incapable of coexisting with common sense. Thus **incompatible** is the best answer.

5. Abraham Lincoln was famously known for his \_\_\_\_\_, which explains why he is often referred to as "Honest Abe."

**Answer:** Veracity

**Explanation:** Here, the keyword is "honest," and the missing word is used to explain why Lincoln was called honest. Thus, the missing word must also mean honesty, as only



---

someone known for honesty would be called “honest.” As veracity means honesty or truthfulness, it’s the suitable answer.

6. Archaeology is a poor profession; only \_\_\_\_\_ sums are available for excavating sites and even more \_\_\_\_\_ amounts for preserving the excavations.

**Answer:** paltry - meager

**Explanation:** The part after the semicolon expands upon the first part of the sentence.

So, since the first part tells us that there is no money in archaeology, then there will only be small (paltry) amounts for excavating. Also ‘even more’ indicates that another similar word is required. Thus, meager also means small.

7. The village headman was unlettered, but he was no fool, he could see through the \_\_\_\_\_ of the businessman’s proposition and promptly \_\_\_\_\_ him down.

**Answer:** sophistry , turned

**Explanation:** The sentence suggests that although the village headman was illiterate, he was wise. This information must have been provided in order to validate that he could see through the deception (sophistry) of the businessman’s proposition and must have turned him down.

8. Moths are nocturnal pollinators, visiting scented flowers during the hours of darkness, whereas the butterflies are \_\_\_\_\_ , attracted to bright flowers in the daytime.

**Answer:** diurnal

**Explanation:** Here, the adjective 'diurnal', which means of or during the day, best befits the given context and conveys the meaning that the sentence requires of it. Thus diurnal is the correct answer.

9. War has been, throughout history, the chief \_\_\_\_\_ of social cohesion; and since science began, it has been the strongest \_\_\_\_\_ to technical progress.

**Answer:** source - incentive

**Explanation:** In the given space of time i.e. ‘throughout history’ there can be only source. Reason and cause or origin can be a particular event. Boost, encouragement and incentive mean the same.

---

10. Scrooge, in the famous novel by Dickens, was a \_\_\_\_\_; he hated the rest of mankind.

**Answer:** misanthrope

**Explanation:** The part of the sentence after the semicolon defines the word needed for the blank. So, since he 'hated mankind', the word we need is misanthrope (hater of the rest of mankind).

11. Fill in the blank with a suitable word from the options.

In her crusade to make public servants accountable to voters, she \_\_\_\_\_ the nation's unscrupulous and self-indulgent politicians.

**Answer:** exposed

12. In a fit of \_\_\_\_\_ she threw out the valuable statue simply because it had belonged to her ex-husband.

**Answer:** pique

**Explanation:** She threw out a valuable statue just because it belonged to her ex-husband. Therefore, she must have been acting out of spite or ill will. Hence we choose pique which means 'resentment'.

13. Fill in the blank with the correct answer.

In this biography we are given a glimpse of the young man \_\_\_\_\_ pursuing the path of the poet despite \_\_\_\_\_ and rejection slips.

**Answer:** doggedly - disappointment

14. Fill in the blank with the correct answer.

The assumption that chlorofluorocarbons would be \_\_\_\_\_ in the environment because they were chemically inert, was challenged by the demonstration of a potential threat to the ozone layer.

**Answer:** innocuous

15. The professor became increasingly \_\_\_\_\_ in later years, flying into a rage whenever he was opposed.

---

**Answer:** irascible

**Explanation:** The required word is signaled by the phrase ‘flying into a rage’. Someone who is easily angered is described as ‘irascible’.

16. Fill in the blank with a suitable word from the options.

People from all over the world are sent by their doctors to breathe the pure, \_\_\_\_\_ air in this mountain region.

**Answer:** invigorating

17. Fill in the blanks with the correct answer.

Handicrafts constitute an important \_\_\_\_\_ of the decentralized sector of India’s economy and \_\_\_\_\_ employment to over six million artisans.

**Answer:** segment - provides

18. Fill in the blanks with suitable words. Corruption is \_\_\_\_\_ in our society; the integrity of even senior officials is \_\_\_\_\_ .

**Answer:** rife - suspicious

**Explanation:** The semicolon suggests that the second part expands upon the first part. So, if corruption is rife (common), then we will doubt the integrity of the officials. Their integrity will be suspicious (doubtful).

19. Plastic bags are \_\_\_\_\_ symbols of consumer society; they are found wherever you travel.

**Answer:** ubiquitous

**Explanation:** Since the bags are found everywhere they must be ubiquitous.

20. We live in a \_\_\_\_\_ age; everyone thinks that maximizing pleasure is the point of life.

**Answer:** hedonistic

**Explanation:** The part after the semicolon explains what kind of age we are talking about. So, since we are told that maximizing pleasure is the point, the word we need is hedonistic (pleasure seeking).

---

21. Despite his \_\_\_\_\_ upbringing, Vladimir proved quite adept at navigating city life.

**Answer:** bucolic

**Explanation:** The keywords are found in the phrase “quite adept at navigating city life,” which is used to describe Vladimir. The word ‘despite’ stresses that his ability to navigate city life is contrary to his upbringing. Hence, his upbringing must have been bucolic which is a word that suggests a rural lifestyle.

22. His presentation was so lengthy and \_\_\_\_\_ that it was difficult for us to find out the real \_\_\_\_\_ in it.

**Answer:** verbose - content

**Explanation:** The word ‘and’ indicates that the first blank will be filled with a word that is similar to ‘lengthy’. Hence, the first blank can be filled with ‘verbose’, ‘tedious’ and ‘laborious’. The second blank can only be filled with the word ‘content’ to make complete meaning.

23. The \_\_\_\_\_ successfully repelled every \_\_\_\_\_ on the city.

**Answer:** citizens - onslaught

**Explanation:** We can repel or push back only onslaughts or attacks.

24. The success of the business venture \_\_\_\_\_ his expectations; he never thought that the firm would prosper.

**Answer:** belied

**Explanation:** He never thought the business would prosper (do well). Therefore, the success came as a surprise and contradicted (‘belied’) his expectations.

25. Unwilling to admit that they had been in error, the researchers tried to \_\_\_\_\_ their case with more data obtained from dubious sources.

**Answer:** buttress

**Explanation:** The researchers were unwilling to admit that they were wrong. Therefore they would try to support (buttress) their arguments.

---

26. Nutritionists declare that the mineral selenium, despite its toxic aspects, is \_\_\_\_\_ to life, even though it is needed in extremely small quantities.

**Answer:** essential

**Explanation:** Something which is needed for life, even if it is in extremely small quantities, cannot be described as destructive to life, or insignificant to life, or extraneous to life. It can only be described as being essential to life.

27. The formerly \_\_\_\_\_ waters of the lake have been polluted so that the fish are no longer visible from the surface (can't find Explanation)

**Answer:** pellucid

28. Many so-called social playwrights are distinctly \_\_\_\_\_ ; rather than allowing the members of the audience to form their own opinions, these writers force a viewpoint on the viewer.

**Answer:** didactic

**Explanation:** The word for the blank is explained after the semicolon. If they force their viewpoint on the viewer, then they must be 'didactic'. Didactic means intending to preach or instruct.

29. A \_\_\_\_\_ child, she was soon bored in class; she already knew more mathematics than her junior school teachers.

**Answer:** precocious

**Explanation:** The sentence suggests that she was way ahead of her class. This indicates the need for the word precocious, which means gifted or advanced for one's years.

30. The \_\_\_\_\_ terrorist was finally \_\_\_\_\_ by the police.

**Answer:** notorious - nabbed

**Explanation:** The first blank describes the quality of the terrorist. This can be either filled with notorious or crafty as the other two options are positive words which cannot be used to describe a terrorist. The word 'admonished' means to scold firmly which does not suit the given context. Hence, the given blank has to be filled with the word 'nabbed'.

---

# Quantitative Quiz

1. There is a set of 30 numbers. The average of first 10 numbers is equal to the average of last 20 numbers. What is the sum of last 20 numbers?

- a) Twice the sum of the first ten numbers
- b) Sum of first 10 numbers.
- c) Twice the sum of the last ten numbers
- d) Cannot be determined.

**Answer:** a) Twice the sum of the first ten numbers

**Solution:**

Let the sum of the first 10 numbers is equal to 'x'

Let the sum of the last 20 numbers is equal to 'y'

According to the question:

$$x/10 = y/20$$

Therefore,  $y = 2x$

2. There is a town called Metron, where wheels of the front and rear of vehicles are of different size. The measurement unit followed in the town is the metre. The circumference of the front wheel of the car is 133 metres and that of rear wheels is 190 metres. So what is the distance travelled by the cart in metres when the front wheel has done nine more revolutions than the rear wheel?

- a. 1330
- b. 572
- c. 399
- d. 3990

**Answer:** d) 3990

**Solution:**

At first, we calculate the LCM of 133 and 190 which is 1330. So, the front wheels take 10 rounds to cover 1330 metres and the rear wheels take 7 rounds to cover the same. So to take 9 extra revolutions the vehicle would have travelled  $1330 * 3 = 3990$  metres.

---

3. Let a number 'x' when divided by 406 leaves a remainder 115. What will be the number when the number is divided by 29?

**Answer:** 28

**Solution:**

According to the question, the number is equal to  $406x + 115$ .

Since 406 is divisible completely by 29, therefore any multiple of 406 that is  $406x$  when divided by 29 leaves remainder 0. Now 115, when divided by 29, leaves the remainder 28.

4. A sequence of an alpha-numeric is to be formed. The sequence consisting of two alphabets followed by two numbers is to be formed with no repetitions. In how many ways can it be formed?

- a. 65000
- b. 64320
- c. 58500
- d. 67600

**Answer:** c) 58500

**Solution:**

The first can be filled in 26 ways.

The second place can be filled in 25 ways.

The third place can be filled in 10 ways.

The last digit can be filled in 9 ways.

5. According to a particular code language, A=0, B=1, C=2, ..., Y=24, Z=25 then can will ONE+ONE (in the form of alphabets only) be coded?

- a) DABI
- b) CIDA
- c) BDAI
- d) ABDI

**Answer:** c) BDAI

---

**Solution:**

This is a 26 base question. Just like there is the Decimal system consisting of 10 digits from 0 to 9, the Base 26 system consist of 26 alphabets where A = 0, B = 1, Z = 25 and so on.

Let's calculate, O N E + O N E

For E(4),

=> E + E

=> 4 + 4

=> 8

=> I

For N(13),

=> 13 + 13

=> 26

On converting 26 to Base 26 we get 1 0. Keeping 0(A) and taking 1 as carry

For O(14),

=> O + O + 1

=> 29

Dividing 29 by 26 we get 1(B) 3(D)

So answer is BDAI

6. In the sequence of Problem solving... what is the 2015th alphabet?

a) p

b) g

c) r

d) n

**Answer:** d) n

**Solution:**

'problemsolving' consist of 14 letters. On dividing 2015 by 14 we get 13. So the 13th letter is n and hence the answer.



---

7. What is the remainder when the number 101102103104105106107...148149150 is divided by 9?

**Answer:** 2

**Solution:**

The divisibility rule for 9 is that the sum of all digits of a number should be divisible by 9.

Let's calculate the sum of the digits:

There are 50 1's (unit place) = 50

There are 10 1's (tens place) = 10

There are 10 2's (tens place) = 20

There are 10 3's (tens place) = 30

There are 10 4's (tens place) = 40

There is one 5 (tens place) = 5

For each number 1 to 9, there are 5 sets of sum  $45(1+2+\dots+9) = 225$

=> So sum of all digits = 380

=>  $380 / 9 = 2$  (Answer)

8. 30 litres of 78% of a concentrated acid solution is to be prepared. How many litres of 90% concentrated acid needs to be mixed with 75% solution of concentrated acid to get the result?

a) 10

b) 6

c) 3

d) 4

**Answer:** b) 6

**Solution:**

Let's apply the weighted-average formula.

Let there be  $n_1$  litre of 90% acid solution and  $n_2$  litre of 75% solution

Therefore,

$$\Rightarrow 78 = \frac{(90 * n_1) + (75 * n_2)}{(n_1 + n_2)}$$

We get,

$$\Rightarrow n_1/n_2 = 1 / 4$$

So 30 litres needed to be divided in the ratio of 1:4, which gives us 6 litre as the answer.

---

9. Ram will be 32 years old in eight years from now. In 4 years, Ram's father's age will be twice as Ram's age and two years ago, his mother's age will be twice his age. What will be the present age of Ram's father and mother?

**Answer:** Father's age = 52, Mother's age = 46

**Solution:**

Ram will be 32 years old in the next 8 years. So his present age is  $32 - 8 = 24$  years old

After 4 years Ram will be 28 years old. So his father will be  $28 * 2 = 56$  years old.

Therefore, father's present age is  $56 - 4 = 52$  years old

Two years ago Ram was 22 years old. So his mother's age then was  $22 * 2 = 44$  years old

Therefore mother's present age is  $44 + 2 = 46$  years old.

10. In a class, the number of boys is equal to the number of girls. What was the total number of students if twice the number of boys as girls remained when 12 girls entered out?

**Answer:** 48

**Solution:**

Let 'b' be the number of boys and 'g' be the number of girls. According to the question:

$$\Rightarrow b / (g - 12) = 2 / 1$$

Since  $b = g$ ;

we get  $g = 24$ .

So the total number of students =  $24 + 24 = 48$

11. An exam was conducted and the following was analyzed. 4 men were able to check some exam papers in 8 days working 5 hours regularly. What is the total number of hours taken by 2 men in 20 days to check double the number of exam papers?

**Answer:** 8 hours

**Solution:**

Assuming that 1 unit of work is done in 1 hour

Let's calculate the total number of working hours:

$$\Rightarrow 4 * 8 * 5 = 160 \text{ units}$$

Now the work is doubled:

$$\Rightarrow 160 * 2 = 320 \text{ units}$$

---

Let 'x' be the number of hours taken by 2 men to complete the work in 20 days.

Therefore,

$$\Rightarrow 2 * 20 * x = 320$$

$$\Rightarrow x = 8 \text{ hours (Answer).}$$

12. The numbers from 101 to 150 are written as,

101102103104105...146147148149150. What will be the remainder when this total number is divided by 3?

**Answer:** 2

**Solution:**

The divisibility rule for 3 is that the sum of all digits of a number should be divisible by 3.

Let's calculate the sum of the digits:

There are 50 1's (unit place) = 50

There are 10 1's (tens place) = 10

There are 10 2's (tens place) = 20

There are 10 3's (tens place) = 30

There are 10 4's (tens place) = 40

There is one 5 (tens place) = 5

For each number 1 to 9, there are 5 sets of sum  $45(1+2+\dots+9) = 225$

$$\Rightarrow \text{So sum of all digits} = 380$$

$$\Rightarrow 380 / 3 = 2 \text{ (Answer)}$$

13. If the alphabets are written in the sequence of a, bb, ccc, dddd, eeeee, fffff, .... What will be the 120th letter?

**Answer:** O

**Solution:**

It can be seen that the letter are in AP sequence, So applying the formula we get,

$$n(n+1)/2 \leq 120$$

We find that  $n = 15$  fits the equation

The 15th letter in the English alphabet = O

So 15th term contains O.

---

14. There is a tank whose  $\frac{1}{7}$  th part is filled with fuel. If 22 liters of fuel is poured into the tank, the indicator rises to  $\frac{1}{5}$  th mark of the tank. So what is the total capacity of the tank?

**Answer:** 385

**Solution:**

Let the total capacity of the tank be 'x' liters.

According to the question,

$$\Rightarrow \frac{x}{7} + 22 = \frac{x}{5}$$

$$\Rightarrow \frac{x}{5} - \frac{x}{7} = 22$$

$$\Rightarrow x = 385 \text{ litres (Answer)}$$

15. How many prime numbers lie between 3 and 100 (excluding the values) that satisfies the condition:

$$4x + 1$$

$$5y - 1$$

**Answer:** 2

**Solution:**

There are 23 prime numbers between 3 and 100 (excluding the values) of which all are odd.

For  $5y - 1$  to be odd,  $5y$  must be even

For  $5y$  to be even  $y$  should be even.

Taking  $y$  as 2 we get  $5y - 1$  as 9.

Now looking at all those prime numbers ending at 9 = 9, 19, 29, 39, 59, 79, 89

Out of these, the numbers satisfying both the equations(integer is assumed) are 9, 29 and 89.

We cannot consider 9 as it violates the constraint of number should be greater than 3.

Therefore answer is 2 (29 and 89)

16. There is a fairy island where lives a Knight, a Knave, and a Spy. You go there and meet three people suppose A, B, and C, one of whom is a knight, one a knave, and one a spy. It is known that the knight always tells the truth, the knave always lies, and the spy can either lie or tell the truth.

---

A says: "C is a knave."

B says: "A is a knight."

C says: "I am the spy."

So who is the knight, who the knave, and who the spy?

**Answer:** A = Knight, B = Spy, C = Knave

**Solution:**

Let us say A is the Knight, then he speaks the truth and C is Knave who lied and finally B is Knave, who speaks the truth regarding A. So this condition holds.

Let us say B is the knight. then it contradicts the answer since a knight always speaks the truth and there cannot be two knights.

Same goes with C.

17. Find the number of perfect squares in the given series 2013, 2020, 2027, ....., 2300? (Hint  $44^2=1936$ )

a) 2

b) 1

c) 3

d) None of the above

**Answer:** b) 1

**Solution:**

We can see that the series is in the form of AP with common difference of 7.

So the series is in the form of  $2013 + 7d$

The hint is actually a shortcut:

$$44^2 = 1936$$

$$45^2 = 2025$$

$$46^2 = 2116$$

$$47^2 = 2209$$

$$48^2 = 2304$$

Therefore among these numbers, we need to find which of them are in the form of  $2013 + 7d$

Only one number 2209 can be written in the form  $2013 + 7*28$ .

Therefore the answer is 1.

---

18. In the series of  $7^1+7^2+7^3+7^4+\dots+7^{204}+7^{205}$ , how many numbers are there with the unit place as 3?

**Answer:** 51

**Solution:** According to the cyclicity of 7, the unit digit follows the pattern of 7, 9, 3, 1 and this repeats. So in every 4 numbers, we get one 3 in the unit place. Dividing 205 by 4 we get 51 which is the answer to the following question.

19. Find the number of divisors of 1728(including 1 and the number itself).

**Answer:** 28

**Solution:**

There is a direct formula for this:

Number =  $p^a \cdot q^b \cdot r^c \dots$

where p, q and r are prime numbers. Simply we need to prime factorize the Number.

Then,  $(a+1) \cdot (b+1) \cdot (c+1)$  is the number of divisors.

For  $1728 = 2^6 \cdot 3^3$

Therefore,  $(6+1) \cdot (3+1) = 28$

20. When  $a + b$  is divided by 12 the remainder is 8, and when  $a - b$  is divided by 12 the remainder is 6. If  $a > b$ , what is the remainder when  $ab$  divided by 6?

a) 3

b) 1

c) 5

d) 4

**Answer:** b) 1

**Solution:** According to the question,

$$a + b = 12k + 8$$

$$\Rightarrow (a+b)^2 = 144k^2 + 64 + 192k$$

$$a - b = 12l + 6$$

$$\Rightarrow (a-b)^2 = 144l^2 + 36 - 144l$$

Subtracting both the equations we get,

$$ab = 36(k^2 - l^2) + 48k - 36l + 7$$

Now all the terms of  $ab$  are divisible by 6, except 7. So the remainder left is 1.

---

# In-Class Programming Test 1

1. Given a number, the task is to check if this number is Armstrong or not using Command Line Arguments. A positive integer of n digits is called an Armstrong number of order n (order is number of digits) if  $abcd\dots = \text{pow}(a, n) + \text{pow}(b, n) + \text{pow}(c, n) + \text{pow}(d, n) + \dots$

Example: Input: 153 Output: Yes 153 is an Armstrong number.  $1*1*1 + 5*5*5 + 3*3*3 =$

153 Input: 120 Output: No 120 is not a Armstrong number.  $1*1*1 + 2*2*2 + 0*0*0 = 9$  Input:

1253 Output: No 1253 is not a Armstrong Number  $1*1*1*1 + 2*2*2*2 + 5*5*5*5 + 3*3*3*3 = 723$  Input: 1634 Output: Yes  $1*1*1*1 + 6*6*6*6 + 3*3*3*3 + 4*4*4*4 = 1634$

**Answer:**

```
// C program to check if a number is Armstrong
```

```
// using command line arguments
```

```
#include <stdio.h>
```

```
#include <stdlib.h> /* atoi */
```

```
// Function to calculate x raised to the power y
```

```
int power(int x, unsigned int y)
```

```
{
```

```
    if (y == 0)
```

```
        return 1;
```

```
    if (y % 2 == 0)
```

```
        return power(x, y / 2) * power(x, y / 2);
```

```
    return x * power(x, y / 2) * power(x, y / 2);
```

```
}
```

```
// Function to calculate order of the number
```

```
int order(int x)
```

```
{
```

```
    int n = 0;
```

---

```

    while (x) {
        n++;
        x = x / 10;
    }
    return n;
}

// Function to check whether the given number is
// Armstrong number or not
int isArmstrong(int x)
{
    // Calling order function
    int n = order(x);
    int temp = x, sum = 0;
    while (temp) {

        int r = temp % 10;
        sum += power(r, n);
        temp = temp / 10;
    }

    // If satisfies Armstrong condition
    if (sum == x)
        return 1;
    else
        return 0;
}

// Driver code
int main(int argc, char* argv[])
{

```



---

```

int num, res = 0;

// Check if the length of args array is 1
if (argc == 1)
    printf("No command line arguments found.\n");

else {

    // Get the command line argument and
    // Convert it from string type to integer type
    // using function "atoi( argument)"
    num = atoi(argv[1]);

    // Check if it is Armstrong
    res = isArmstrong(num);

    // Check if res is 0 or 1
    if (res == 0)
        // Print No
        printf("No\n");
    else
        // Print Yes
        printf("Yes\n");
    }
return 0;
}

```

2. Given a number, the task is to check if this number is Palindrome or not using Command Line Arguments. Examples: Input: 123 Output: No Input: 585 Output: Yes

**Answer:**

```

// C program to check if a number is Palindrome
// using command line arguments

```

---

```
#include <stdio.h>
#include <stdlib.h> /* atoi */

// Function to reverse the number
int reverseNumber(int num)
{

    // Variable to store the
    // resultant reverse number
    int rev_num = 0;

    // Traverse through the number digit by digit
    while (num > 0) {

        // Append the last digit of num
        // as the next digit of rev_num
        rev_num = rev_num * 10 + num % 10;

        // Remove the last digit from the num
        num = num / 10;
    }

    // Return the reversed number
    return rev_num;
}

// Function to reverse a string
int isPalindrome(int num)
{
    int rev_num = reverseNumber(num);
    if (num == rev_num)
```

---

```
        return 1;
    else
        return 0;
}

// Driver code
int main(int argc, char* argv[])
{

    int num, res = 0;

    // Check if the length of args array is 1
    if (argc == 1)
        printf("No command line arguments found.\n");

    else {

        // Get the command line argument and
        // Convert it from string type to integer type
        // using function "atoi( argument)"
        num = atoi(argv[1]);

        // Check if it is Palindrome
        res = isPalindrome(num);

        // Check if res is 0 or 1
        if (res == 0)
            // Print No
            printf("No\n");
        else
            // Print Yes
            printf("Yes\n");
    }
}
```

---

```
    }  
    return 0;  
}
```

3. Given two numbers, the task is to find the HCF of two numbers using Command Line Arguments. GCD (Greatest Common Divisor) or HCF (Highest Common Factor) of two numbers is the largest number that divides both of them.

**Answer:**

```
#include  
#include /* atoi */  
// Function to compute the HCF of two numbers  
int HCF(int a, int b)  
{  
    if (b == 0)  
        return a;  
    return HCF(b, a % b);  
}
```

4. Write a program to reverse a linked list

**Answer:**

```
#include  
using namespace std;  
/* Link list node */  
struct Node {  
    int data;  
    struct Node* next;  
    Node(int data)  
    {  
        this->data = data;  
        next = NULL;  
    }  
};
```

---

```

struct LinkedList {
    Node* head;
    LinkedList() { head = NULL; }
    /* Function to reverse the linked list */
    void reverse()
    {
        // Initialize current, previous and
        // next pointers
        Node* current = head;
        Node *prev = NULL, *next = NULL;
        while (current != NULL) {
            // Store next
            next = current->next;
            // Reverse current node's pointer
            current->next = prev;
            // Move pointers one position ahead.
            prev = current;
            current = next;
        }
        head = prev;
    }
    /* Function to print linked list */
    void print()
    {
        struct Node* temp = head;
        while (temp != NULL) {
            cout << temp->data << " ";
            temp = temp->next;
        }
    }
    void push(int data)
    {

```

---

```

    Node* temp = new Node(data);
    temp->next = head;
    head = temp;
}
}

```

5. Write a function to delete duplicate elements from an integer array

**Answer:**

Input the number of elements of the array. Input the array elements. Repeat from i = 1 to n

- if (arr[i] != arr[i+1])

- temp[j++] = arr[i]-

temp[j++] = arr[n-1]

Repeat from i = 1 to j

- arr[i] = temp[i] return j

6. Write a program to find all the permutations of a given string

**Answer:**

```
#include
```

```
#include
```

```
//Declaring generatePermutation()
```

```
void generatePermutation(char * , int , int );
```

```
int main()
```

```
{
```

```
    char str[] = "ABC";
```

```
    int n =strlen(str);
```

```
    printf("All the permutations of the string are: \n");
```

```
    generatePermutation(str,0,n);
```

```
}
```

```
//Function for generating different permutation of the string.
```

```
void generatePermutation(char *str,const int start, int end)
```

```
{
```

```
    char temp;
```

---

```

int i,j;
for(i = start; i < end-1; ++i){
for(j = i+1; j < end; ++j)
{
//Swapping the string by fixing a character
temp = str[i];
str[i] = str[j];
str[j] = temp;
//Recursively calling function generatePermutation() for rest of the characters
generatePermutation(str , i+1 ,end);
//Backtracking and swapping the characters again
temp = str[i];
str[i] = str[j];
str[j] = temp;
}
}
//Print the permutations
printf("%s\n",str);
}

```

7. Write a function to reverse a string using recursion

**Answer:**

```

/* Function to print reverse of the passed string */
void reverse(string str)
{
(str.size() == 0)
{
return;
}
reverse(str.substr(1));
cout << str[0];
}

```

---

```
/* Driver program to test above function */
int main()
{
    string a = "Geeks for Geeks";
    reverse(a);
    return 0;
}
```

8. How do you print all nodes of a given binary tree using inorder traversal without recursion?

**Answer:**

```
struct Node
{
    int data;
    struct Node* left;
    struct Node* right;
    Node (int data)
    {
        this->data = data;
        left = right = NULL;
    }
};

/* Iterative function for inorder tree
traversal */
void inOrder(struct Node *root)
{
    stack s;
    Node *curr = root;
    while (curr != NULL || s.empty() == false)
    {
        /* Reach the left most Node of the
curr Node */
```



---

```

    while (curr != NULL)
{
    /* place pointer to a tree node on
    the stack before traversing
    the node's left subtree */
    s.push(curr);
    curr = curr->left;
}
/* Current must be NULL at this point */
curr = s.top();
s.pop();
cout << curr->data << " ";
/* we have visited the node and its
left subtree. Now, it's right
subtree's turn */
curr = curr->right;
} /* end of while */
}

```

9. How do you count the number of leaf nodes in a given binary tree? Write the logic/pseudocode for the same

**Answer:**

```

struct node
{
    int data;
    struct node* left;
    struct node* right;
};
/* Function to get the count
of leaf nodes in a binary tree*/
unsigned int getLeafCount(struct node* node)
{

```

---

```

if(node == NULL)
    return 0;
if(node->left == NULL && node->right == NULL)
    return 1;
else
    return getLeafCount(node->left)+
           getLeafCount(node->right);
}
/* Helper function that allocates a new node with the
given data and NULL left and right pointers. */
struct node* newNode(int data)
{
    struct node* node = (struct node*)
        malloc(sizeof(struct node));
    node->data = data;
    node->left = NULL;
    node->right = NULL;
    return(node);
}

```

10. Given an array, find out all the pairs of numbers that equal a given sum

**Answer:**

```

int getPairsCount(int arr[], int n, int sum)
{
    int count = 0; // Initialize result
    // Consider all possible pairs and check their sums
    for (int i = 0; i < n; i++)
        for (int j = i + 1; j < n; j++)
            if (arr[i] + arr[j] == sum)
                count++;
    return count;
}

```

---

# In-Class Programming Test 2

1. Implement the bubble sort algorithm (in any programming language)

**Answer:**

```
// C++ program for implementation of Bubble sort
```

```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
void swap(int *xp, int *yp)
```

```
{
```

```
    int temp = *xp;
```

```
    *xp = *yp;
```

```
    *yp = temp;
```

```
}
```

```
// A function to implement bubble sort
```

```
void bubbleSort(int arr[], int n)
```

```
{
```

```
    int i, j;
```

```
    for (i = 0; i < n-1; i++)
```

```
        // Last i elements are already in place
```

```
        for (j = 0; j < n-i-1; j++)
```

```
            if (arr[j] > arr[j+1])
```

```
                swap(&arr[j], &arr[j+1]);
```

```
}
```

```
/* Function to print an array */
```

```
void printArray(int arr[], int size)
```

```
{
```

---

```

    int i;
    for (i = 0; i < size; i++)
        cout << arr[i] << " ";
    cout << endl;
}

// Driver code
int main()
{
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr)/sizeof(arr[0]);
    bubbleSort(arr, n);
    cout<<"Sorted array: \n";
    printArray(arr, n);
    return 0;
}

```

2. Which is the fastest sorting algorithm known to you? Is it a comparison-based sorting algorithm?

**Answer:** The fastest sorting algorithm is radix sort. It sorts an array of size  $n$  in  $O(n)$  time. Radix sort is not a comparison based sorting technique. Comparison based sorting techniques take at least  $O(n \log n)$  time.

3. Name a FIFO-based data structure. Give one practical application for this data structure

**Answer:**

Queue is used when things don't have to be processed immediately, but have to be processed in First In First Out order like Breadth First Search. This property of Queue makes it also useful in following kinds of scenarios.

1) When a resource is shared among multiple consumers. Examples include CPU scheduling, Disk Scheduling.

---

2) When data is transferred asynchronously (data not necessarily received at same rate as sent) between two processes. Examples include IO Buffers, pipes, file IO, etc.

3) In Operating systems:

- a) Semaphores
- b) FCFS ( first come first serve) scheduling, example: FIFO queue
- c) Spooling in printers
- d) Buffer for devices like keyboard

4) In Networks:

- a) Queues in routers/ switches
- b) Mail Queues

5) Variations: ( Deque, Priority Queue, Doubly Ended Priority Queue )

4. Write a program to find the second largest element in an array of integers

**Answer:**

```
// C++ program to find second largest
// element in an array
```

```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
/* Function to print the second largest elements */
```

```
void print2largest(int arr[], int arr_size)
```

```
{
```

```
    int i, first, second;
```

```
    /* There should be atleast two elements */
```

```
    if (arr_size < 2) {
```

```
        printf(" Invalid Input ");
```

```
        return;
```

```
    }
```

```
    // sort the array
```

---

```

    sort(arr, arr + arr_size);

    // start from second last element
    // as the largest element is at last
    for (i = arr_size - 2; i >= 0; i--) {
        // if the element is not
        // equal to largest element
        if (arr[i] != arr[arr_size - 1]) {
            printf("The second largest element is %d\n", arr[i]);
            return;
        }
    }

    printf("There is no second largest element\n");
}

/* Driver program to test above function */
int main()
{
    int arr[] = { 12, 35, 1, 10, 34, 1 };
    int n = sizeof(arr) / sizeof(arr[0]);
    print2largest(arr, n);
    return 0;
}

```

5. What is the complexity of the following code fragment?

```

int i, j, k = 0;
for (i = n / 2; i <= n;
i++) { for (j = 2; j <= n; j = j * 2) { k
= k + n / 2; }}

```

**Answer:**  $O(n \log n)$

**Explanation:** If you notice,  $j$  keeps doubling till it is less than or equal to  $n$ . Several times, we can double a number till it is less than  $n$  would be  $\log(n)$ .

Let's take the examples here.

---

for n = 16, j = 2, 4, 8, 16

for n = 32, j = 2, 4, 8, 16, 32

So, j would run for  $O(\log n)$  steps.

i runs for  $n/2$  steps.

So, total steps =  $O(n/2 * \log(n)) = O(n \cdot \log n)$

6. What is the time complexity of the following code:  

```
int a = 0, b = 0;
for (i = 0; i < N; i++) { a
= a + rand();}
for (j = 0; j < M;
j++) { b = b + rand();}
```

**Answer:**  $O(N + M)$  time,  $O(1)$  space

**Explanation:** The first loop is  $O(N)$  and the second loop is  $O(M)$ . Since we don't know which is bigger, we say this is  $O(N + M)$ . This can also be written as  $O(\max(N, M))$ .

7. What is the output of the following code fragment:  

```
#include<iostream>
using namespace std;
class Base1 {public: Base1() { cout << " Base1's constructor called" <<
endl; }};
class Base2 {public: Base2() { cout << "Base2's constructor called" << endl; }};
class Derived: public Base1, public Base2 {public: Derived() { cout << "Derived's constructor
called" << endl; }};
int main() {Derived d; return 0;}
```

**Answer:**

Base1's constructor called

Base2's constructor called

Derived's constructor called

**Explanation:** When a class inherits from multiple classes, constructors of base classes are called in the same order as they are specified in inheritance.

8. 

```
#include<iostream>
using namespace std;
class Test{public:Test();};
Test::Test() {
cout<<"Constructor Called \n";}
int main(){ cout<<"Start \n"; Test t1(); cout<<"End \n";
return 0;}

```

 Find the output

**Answer:**

Start

Constructor called

End

---

9. Find the output

```
#include <iostream>using namespace std;int fun(int a[],int n){int x;if(n == 1) return a[0];else x = fun(a, n - 1);if(x > a[n - 1]) return x;else return a[n - 1];}int main(){int arr[] = {12, 10, 30, 50, 100};cout << " " << fun(arr, 5) << " ";getchar();return 0;}
```

**Answer:**

100

fun() returns the maximum value in the input array a[] of size n.

10. How do you correct this program that attempts to implement binary search: Consider the following C program that attempts to locate an element x in an array Y[] using binary search. The program is erroneous. (GATE CS 2008)

```
f(int Y[10], int x) { int i, j, k; i = 0; j = 9;do { k = (i + j) / 2; if( Y[k] < x) i = k; else j = k; } while(Y[k] != x && i < j); if(Y[k] == x) printf ("x is in the array ") ; else printf (" x is not in the array ") ; }
```

**Answer:**

```
f(int Y[10], int x) {
int i, j, k;
i = 0; j = 9;
do {
    k = (i + j) / 2;
    if( Y[k] < x) i = k + 1; else j = k - 1;
} while(Y[k] != x && i < j);
if(Y[k] == x) printf ("x is in the array ") ;
else printf (" x is not in the array ") ;
}
```

**Explanation:**

The above program doesn't work for the cases where the element to be searched is the last element of Y[] or greater than the last element (or maximum element) in Y[]. For such cases, the program goes in an infinite loop because i is assigned a value as k in all iterations, and i never becomes equal to or greater than j. So the condition never becomes false.



---

# In-Class Programming Test 3

1. Write a program to find the LCM of 2 numbers

**Answer:**

```
// C++ program to find LCM of two numbers
```

```
#include <iostream>
```

```
using namespace std;
```

```
// Recursive function to return gcd of a and b
```

```
long long gcd(long long int a, long long int b)
```

```
{
```

```
if (b == 0)
```

```
    return a;
```

```
return gcd(b, a % b);
```

```
}
```

```
// Function to return LCM of two numbers
```

```
long long lcm(int a, int b)
```

```
{
```

```
    return (a / gcd(a, b)) * b;
```

```
}
```

```
// Driver program to test above function
```

```
int main()
```

```
{
```

```
    int a = 15, b = 20;
```

```
    cout <<"LCM of " << a << " and "
```

```
        << b << " is " << lcm(a, b);
```

```
    return 0;
```

```
}
```

---

2. What is the time complexity of the following program?  
`int a = 0, i = N; while (i > 0) { a += i; i /= 2; }`

**Answer:**

$O(\log N)$

Explanation: We have to find the smallest  $x$  such that  $N / 2^x \leq N$

$x = \log(N)$

3. Given a binary tree, write a program to find its height.

**Answer:**

```
// C++ program to find height of tree
```

```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
/* A binary tree node has data, pointer to left child  
and a pointer to right child */
```

```
class node
```

```
{
```

```
    public:
```

```
    int data;
```

```
    node* left;
```

```
    node* right;
```

```
};
```

```
/* Compute the "maxDepth" of a tree -- the number of  
nodes along the longest path from the root node  
down to the farthest leaf node.*/
```

```
int maxDepth(node* node)
```

```
{
```

```
    if (node == NULL)
```

```
        return 0;
```

```
    else
```

```
    {
```

---

```

        /* compute the depth of each subtree */
        int lDepth = maxDepth(node->left);
        int rDepth = maxDepth(node->right);

        /* use the larger one */
        if (lDepth > rDepth)
            return(lDepth + 1);
        else return(rDepth + 1);
    }
}

```

```

/* Helper function that allocates a new node with the
given data and NULL left and right pointers. */

```

```

node* newNode(int data)
{
    node* Node = new node();
    Node->data = data;
    Node->left = NULL;
    Node->right = NULL;

    return(Node);
}

```

```

// Driver code

```

```

int main()
{
    node *root = newNode(1);

    root->left = newNode(2);
    root->right = newNode(3);
    root->left->left = newNode(4);
    root->left->right = newNode(5);
}

```

---

```
    cout << "Height of tree is " << maxDepth(root);  
    return 0;  
}
```

4. Find the output of the following program:  

```
#include <iostream>using namespace std;int  
main() { int a = 534; int sum; if(a % 9 == 0 ? 9 : a % 9 ; else sum = 0; cout<<"The  
final sum is "<<sum; return 0;}
```

**Answer:** The final sum is 3

5. What is the difference between pass by value and pass by reference?

**Answer:**

Functions can be invoked in two ways: Call by Value or Call by Reference. These two ways are generally differentiated by the type of values passed to them as parameters.

The parameters passed to function are called actual parameters whereas the parameters received by function are called formal parameters.

**Call By Value:** In this parameter passing method, values of actual parameters are copied to function's formal parameters and the two types of parameters are stored in different memory locations. So any changes made inside functions are not reflected in actual parameters of the caller.

**Call by Reference:** Both the actual and formal parameters refer to the same locations, so any changes made inside the function are actually reflected in actual parameters of the caller.

6. There is a JAR full of candies for sale at a mall counter. JAR has the capacity N, that is JAR can contain maximum N candies when JAR is full. At any point of time. JAR can have M number of Candies where  $M \leq N$ . Candies are served to the customers. JAR never remains empty as when the last k candies are left. JAR is refilled with new candies in such a way that JAR gets full. Write a code to implement the above scenario. Display JAR at the counter with the available number of candies. Input should be the number of candies one

customer can order at a point of time. Update the JAR after each purchase and display JAR at Counter. Output should give number of Candies sold and updated number of Candies in JAR. If Input is more than candies in JAR, return: "INVALID INPUT". Given,  $N=10$ , where  $N$  is NUMBER OF CANDIES AVAILABLE,  $k \leq 5$ , where  $k$  is number of minimum candies that must be inside JAR ever. Example 1: ( $N = 10, k \leq 5$ ) Input Value 3 Output Value NUMBER OF CANDIES SOLD : 3 NUMBER OF CANDIES AVAILABLE : 7 Example : ( $N=10, k \leq 5$ ) Input Value 0 Output Value INVALID INPUT NUMBER OF CANDIES LEFT : 10

**Answer:**

```
#include <iostream>
using namespace std;
int main()
{
    int n=10, k=5;
    int num;
    cin >> num;
    if(num >= 1 && num <= 5)
    {
        cout << "NUMBER OF CANDIES SOLD : " << num << "\n";
        cout << "NUMBER OF CANDIES LEFT : " << n - num;
    }
    else
    {
        cout << "INVALID INPUT\n";
        cout << "NUMBER OF CANDIES LEFT : " << n;
    }
    return 0;
}
```

7. The Caesar cipher is a type of substitution cipher in which each alphabet in the plaintext or messages is shifted by a number of places down the alphabet. For example, with a shift of 1, P would be replaced by Q, Q would become R, and so on. To

---

pass an encrypted message from one person to another, it is first necessary that both parties have the 'Key' for the cipher, so that the sender may encrypt and the receiver may decrypt it. Key is the number of OFFSET to shift the cipher alphabet. Key can have basic shifts from 1 to 25 positions as there are 26 total alphabets. As we are designing custom Caesar Cipher, in addition to alphabets, we are considering numeric digits from 0 to 9. Digits can also be shifted by key places. For Example, if a given plain text contains any digit with values 5 and key =2, then 5 will be replaced by 7, "-"(minus sign) will remain as it is. Key value less than 0 should result into "INVALID INPUT" Example 1: Enter your PlainText: All the best Enter the Key: 1 The encrypted Text is: Bmm uif Cftu Write a function CustomCaesarCipher(int key, String message) which will accept plaintext and key as input parameters and returns its cipher text as output.

**Answer:**

```
// A C++ program to illustrate Caesar Cipher Technique
#include <iostream>
using namespace std;

// This function receives text and shift and
// returns the encrypted text
string encrypt(string text, int s)
{
    string result = "";

    // traverse text
    for (int i=0;i<text.length();i++)
    {
        // apply transformation to each character
        // Encrypt Uppercase letters
        if (isupper(text[i]))
            result += char(int(text[i]+s-65)%26 +65);

        // Encrypt Lowercase letters
        else
```

---

```

        result += char(int(text[i]+s-97)%26 +97);
    }

    // Return the resulting string
    return result;
}

// Driver program to test the above function
int main()
{
    string text="ATTACKATONCE";
    int s = 4;
    cout << "Text : " << text;
    cout << "\nShift: " << s;
    cout << "\nCipher: " << encrypt(text, s);
    return 0;
}

```

8. Write a program to implement a sorting algorithm for a linked list. Explain the steps

**Answer:**

Approach:

Get the Linked List to be sorted

Apply Bubble Sort to this linked list, in which, while comparing the two adjacent nodes, actual nodes are swapped instead of just swapping the data.

Print the sorted list

```

// C++ program to sort Linked List
// using Bubble Sort
// by swapping nodes

#include <iostream>

```

---

```
using namespace std;
```

```
/* structure for a node */
```

```
struct Node
```

```
{
```

```
    int data;
```

```
    struct Node* next;
```

```
} Node;
```

```
/*Function to swap the nodes */
```

```
struct Node* swap(struct Node* ptr1, struct Node* ptr2)
```

```
{
```

```
    struct Node* tmp = ptr2->next;
```

```
    ptr2->next = ptr1;
```

```
    ptr1->next = tmp;
```

```
    return ptr2;
```

```
}
```

```
/* Function to sort the list */
```

```
int bubbleSort(struct Node** head, int count)
```

```
{
```

```
    struct Node** h;
```

```
    int i, j, swapped;
```

```
    for (i = 0; i <= count; i++)
```

```
    {
```

```
        h = head;
```

```
        swapped = 0;
```

```
        for (j = 0; j < count - i - 1; j++)
```

```
        {
```



---

```
    struct Node* p1 = *h;
    struct Node* p2 = p1->next;

    if (p1->data > p2->data)
    {

        /* update the link after swapping */
        *h = swap(p1, p2);
        swapped = 1;
    }

    h = &(*h)->next;
}

/* break if the loop ended without any swap */
if (swapped == 0)
    break;
}
}

/* Function to print the list */
void printList(struct Node* n)
{
    while (n != NULL)
    {
        cout << n->data << " -> ";
        n = n->next;
    }
    cout << endl;
}
```

---

```
/* Function to insert a struct Node
at the beginning of a linked list */
void insertAtTheBegin(struct Node** start_ref, int data)
{
    struct Node* ptr1
        = (struct Node*)malloc(sizeof(struct Node));

    ptr1->data = data;
    ptr1->next = *start_ref;
    *start_ref = ptr1;
}
```

```
// Driver Code
```

```
int main()
{
    int arr[] = { 78, 20, 10, 32, 1, 5 };
    int list_size, i;

    /* start with empty linked list */
    struct Node* start = NULL;
    list_size = sizeof(arr) / sizeof(arr[0]);

    /* Create linked list from the array arr[] */
    for (i = 0; i < list_size; i++)
        insertAtTheBegin(&start, arr[i]);

    /* print list before sorting */
    cout <<"Linked list before sorting\n";
    printList(start);

    /* sort the linked list */
    bubbleSort(&start, list_size);
}
```

---

```
/* print list after sorting */  
cout <<"Linked list after sorting\n";  
printList(start);  
  
return 0;  
}
```

---

# Final Mock Placement Test

1. There is a chocolate factory which distributes chocolates to a class. It supplies chocolates to a class of 50 students for 30 days, keeping in mind that all students get an equal number of chocolates. For the first 10 days, only 20 students were present. How many students are accommodated into the group so that all the chocolates get consumed?

- a) 70
- b) 55
- c) 60
- d) 45

**Answer:** d) 45

**Solution:**

Let each student get 1 chocolate each, so the total number of chocolates =  $50 * 30 = 1500$  chocolates.

For first 10 days 20 students were present, so total chocolates consumed =  $20 * 10 = 200$  chocolates.

Chocolates left = 1300. These are to be distributed for the next 20 days. Therefore in each day  $1300 / 20$  chocolates were to be consumed which = 65 chocolates per day.

So the required answer =  $65 - 20 = 45$  chocolates.

2. Given,  $\log(0.318) = 0.3364$  and  $\log(0.317) = 0.3332$ , find  $\log(0.319)$ ?

- a) 0.3396
- b) 0.3394
- c) 0.3393
- d) 0..390

**Answer:** a) 0.3396

**Solution:**

$$\begin{aligned} \Rightarrow \log(0.319) &= \log(0.318) + (\log(0.318) - \log(0.317)) \\ &= 0.3364 + (0.3364 - 0.3332) \end{aligned}$$

---

$$= 0.3364 + 0.0032$$

$$= 0.3396 \text{ (Answer)}$$

3. There are a set of 20 students out of which 18 are boys and 2 are girls. They are to be seated in a circular manner so that the two girls are always separated by a boy. In how many ways can the students be arranged?

a) 12

b)  $18! \times 2$

c)  $17 \times 2!$

d)  $17!$

**Answer:** b)  $18! \times 2$

**Solution:**

There are in all 20 places out of which if one girl sits in one position then the other girl may sit either to her left or right skipping one place, which is to be filled by a boy. So total number of ways the boys can sit =  $18!$  ways and girls may alternate there sits so the total answer would be =  $18! \times 2$  ways.

4. Ram appears for an exam. In paper A he scores 18 out of 70. In paper B he scores 14 out of 30. So in which paper did he perform better?

a) Paper A

b) Paper B

**Answer:** b) Paper B

**Solution:**

We just need to calculate the percentage he scored in each paper.

In paper A:  $(18/70) \times 100 = 25.7\%$

In paper B:  $(14/30) \times 100 = 46.6\%$  (Answer)

5. A flight takes off at 2 a.m. from a place at  $18^\circ\text{N } 10^\circ\text{E}$  and landed at  $36^\circ\text{N } 70^\circ\text{W}$ , 10 hours later. What is the local time of the destination?

a) 6:00 a.m.

b) 6:40 a.m.

c) 7:40 a.m.

---

d) 7:00 a.m.

e) 8:00 a.m.

**Answer:** b) 6:40 a.m

**Solution:**

Let' calculate the difference in the number of latitudes =  $70 + 10 = 80$  degrees towards east.

We know 1 degree = 4 min, so 80 degrees =  $80 * 4 = 320$  mins

320 mins = 5 hr 20 minutes

Now the plane landed 10 hours later so time of landing = 12 hrs according to the starting place

So time at destination = 12 hrs – 5 hrs 20 min = 6 hr 40 mins(Answer)

6. An athletic run at 9 km/hr along a railway track. The track is 240m long and ahead of a train 120m long running at 45km/hr, in the same direction. how much time will the train take to completely cross the athlete?

a) 3.6 sec

b) 18 sec

c) 72 sec

d) 36 sec

**Answer:** d) 36 sec

**Solution:**

Let's try to find the relative speed =  $45 - 9 = 36$ km/hr

=  $36 * 5/18 = 10$ m/s

Now the total distance needed to be covered by the train to completely cross the athlete

=  $240 + 120 = 360$ m

So time = dist/speed =  $360/10 = 36$  seconds

7. A takes 3 days to complete a work while B takes 2 days. Both of them finish a work and earn Rs. 150. What is A's share of money?

a) Rs. 70

b) Rs. 30

c) Rs. 60

---

d) Rs. 75

**Answer:** c) 60

**Solution:**

8. Salaries of Ravi and Sumit are in the ratio 2:3. If the salary of each is increased by Rs. 4000, the new ratio becomes 40:57. What is Sumit's salary?

A) 38000

B) 46800

C) 36700

D) 50000

**Answer:** A) 38000

**Explanation:**

Let the original salaries of Ravi and Sumit be Rs.  $2x$  and Rs.  $3x$  respectively.

Then,

$$(2x+4000) / (3x+4000) = 40 / 57$$

$$\Rightarrow 57 \times (2x + 4000) = 40 \times (3x+4000)$$

$$\Rightarrow 6x = 68,000$$

$$\Rightarrow 3x = 34,000$$

$$\text{Sumit's present salary} = (3x + 4000) = \text{Rs.}(34000 + 4000) = \text{Rs. } 38,000$$

9. At what rate percent per annum will the simple interest on a sum of money be  $2/5$  of the amount in 10 years

a) 1%

b) 2%

c) 3%

d) 4%

**Answer:** Option D

**Explanation:**

Let sum =  $x$

Time = 10 years.

$$\text{S.I} = 2x / 5, \text{ [as per question]}$$

$$\text{Rate} = ((100 * 2x) / (x*5*10))\%$$

---

=> Rate = 4%

10. There is an office consisting of 38 people. 10 of them like to play golf, 15 like to play football and 20 neither play golf nor football. How many like both golf and football?

- a) 10
- b) 7
- c) 15
- d) 18

**Answer:** b) 7

**Solution:**

Let the number of people liking golf = 'A'

Let the number of people liking football = 'B'

Let the number of people liking either golf or football =  $A \cup B = 38 - 20 = 18$

People liking both golf and football =  $A \cap B$

$$= A + B - A \cup B = 10 + 15 - 18 = 7$$

11. If a dice is rolled 2 times, what is the probability of getting a pair of numbers with sum equal to 3 or 4?

- a) 6/36
- b) 5/36
- c) 1/9
- d) 1/12

**Answer:** b) 5/36

**Solution:**

Total probability = 36

We can get a sum of 3 or 4 in this many ways:

$$\Rightarrow (2, 1), (1, 2), (1, 3), (3, 1), (2, 2) = 5$$

So probability =  $5 / 36$

12. Mr Mehta chooses a number and keeps on doubling the number followed by subtracting one from it. If he chooses 3 as the initial number and he repeats the operation 30 times then what is the final result?



- 
- a)  $(2^{30}) - 1$
  - b)  $(2^{30}) - 2$
  - c)  $(2^{31}) - 1$
  - d) None of these

**Answer:** d) None of these

**Solution:**

According to the question,

$$3 * 2 - 1 = 5 =$$

$$2^{2+1}$$

$$5 * 2 - 1 = 9 =$$

$$2^{3+1}$$

$$9 * 2 - 1 = 17 =$$

$$2^{4+1}$$

Proceeding in the similar fashion, on 30 times we get

$$2^{31+1}$$

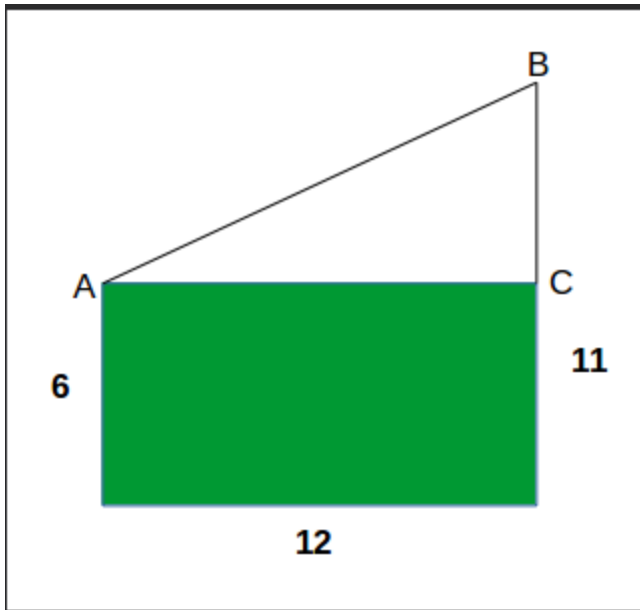
13. Two vertical walls of the length of 6 meters and 11 meters are at a distance of 12 meters apart. Find the top distance of both walls?

- a) 15 meters
- b) 13 meters
- c) 12 meters
- d) 10 meters

**Answer:** b) 13 meters

**Solution:**

Let's consider this figure,



We need to find the distance of AB,

We know  $AC = 12$  m and  $BC = 11 - 6 = 5$  m

So applying pythagoras theorem we get,

$$AB = \sqrt{12^2 + 5^2}$$

$$= 13 \text{ metres}$$

14. For  $f(m, n) = 45m + 36n$ , where  $m$  and  $n$  are integers (either positive or negative). What is the minimum positive value for  $f(m, n)$  for all values of  $m, n$  (this may be achieved for various values of  $m$  and  $n$ )?

- a) 18
- b) 12
- c) 9
- d) 16

**Answer:** c) 9

**Solution:**

To get the minimum value of  $f(m, n)$ , put  $m = 1$  and  $n = -1$ , we get

$$f(1, -1) = 9$$

---

15. A white cube(with six faces) is to be painted blue on two different faces. In how many different ways can this be achieved (two paintings are considered same if on a suitable rotation of the cube one painting can be carried to the other)?

- a) 30 ways
- b) 18 ways
- c) 4 ways
- d) 2 ways

**Answer:** d) 2

**Solution:**

This can be achieved in the following different ways::

First, painting on opposite faces can be achieved in 1 way.

Second, painting on adjacent faces can be achieved in 1 way.

Therefore in 2 ways.

16. Select the correct ANTONYM for:

Arise

- a) Appear
- b) Dive
- c) Occur
- d) Emerge

**Answer:** B

17. Select the correct SYNONYM for:

Together

- a) Common
- b) Obstinate
- c) Same
- d) Jointly

**Answer:** D

18. Select the correct SYNONYM for:

Almost

- 
- a) Crafty
  - b) Nearly
  - c) Relevant
  - d) Summary

**Answer:** B

19. Select the most suitable word that can be replaced with the highlighted word to keep the meaning of the statement the same.

Statement: Many times in history, humans have changed their mode of communication in society.

- a) Evolved
- b) Destroyed
- c) Altered
- d) Pledged

**Answer:**C

20. In his first public speech, the newly elected defence minister said that leaks in defence matters could potentially \_\_\_\_\_ military operations.

- A) disturb
- B) strengthen
- C) jeopardize
- D) promote

**Solution :** C) jeopardize

21. Select a word from the given options that fit the blank most appropriately.

Statement: A journey \_\_\_\_\_ a thousand miles begins with a single step

- a) with
- b) of
- c) in
- d) at

**Answer:**B

---

22. Select a word from the given options that fit the blank most appropriately.

Statement: Absence makes \_\_\_\_\_ heart grow fonder

- a) a
- b) an
- c) the

**Answer:C**

23. Select a word from the given options that fit the blank most appropriately.

Statement: Drugs and Alcohol \_\_\_\_\_ together to \_\_\_\_\_ the risk of cancer in both men and women.

- a) result, aggravate
- b) act, increase
- c) mix, lower
- d) put, arrest

**Answer:B**

24. Select the option that replaces the error (underlined) most appropriately

Sentence – It has been found by the researchers that children with high blood sugar are at increased risk for developing heart problems.

- A) were at increased risk
- B) have high risk
- C) are increasing riskly
- D) No correction required

- a) A
- b) B
- c) C
- d) D
- e) No Error

**Answer:A**

---

25. Find the part of the sentence that is incorrect in usage :

- A) Agitated over the delay in getting arrears,
- B) factory workers protested against the president
- C) when he reaches the factory.
- D) No Error

- a) A
- b) B
- c) C
- d) D
- e) No Error

**Answer:C**

**Explanation:**

Correct: when he reached the factory

26. Re-arrange the parts of the paragraph so as to make a meaningful passage.

- A) Infact, his belief was that customers are the origin, the source of money any company has.
- B) The owner of Walmart, Sam Walton, built his empire on one principle – Customer is God.
- C) So it is not the company which pays, the customer does.
- D) The customer thus has the right to fire anybody in the company, from a salesman to the chairman.

- a) ABCD
- b) BACD
- c) BADC
- d) ACBD

**Answer:BACD**

27. Re-arrange the parts of the sentence so as to make a meaningful sentence.

- A) The prime minister
- B) with the guards
- C) along

---

D) has arrived

a) ABCD

b) ACBD

c) ADBC

d) ADCB

**Answer:** ADCB

28. Study of birds

a) Orology

b) Optology

c) Ophthalmology

d) Ornithology

**Answer:**D

29. A name adopted by an author in his writings

a) Nickname

b) Pseudonym

c) Nomenclature

d) Title

**Answer:**B

30. Choose the word from the options that can best express the opposite of the given word

Tiny

a) Soft

b) Average

c) Enormous

d) Weak

**Answer:** C

---

31. He loves to solve programming problems \_\_\_\_\_ most efficiently.

- a) in
- b) on
- c) over
- d) with

**Answer: A**

32. GFG portal \_\_\_\_\_ created to provide well written, well thought and well-explained solutions for selected questions.

- a) is
- b) was
- c) has been
- d) have been

**Answer: D**

33. Choose the word from the options that can best express the meaning of the given word

Short

- a) Limited
- b) Small
- c) Little
- d) Brief

**Answer: D**

34. Choose the word from the options that can best express the meaning of the given word

Clever

- a) Obstinate
- b) Handsome
- c) Canny
- d) Stout

**Answer: C**



---

35. Complete the sentence:

Universalism is to particularism as diffuseness is to \_\_\_\_\_

- (A) specificity
- (B) neutrality
- (C) generality
- (D) adaptation

**Answer:** (A)

**Explanation:** Diffuseness means spreading widely.

36. Were you a bird, you \_\_\_\_\_ in the sky.

- (A) would fly
- (B) shall fly
- (C) should fly
- (D) shall have flown

**Answer:** (A)

**Explanation:** Were you a bird, you would fly in the sky.

37. choose the grammatically INCORRECT sentence:

- (A) He is of Asian origin.
- (B) They belonged to Africa.
- (C) She is an European.
- (D) They migrated from India to Australia.

**Answer:** (C)

**Explanation:** The correct sentence is “She is a European.”

‘an’ applies to those words which get pronounced with a, e, i, o, u.

Here the pronunciation is “Yuropean” ( E-silent; has a “Y” sound) , similar to ‘ a University’.

Hence a European.

38. After several defeats in wars, Robert Bruce went in exile and wanted to commit suicide. Just before committing suicide, he came across a spider attempting tirelessly to have its net. Time and again, the spider failed but that did not deter it to refrain from making attempts. Such attempts by the spider made Bruce curious. Thus, Bruce started

---

observing the near-impossible goal of the spider to have the net. Ultimately, the spider succeeded in having its net despite several failures. Such act of the spider encouraged Bruce not to commit suicide. And then, Bruce went back again and won many a battle, and the rest is history.

Which one of the following assertions is best supported by the above information?

- (A) Failure is the pillar of success.
- (B) Honesty is the best policy.
- (C) Life begins and ends with adventures.
- (D) No adversity justifies giving up hope.

**Answer:** (D)

**Explanation:** None of A, B and C make sense.

Only option D “No adversity justifies giving up hope” is related to the given information.

39. Choose the most appropriate alternative from the options given below to complete the following sentence:

Despite several ----- the mission succeeded in its attempt to resolve the conflict.

- (A) attempts
- (B) setbacks
- (C) meetings
- (D) delegations

**Answer:** (B)

40. Which one of the following options is the closest in meaning to the word given below?

Mitigate

- a) Diminish
- b) Divulge
- c) Dedicate
- d) Denote

**Answer:** (a)

---

41. Choose the grammatically INCORRECT sentence:

- (A) They gave us the money back less the service charges of Three Hundred rupees.
- (B) This country's expenditure is not less than that of Bangladesh.
- (C) The committee initially asked for a funding of Fifty Lakh rupees, but later settled for a lesser sum.
- (D) This country's expenditure on educational reforms is very less.

**Answer:** (D)

42. Wanted Temporary, Part-time persons for the post of Field Interviewer to conduct personal interviews to collect and collate economic data. Requirements: High School-pass, must be available for Day, Evening and Saturday work. Transportation paid, expenses reimbursed. Which one of the following is the best inference from the above advertisement?

- (A) Gender-discriminatory
- (B) Xenophobic
- (C) Not designed to make the post attractive
- (D) Not gender-discriminatory

**Answer:** (C)

**Explanation:** There is no mention of gender. Xenophobia also doesn't fit.

43. Find wrong number in series:

8, 24, 12, 36, 18, 54, 26

12

24

18

26

**Answer:**

15

**Explanation:**

Two alternate series:

$8 * 3 = 24$

---

$24 / 2 = 12$

$12 * 3 = 36$

$36 / 2 = 18$

$18 * 3 = 54$

$54 / 2 = 27$

44. Find wrong number in series:

7, 26, 63, 124, 215, 342, 496

7

63

215

496

**Answer:**

496

45. What is the probability that  $x^3 - 8 = 0$  when  $x$  is selected from a set of 8 integers?

I. The smallest number in the set is -11

II. The arithmetic mean of the set is  $1/8$ .

(A) A

(B) B

(C) C

(D) D

(E) E

**Answer:** (D)

46. How many children are there in a row?

Statement I. A is tenth from the left in the row.

Statement II. B is exactly in the middle and there are fifteen children towards his right.

a) (a)

b) (b)

c) (c)

d) (d)

e) (e)

---

**Answer: (b)**

47. Consider the following phrase:

Statement: Some S are L

Some C are P

Some P are R

Conclusions:

I. Some P are L

II. Some C are R

Choose the correct option given below:

- a) only conclusion I is true.
- b) only conclusion II is true.
- c) either conclusion I or conclusion II is true
- d) neither conclusion I nor conclusion II is true
- e) both conclusions I and II are true.

**Answer: (d)**

48. What is the value of  $(x^2/y^2) + (y^2/x^2)$ ?

I.  $x/y + y/x = 8$

II.  $x/y - y/x = 4$

a) (a)

b) (b)

c) (c)

d) (d)

e) (e)

**Answer: (c)**

49. Consider the following phrase:

Statement: Mutual funds are subject to market risk

Assumptions:

I. One must not invest in Mutual Funds

II. One must consult a financial advisor before investing in this

---

Choose the correct option given below.

- a) If only assumption I is implicit
- b) If only assumption II is implicit.
- c) If either I or II is implicit.
- d) If neither I nor II is implicit.
- e) If both I and II are implicit.

**Answer:** (b)

50. Find the wrong number in the series:

1, -8, 27, 64, 125, -216

- a. 27
- b. 64
- c. 125
- d. -8

**Answer:** 64

**Explanation:**  $1^3, (-2)^3, 3^3, (-4)^3$

51. Write a program to remove duplicates from an integer array.

**Answer:** `/* C++ program to remove duplicate elements in an array */`

```
#include<iostream>
```

```
using namespace std;
```

```
int remove_duplicate_elements(int arr[], int n)
```

```
{
```

```
if (n==0 || n==1)
```

```
return n;
```

```
int temp[n];
```

```
int j = 0;
```

---

```
int i;
for (i=0; i<n-1; i++)
if (arr[i] != arr[i+1])
temp[j++] = arr[i];
temp[j++] = arr[n-1];
```

```
for (i=0; i<j; i++)
arr[i] = temp[i];
```

```
return j;
}
```

```
int main()
{
int n;
cin >> n;
int arr[n];
int i;
for(i = 0; i < n; i++)
{
cin >> arr[i];
}
```

```
n = remove_duplicate_elements(arr, n);
```

```
for (i=0; i<n; i++)
cout << arr[i] << " ";
```

```
return 0;
}
```

---

52. What is the output of the following program?

```
#include<iostream>
using namespace std;
class Test {
    int value;
public:
    Test(int v);
};
Test::Test(int v) {
    value = v;
}
int main() {
    Test t[100];
    return 0;
}
```

**Answer:** Compile Error

**Explanation:** The class Test has one user defined constructor “Test(int v)” that expects one argument. It doesn’t have a constructor without any argument as the compiler doesn’t create the default constructor if the user defines a constructor (See this). Following modified program works without any error.

53. Write a recursive function to sort the elements in an array

**Answer:**

```
// C/C++ program for recursive implementation
// of Bubble sort
#include <bits/stdc++.h>
using namespace std;

// A function to implement bubble sort
void bubbleSort(int arr[], int n)
{
    // Base case
```



---

```

    if (n == 1)
        return;

    // One pass of bubble sort. After
    // this pass, the largest element
    // is moved (or bubbled) to end.
    for (int i=0; i<n-1; i++)
        if (arr[i] > arr[i+1])
            swap(arr[i], arr[i+1]);

    // Largest element is fixed,
    // recur for remaining array
    bubbleSort(arr, n-1);
}

/* Function to print an array */
void printArray(int arr[], int n)
{
    for (int i=0; i < n; i++)
        printf("%d ", arr[i]);
    printf("\n");
}

// Driver program to test above functions
int main()
{
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr)/sizeof(arr[0]);
    bubbleSort(arr, n);
    printf("Sorted array : \n");
    printArray(arr, n);
    return 0;
}

```

---

}

54. What is the time complexity for the following program  
int i, j,  
k = 0; for (i = n / 2; i <= n; i++) { for (j = 2; j <= n; j = j \* 2)  
{ k = k + n / 2; } }

**Answer:**  $O(n \log n)$

**Explanation:** If you notice, j keeps doubling till it is less than or equal to n. Several times, we can double a number till it is less than n would be  $\log(n)$ .

Let's take the examples here.

for n = 16, j = 2, 4, 8, 16

for n = 32, j = 2, 4, 8, 16, 32

So, j would run for  $O(\log n)$  steps.

i runs for  $n/2$  steps.

So, total steps =  $O(n/2 * \log(n)) = O(n * \log n)$

55. What are the benefits of multithreaded programming?

**Answer:**

**Responsiveness –**

Multithreading in an interactive application may allow a program to continue running even if a part of it is blocked or is performing a lengthy operation, thereby increasing responsiveness to the user.

In a non multi threaded environment, a server listens to the port for some request and when the request comes, it processes the request and then resumes listening to another request. The time taken while processing a request makes other users wait unnecessarily. Instead a better approach would be to pass the request to a worker thread and continue listening to port.

For example, a multi threaded web browser allows user interaction in one thread while a video is being loaded in another thread. So instead of waiting for the whole web-page to load the user can continue viewing some portion of the web-page.

**Resource Sharing –**

Processes may share resources only through techniques such as-

- 
- Message Passing
  - Shared Memory

Such techniques must be explicitly organized by programmers. However, threads share the memory and the resources of the process to which they belong by default.

The benefit of sharing code and data is that it allows an application to have several threads of activity within the same address space.

### **Economy –**

Allocating memory and resources for process creation is a costly job in terms of time and space.

Since, threads share memory with the process it belongs to, it is more economical to create and context switch threads. Generally much more time is consumed in creating and managing processes than in threads.

In Solaris, for example, the creating process is 30 times slower than creating threads and context switching is 5 times slower.

### **Scalability –**

The benefits of multi-programming greatly increase in case of multiprocessor architecture, where threads may be running parallel on multiple processors. If there is only one thread then it is not possible to divide the processes into smaller tasks that different processors can perform.

Single threaded process can run only on one processor regardless of how many processors are available.

Multi-threading on a multiple CPU machine increases parallelism.

56. Given a singly linked list, find the middle of the linked list.

For example, if the given linked list is 1->2->3->4->5 then the output should be 3. If there are even nodes, then there would be two middle nodes, we need to print the second middle element. For example, if the given linked list is 1->2->3->4->5->6 then output should be 4.

### **Answer:**

```
// C++ program for the above approach
```

---

```
#include <iostream>
using namespace std;

class Node{
    public:
        int data;
        Node *next;
};

class NodeOperation{
public:

    // Function to add a new node
    void pushNode(class Node** head_ref,int data_val){

        // Allocate node
        class Node *new_node = new Node();

        // Put in the data
        new_node->data = data_val;

        // Link the old list off the new node
        new_node->next = *head_ref;

        // move the head to point to the new node
        *head_ref = new_node;
    }

    // A utility function to print a given linked list
    void printNode(class Node *head){
        while(head != NULL){
```

```

        cout << head->data << "->";
        head = head->next;
    }
    cout << "NULL" << endl;
}

void printMiddle(class Node *head){
    struct Node *slow_ptr = head;
    struct Node *fast_ptr = head;

    if (head!=NULL)
    {
        while (fast_ptr != NULL && fast_ptr->next != NULL)
        {
            fast_ptr = fast_ptr->next->next;
            slow_ptr = slow_ptr->next;
        }
        cout << "The middle element is [" << slow_ptr->data << "]" << endl;
    }
}

};

// Driver Code
int main(){
    class Node *head = NULL;
    class NodeOperation *temp = new NodeOperation();
    for(int i=5; i>0; i--){
        temp->pushNode(&head, i);
        temp->printNode(head);
        temp->printMiddle(head);
    }
    return 0;
}

```

---

```
}
```

57. Given two linked lists, insert nodes of second list into first list at alternate positions of first list. For example, if first list is 5->7->17->13->11 and second is 12->10->2->4->6, the first list should become 5->12->7->10->17->2->13->4->11->6 and second list should become empty. The nodes of the second list should only be inserted when there are positions available. For example, if the first list is 1->2->3 and second list is 4->5->6->7->8, then first list should become 1->4->2->5->3->6 and second list to 7->8.

**Answer:**

```
// C++ program to merge a linked list into another at
```

```
// alternate positions
```

```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
// A nexted list node
```

```
class Node
```

```
{
```

```
    public:
```

```
    int data;
```

```
    Node *next;
```

```
};
```

```
/* Function to insert a node at the beginning */
```

```
void push(Node ** head_ref, int new_data)
```

```
{
```

```
    Node* new_node = new Node();
```

```
    new_node->data = new_data;
```

```
    new_node->next = (*head_ref);
```

```
    (*head_ref) = new_node;
```

```
}
```

```
/* Utility function to print a singly linked list */
```

```
void printList(Node *head)
```

```
{
```

```
    Node *temp = head;
```

---

```

    while (temp != NULL)
    {
        cout<<temp->data<<" ";
        temp = temp->next;
    }
    cout<<endl;
}

// Main function that inserts nodes of linked list q into p at
// alternate positions. Since head of first list never changes
// and head of second list may change, we need single pointer
// for first list and double pointer for second list.
void merge(Node *p, Node **q)
{
    Node *p_curr = p, *q_curr = *q;
    Node *p_next, *q_next;
    // While there are available positions in p
    while (p_curr != NULL && q_curr != NULL)
    {
        // Save next pointers
        p_next = p_curr->next;
        q_next = q_curr->next;
        // Make q_curr as next of p_curr
        q_curr->next = p_next; // Change next pointer of q_curr
        p_curr->next = q_curr; // Change next pointer of p_curr
        // Update current pointers for next iteration
        p_curr = p_next;
        q_curr = q_next;
    }
    *q = q_curr; // Update head pointer of second list
}

// Driver code
int main()

```

---

```

{
    Node *p = NULL, *q = NULL;
    push(&p, 3);
    push(&p, 2);
    push(&p, 1);
    cout<<"First Linked List:\n";
    printList(p);
    push(&q, 8);
    push(&q, 7);
    push(&q, 6);
    push(&q, 5);
    push(&q, 4);
    cout<<"Second Linked List:\n";
    printList(q);
    merge(p, &q);
    cout<<"Modified First Linked List:\n";
    printList(p);
    cout<<"Modified Second Linked List:\n";
    printList(q);
    return 0;
}

```

58. Given a binary tree, find its height.

**Answer:**

```

// C++ program to find height of tree
#include <bits/stdc++.h>
using namespace std;

/* A binary tree node has data, pointer to left child
and a pointer to right child */

```



---

```

class node
{
    public:
    int data;
    node* left;
    node* right;
};

/* Compute the "maxDepth" of a tree -- the number of
    nodes along the longest path from the root node
    down to the farthest leaf node.*/
int maxDepth(node* node)
{
    if (node == NULL)
        return 0;
    else
    {
        /* compute the depth of each subtree */
        int lDepth = maxDepth(node->left);
        int rDepth = maxDepth(node->right);

        /* use the larger one */
        if (lDepth > rDepth)
            return(lDepth + 1);
        else return(rDepth + 1);
    }
}

/* Helper function that allocates a new node with the
given data and NULL left and right pointers. */
node* newNode(int data)
{

```

```

node* Node = new node();
Node->data = data;
Node->left = NULL;
Node->right = NULL;

return(Node);
}

// Driver code
int main()
{
    node *root = newNode(1);

    root->left = newNode(2);
    root->right = newNode(3);
    root->left->left = newNode(4);
    root->left->right = newNode(5);

    cout << "Height of tree is " << maxDepth(root);
    return 0;
}

```

59. Given an expression string x. Examine whether the pairs and the orders of “{“,”}”;“(,)””; “[,]” are correct in exp. For example, the function should return 'true' for exp = “[()]{}{[()()]()}” and 'false' for exp = “[()]”. Example 1: Input: {[()]} Output: true Explanation: { ( [ ] ) }. Same colored brackets can form balanced pairs, with 0 number of unbalanced brackets. Example 2: Input: () Output: true Explanation: (). Same bracket can form balanced pairs, and here only 1 type of bracket is present and in a balanced way. Example 3: Input: ([)] Output: false Explanation: ([]. Here the square bracket is balanced but the small bracket is not balanced and Hence, the output will be unbalanced. Your Task: This is a function problem. You only need to complete the function ispar() that takes a string as a parameter and returns a boolean value true if brackets are balanced else returns false.

---

**Answer:**

```
// CPP program to check for balanced brackets.
#include <bits/stdc++.h>
using namespace std;

// function to check if brackets are balanced
bool ispar(string expr)
{
    stack<char> s;
    char x;

    // Traversing the Expression
    for (int i = 0; i < expr.length(); i++)
    {
        if (expr[i] == '(' || expr[i] == '['
            || expr[i] == '{')
        {
            // Push the element in the stack
            s.push(expr[i]);
            continue;
        }

        // IF current current character is not opening
        // bracket, then it must be closing. So stack
        // cannot be empty at this point.
        if (s.empty())
            return false;

        switch (expr[i]) {
            case ')':

                // Store the top element in a
```

```

        x = s.top();
        s.pop();
        if (x == '{' || x == '[')
            return false;
        break;

    case '}':

        // Store the top element in b
        x = s.top();
        s.pop();
        if (x == '(' || x == '[')
            return false;
        break;

    case ']':

        // Store the top element in c
        x = s.top();
        s.pop();
        if (x == '(' || x == '{')
            return false;
        break;
    }
}

// Check Empty Stack
return (s.empty());
}

// Driver code
int main()

```

---

```
{  
    string expr = "{}[]";  
  
    // Function call  
    if (ispar(expr))  
        cout << "Balanced";  
    else  
        cout << "Not Balanced";  
    return 0;  
}
```

---

# In Class verbal Test

Directions (Questions.1-3): Choose the word/group of words that is MOST SIMILAR in meaning to the word/group of words printed in bold as used in the passage.

1. Clamored

**Answer:** Cried

2. Stimulate

**Answer:** Goad

3. Spur

**Answer:** Trigger

Directions (Question. 4 to 5): Choose the word/group of words which is MOST OPPOSITE in meaning of the word/group of words printed in bold as used in the passage

4. Viable

**Answer:** Impossible

5. Sluggish

**Answer:** Alert

Directions (Questions.6-10): Read each sentence to find out whether there is any grammatical or idiomatic error in it. If any error is present choose that particular option as an answer. If there is 'NO error', the answer is 'e'. (Ignore errors of punctuation, if any.)

6.

- a) The CBI has filed a petition in NIA court
- b) Here seeking its permission to interrogate
- c) A Sri Lankan national held for
- d) Allegedly spying for Pakistan
- e) No error

---

**Answer:** The CBI has filed a petition in NIA Court

7.

- a) The government apprised the court
- b) About instituting another committee
- c) That would review and draft amendments
- d) To the five key laws over environment, forest, wildlife, air and water
- e) No error

**Answer:** About instituting another committee

8.

- a) In the absence of a legal guarantee of safety and privacy
- b) The court should not ask for sources
- c) To be revealed, especially when the cases at stake
- d) Involve powerful people in politics and business
- e) No error

**Answer:** No error

9.

- a) Government plan to link the universal health assurance scheme
- b) For providing medical treatment
- c) To all citizens with Aadhar number
- d) To check ghost beneficiaries
- e) No error

**Answer:** Government plan to link the universal health assurance scheme

10.

- a) The supreme Court has ruled that
- b) Citizens have no fundamental right
- c) To carry out business in potable liquor and the state
- d) Has the power to prohibit such trade
- e) No error

---

**Answer:** To carry out business in potable liquor and the state

11. Current deposit accounts are opened to \_\_\_\_\_ transactions of business and trade and hence not \_\_\_\_\_ to any interest from the bank.

**Answer:** meet, entitled

12. The opening up of insurance sector has resulted in \_\_\_\_\_ of new products, particularly the unit-linked products which offer both capital \_\_\_\_\_ and insurance cover and have attracted the attention of the insured.

**Answer:** introduction, appreciation

13. The Reserve Bank exercises its supervisory role \_\_\_\_\_ the financial system \_\_\_\_\_ commercial and urban cooperative banks, financial institutions, and NBFCs, through the Board of Financial Supervision.

**Answer:** over, encompassing

14. It is \_\_\_\_\_ that congress leader Shashi Tharoor had to lose his job as the party's spokesperson \_\_\_\_\_ for praising a man who had called Tharoor's wife an Rs. 50 crore girlfriend.

**Answer:** ironical, allegedly

15. More than two lakh students \_\_\_\_\_ up to two years preparing for the Common Admission Test (CAT) all in the attempt to \_\_\_\_\_ a seat at one of the top business schools in the century.

**Answer:** spend, secure

Directions (Questions. 16 to 20): In the following questions, a sentence has been given with some of its parts in bold, to make the sentence grammatically correct replace the bold part with correct alternative options given below. If the sentence correct as it is given option 'D' (No correction required).



---

16. In the past two years, Goa witnessed high growth in household saving and was one of the few state where inflation declined.

**Answer:** Saving and was one of the few states

17. India should not tolerate Chinese incursion of its territory and realize that appeasement of an assertive China is a recipe for global marginalization.

**Answer:** incursions into its territory

18. By deciding to allow the Indian private sector to bid for the entire lot of six submarines, the government has ended a debate.

**Answer:** No correction required

19. To illustrate my point, I have been taking the example of three cars from three different segments.

**Answer:** I have taken

20. The congress working committee will be restructure and young faces will be inducted.

**Answer:** will be restructured

Directions (Questions 21-30): In the following passage, some of the words have been left out, each of which is indicated by a number. Find the suitable word the options given against each number and fill up the blanks with appropriate words to make the paragraph meaningfully complete. By choosing Jean Tirole for the 2014 Nobel Prize in economics, the Noble Committee tips its hat at the regulation of economic activity. Tirole has made fundamental

21. To the branch of economics called Industrial organization, which

**Answer:** Contributions

22. Insights into regulation, apart from other things.

**Answer:** Yields

---

23. With degrees in engineering in 1981, Tirole was eminently

**Answer:** Armed

24. To display game theory to model the incentives of the government, the regulator, and the regulated

**Answer:** Placed

25. Under different conditions of information

**Answer:** Entity

26. To give a formal, unified basis for coherent regulation. Newspapers are spared charges of predatory pricing, thanks to Tirole's

**Answer:** Sharing

27. Of platform businesses, a case of what economists call two-sided markets. Low cover prices-TV channels are often free, as are a search engine and social media platform – go hand in hand with higher advertising

**Answer:** Analysis

28. So a business case

**Answer:** Revenue

29. Sustained pricing below the cost of production, rather than

**Answer:** Motivates

30. Desire to kill the competition. Along with long-time collaborator Jean- Jacques Laffont, Tirole has used formal analysis not only to validate intuitive judgments on optimal regulation but also to institute counter-intuitive insights.

**Answer:** More



hemanaac s &lt;naaccriteriaa12022@gmail.com&gt;

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**Fwd: Report**

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**Ms. N.VIJAYALAKSHMI, IQAC Coordinator & Head, Dept. of Computer Science, SIGC**

8 August 2023 at

&lt;vijayalakshmi@sigc.edu&gt;

15:58

To: "naaccriteriaa12022@gmail.com" &lt;naaccriteriaa12022@gmail.com&gt;

----- Forwarded message -----

From: **Aditya Sambamoorthy** <aditya@inlustro.co>

Date: Thu, 27 Jan, 2022, 9:31 PM

Subject: Fwd: Report

To: CEO Sigc &lt;ceo@sigc.edu&gt;, Principal Sigc &lt;principal@sigc.edu&gt;

Cc: DR.PRABA V &lt;praba@sigc.edu&gt;, Deepa G &lt;deepa@inlustro.co&gt;, MS.VIJAYALAKSHMI N &lt;vijayalakshmi@sigc.edu&gt;

Respected CEO and Principal,

Attached along with this email is a detailed report about the Corps d'elite Communication Bootcamp conducted for the students identified by our Screening Tool.

Looking forward to hearing from you soon and taking this collaboration to the next level by instituting the REAL initiative for years 1,2 and 3 for the upcoming batches to instil a robust communication framework in the students, as discussed with the academic team at IG earlier last year.

Kind Regards,  
Aditya Sambamoorthy

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 **Training Evaluation Report.pdf**

156K

SI No	Student Name	Department	Quantitative in Placement	Verbal in Placement	Programming in Placement	Final Mock Placement Test	Verbal Ability	Quantitative Quiz	Email Writing	In-Class Programming Test 1	In-Class Programming Test 2	In-Class Programming Test 3	In Class verbal Test	Total	Average Verbal Score	Average Quantitative score	Programming Average score	Scope for Improvement
0	Full marks		20	30	20	70	30	20	5	20	20	40	30	235				
1	UmaMaheswari V	BSC Physics	19	27	13	59	30	18	0	20	13	31	19	190	80	92.5	77	Overall Good Performance. Keep up the Good work
2	R.SUSMITHA	B.Sc COMPUTER SCIENCE	18	21	10	49	30	19	3	16	17	20	21	175	78.94736842	92.5	63	While Quantitative and Verbal Scores are good, More focus is needed on Programming
3	M.Thilagajothi	BCA	16	20	0	36	30	18	3	0	15	20	29	151	86.31578947	85	35	While Quantitative and Verbal Scores are good, More focus is needed on Programming
4	Swetha c	Bca	18	25	10	53	24	11	3	15	13	25	2	146	56.84210526	72.5	63	Requires more focus on Quants, Verbal and Programming - Specially Verbal
5	Swetha K	Msc maths	19	24	14	57	21	19	5	11	0	30	0	143	52.63157895	95	55	Requires more focus on Verbal and Programming
6	M.Jayanthi	B.Sc Computer Science	14	15	7	36	14	7	5	11	12	30	19	134	55.78947368	52.5	60	Requires more focus on Quants, Verbal and Programming - Specially Quants
7	S.Priyadarshini	Msc Mathematics	16	14	0	30	17	13	5	14	11	31	7	128	45.26315789	72.5	56	Requires more focus on Quants, Verbal and Programming - Specially Verbal
8	Induja	Mathematics	11	22	6	39	29	4	2	5	0	25	23	127	80	37.5	36	Requires more focus on Quants and Programming
9	R.Hemalatha	III BSC Computer Science	13	18	8	39	30	18	3	11	10	10	14	125	68.42105263	77.5	29	Requires more focus on Verbal and Programming
10	Saranya G	B.Sc Computer Science	5	6	7	18	29	18	5	0	19	6	20	119	63.15789474	57.5	36	Requires more focus on Quants, Verbal and Programming - Specially Programming
11	Idhazhya C	BCA	17	6	5	28	18	16	0	9	9	9	21	116	47.36842105	82.5	38	Requires more focus on Quants, Verbal and Programming - Specially Programming
12	Aruljayapriya A	BCA	7	9	2	18	24	16	5	10	12	17	9	111	49.47368421	57.5	41	Requires more focus on Quants, Verbal and Programming - Specially Programming
13	S.Gayathri	Msc Mathematics	0	0	0	25	15	0	0	14	0	15	27	106	54.73684211	37.5	39	Requires more focus on Quants, Verbal and Programming - Specially Quants
14	M.Jayasri	Msc Mathematics	16	12	1	29	9	18	0	2	4	17	25	104	48.42105263	85	24	Requires more focus on Verbal and Programming - Specially Programming
15	Yogalakshmi S	BCA	18	24	4	46	26	11	5	0	0	15	0	103	57.89473684	72.5	19	Requires more focus on Quants, Verbal and Programming - Specially Programming
16	M.Padma Priya	Msc Mathematics	0	0	0	29	17	0	0	8	0	20	29	103	61.05263158	42.5	28	Requires more focus on Quants, Verbal and Programming - Specially Programming
17	S.Preethi	BCA	16	19	5	40	27	0	5	0	12	5	0	99	53.68421053	40	32	Requires more focus on Quants, Verbal and Programming - Specially Programming
18	K.Madhu meetha	B.Sc, Information Technology	16	25	7	48	6	18	5	17	0	0	0	94	37.89473684	85	24	Requires more focus on Verbal and Programming - Specially Programming
19	A.V.RAKSHAYA	MATHEMATICS	13	13	10	36	0	0	0	0	10	23	22	91	36.84210526	32.5	43	Requires more focus on Quants Verbal and Programming - Specially Quants
20	GUNAPRIYA.K	Bsc PHYSICS	18	19	0	37	30	18	5	0	0	0	0	90	56.84210526	90	0	Requires more focus on Verbal and Programming - Specially Programming
21	K.Thilaka	BSC Mathematics	11	10	6	27	6	2	2	5	4	22	21	89	41.05263158	32.5	37	Requires more focus on Quants, Verbal and Programming - Specially Quants
22	D.Divya	Bsc.Physics	16	17	0	38	30	18	3	0	0	0	0	89	52.63157895	85	5	Requires more focus on Verbal and Programming - Specially Programming
23	R.sangavi	BCA	13	26	5	44	27	12	5	0	0	0	0	88	61.05263158	62.5	5	Requires more focus on Quants, Verbal and Programming - Specially Programming
24	Abirami M	III BCA A	7	10	0	17	30	18	0	4	0	8	10	87	52.63157895	62.5	12	Requires more focus on Quants, Verbal and Programming - Specially Programming
25	Maheswari S	Msc Computer Science	0	0	0	29	9	5	0	0	17	27	0	87	35.78947368	22.5	44	Requires more focus on Quants, Verbal and Programming - Specially Quants
26	Vaishali M	BCA	15	25	6	46	24	11	5	0	0	0	0	86	56.84210526	65	6	Requires more focus on Quants, Verbal and Programming - Specially Programming
27	C.Kalaiselvi	Computer Science	10	17	3	30	4	8	5	12	0	10	11	80	38.94736842	45	25	Requires more focus on Quants, Verbal and Programming - Specially Programming
28	Narmatha.V	BCA	14	25	0	39	25	11	5	0	0	0	0	80	57.89473684	62.5	0	Requires more focus on Quants, Verbal and Programming - Specially Programming
29	PoojaSree V	Msc Computer Science	0	0	0	26	17	5	0	20	0	7	5	80	37.89473684	42.5	27	Requires more focus on Quants, Verbal and Programming - Specially Programming
30	Bhuvaneshwari S	BCA	12	15	2	29	4	5	3	7.5	11.5	9	9	78	32.63157895	42.5	30	Requires more focus on Quants, Verbal and Programming - Specially Programming
31	GAJALAKSHMI T	III BCA	7	10	11	28	10	0	3	4	5	20	8	78	32.63157895	17.5	40	Requires more focus on Quants, Verbal and Programming - Specially Quants
32	Lalitha. S	Computer science	10	8	4	22	14	3	5	0	6	17	9	76	37.89473684	32.5	27	Requires more focus on Quants, Verbal and Programming - Specially Programming
33	Abirami M	3rd B.Sc Information Technology	20	28	8	56	0	0	3	0	0	0	16	75	49.47368421	50	8	Requires more focus on Quants, Verbal and Programming - Specially Programming
34	Dhana Priya C	Msc Computer Science	0	0	0	30	17	5	0	20	0	0	3	75	40	42.5	20	Requires more focus on Quants, Verbal and Programming - Specially Programming
35	ANUSUYA R	B.sc IT	12	17	5	34	22	9	3	5	0	0	0	73	44.21052632	52.5	10	Requires more focus on Quants, Verbal and Programming - Specially Programming
36	B.Bharathi	Msc Computer Science	0	0	0	11	2	5	0	13	0	11	0	71	47.36842105	5	24	Requires more focus on Quants, Verbal and Programming - Specially Quants
37	K.Keerthana	BSC Computer Science	7	22	4	33	0	0	0	8	0	25	4	70	27.36842105	17.5	37	Requires more focus on Quants, Verbal and Programming - Specially Quants
38	Atchaya R	MSC	0	0	0	29	16	5	0	10	0	10	0	70	35.78947368	40	20	Requires more focus on Quants, Verbal and Programming - Specially Programming
39	M.Atchaya	III BCA A	8	13	0	21	19	6	2	0	0	0	20	68	56.84210526	35	0	Requires more focus on Quants, Verbal and Programming - Specially Programming
40	Savitha Sri S	BSC Physics	8	9	0	17	30	18	3	0	0	0	0	68	44.21052632	65	0	Requires more focus on Quants, Verbal and Programming - Specially Programming
41	Kiruthiga. R	Information technology	14	13	0	27	9	12	2	0	18	0	0	68	25.26315789	65	18	Requires more focus on Quants, Verbal and Programming - Specially Programming
42	Mathubala M	BCA	0	0	0	16	16	0	0	12	0	15	9	68	26.31578947	40	27	Requires more focus on Quants, Verbal and Programming - Specially Verbal
43	T.Preethipa	M.Sc Mathematics	0	0	0	29	18	0	0	0	0	20	0	67	30.52631579	45	20	Requires more focus on Quants, Verbal and Programming - Specially Programming
44	Abarna G	II Msc Mathematics	0	0	0	29	15	0	0	0	23	0	0	67	30.52631579	37.5	23	Requires more focus on Quants, Verbal and Programming - Specially Programming
45	Jerlin S	Msc Computer Science	0	0	0	26	17	5	0	19	0	0	0	67	32.63157895	42.5	19	Requires more focus on Quants, Verbal and Programming - Specially Programming
46	V. Vishnupriya	III B.Sc.Physics	4	9	0	13	30	18	3	2	0	0	0	66	44.21052632	55	2	Requires more focus on Quants, Verbal and Programming - Specially Programming
47	K.kesava priya	Mathematics	12	13	0	25	9	17	0	0	0	0	11	62	34.73684211	72.5	0	Requires more focus on Quants, Verbal and Programming - Specially Programming
48	T.Janani	Msc Computer Science	0	0	0	19	17	5	0	19	0	0	0	60	25.26315789	42.5	19	Requires more focus on Quants, Verbal and Programming - Specially Programming
49	R.Harini	BSC Computer Science	6	7	14	27	0	0	0	0	9.5	15	8	59.5	15.78947368	15	38.5	Requires more focus on Quants, Verbal and Programming - Specially Quants
50	Ganga Sri M	III BCA	15	13	4	32	5	2	3	0	0	0	11	58	33.68421053	42.5	9	Requires more focus on Quants, Verbal and Programming - Specially Programming
51	P.Sukriya	Mathematics	13	10	2	25	5	4	2	8	0	0	12	56	30.52631579	42.5	10	Requires more focus on Quants, Verbal and Programming - Specially Programming
52	Praveena T	Msc Information Technology	0	0	0	0	0	0	0	13.5	20	20	19	52.5	20	0	33.5	Requires more focus on Quants, Verbal and Programming - Specially Quants
53	P.saranya	Computer applications	13	14	0	27	0	0	0	0	11	0	11	49	26.31578947	32.5	11	Requires more focus on Quants, Verbal and Programming - Specially Programming
54	Thendral K	Msc Mathematics	0	0	0	0	0	0	0	0	0	20	29	49	30.52631579	0	20	Requires more focus on Quants, Verbal and Programming - Specially Quants
55	Gayathri	Msc Computer Science	0	0	0	8	1	0	0	0	13	0	10	48	18.94736842	2.5	29	Requires more focus on Quants, Verbal and Programming - Specially Quants
56	J.Nathiya	Bsc Computer Science	0	0	0	0	14	0	0	0	0	15	19	48	20	35	15	Requires more focus on Quants, Verbal and Programming - Specially Programming
57	Rifayah Fathima	Msc Information Technology	0	0	0	0	0	0	0	10	13.5	18	5	46.5	5.263157895	0	41.5	Requires more focus on Quants, Verbal and Programming - Specially Verbal
58	Dhivyalakshmi	BSC Computer Science	12	6	0	18	4	2	2	0	0	10	7	43	20	35	10	Requires more focus on Quants, Verbal and Programming - Specially Programming
59	M.sangavi marimuthu	Physics	15	18	10	43	0	0	0	0	0	0	0	43	18.94736842	37.5	10	Requires more focus on Quants, Verbal and Programming - Specially Programming
60	Sowmya V	Msc Mathematics	0	0	0	0	0	0	0	0	11.5	12	19	42.5	20	0	23.5	Requires more focus on Quants, Verbal and Programming - Specially Quants
61	ELLAKIYAPRIYA S	BCA	10	16	0	26	0	15	0	0	0	0	0	41	16.84210526	62.5	0	Requires more focus on Quants, Verbal and Programming - Specially Programming
62	Shalini s	Msc computer science	16	23	0	39	0	0	0	0	2	0	0	41	24.21052632	40	2	Requires more focus on Quants, Verbal and Programming - Specially Programming
63	ABARNA. k	B S C COMPUTER SICENCE	4	14	0	18	12	0	0	5	0	0	0	40	32.63157895	10	5	Requires more focus on Quants, Verbal and Programming - Specially Programming
64	Aarathi. R	Computer science	9	7	6	22	0	0	0	0	0	18	0	40	7.368421053	22.5	24	Requires more focus on Quants, Verbal and Programming - Specially Verbal
65	Archana S	Mathematics	0	0	0	0	15	0	0	0	0	15	10	40	10.52631579	37.5	15	Requires more focus on Quants, Verbal and Programming - Specially Verbal
66	Swathilakshmi	Msc Information Technology	0	0	0	0	0	0	0	0	13	0	3	36	3.157894737	0	33	Requires more focus on Quants, Verbal and Programming - Specially Verbal
67	S.Sweetha	BSC Computer Science	5	3	0	8	0	0	0	0	7	20	35	24.21052632	12.5	7	Requires more focus on Quants, Verbal and Programming - Specially Programming	
68	J.BRIJITH MONISHA	BCA	8	11	9	28	0	6	0	0	0	0	0	34	11.5789			

SI No	Student Name	Department	Quantitative in Placement	Verbal in Placement	Programming in Placement	Final Mock Placement Test	Verbal Ability	Quantitative Quiz	Email Writing Quiz	In-Class Programming Test 1	In-Class Programming Test 2	In-Class Programming Test 3	In Class verbal Test	Total	Average Verbal Score	Average Quantitative score	Programming Average score	Scope for improvement
1	UmaMaheswari V	BSC Physics	19	27	13	59	30	18	0	20	13	31	19	190	80	92.5	77	Overall Good Performance. Keep up the Good work
2	R.SUSMITHA	B.Sc COMPUTER SCIENCE	18	21	10	49	30	19	3	16	17	20	21	175	78.94736842	92.5	63	While Quantitative and Verbal Scores are good. More focus is needed on Programming
3	M.Thilagajothi	BCA	16	20	0	36	30	18	3	0	15	20	29	151	86.31578947	85	35	While Quantitative and Verbal Scores are good. More focus is needed on Programming
4	Swetha c	Bca	18	25	10	53	24	11	3	15	13	25	2	146	56.84210526	72.5	63	Requires more focus on Quants, Verbal and Programming - Specially Verbal
5	Swetha K	MSc maths	19	24	14	57	21	19	5	11	0	30	0	143	52.63157895	95	55	Requires more focus on Verbal and Programming
6	M.Jayanthi	B.Sc Computer Science	14	15	7	36	14	7	5	11	12	30	19	134	55.78947368	52.5	60	Requires more focus on Quants, Verbal and Programming - Specially Quants
7	S.Priyadharshini	Msc Mathematics	16	14	0	30	17	13	5	14	11	31	7	128	45.26315789	72.5	56	Requires more focus on Quants, Verbal and Programming - Specially Verbal
8	Induja	Mathematics	11	22	6	39	29	4	2	5	0	25	23	127	80	37.5	36	Requires more focus on Quants and Programming
9	R.Hemalatha	III BSC Computer Science	13	18	8	39	30	18	3	11	0	10	14	125	68.42105263	77.5	29	Requires more focus on Verbal and Programming
10	Saranya.G	B.Sc Computer Science	5	6	7	18	29	18	5	19	0	10	20	119	63.15789474	57.5	36	Requires more focus on Quants, Verbal and Programming - Specially Programming
11	Idhazhya C	BCA	17	6	5	28	18	16	0	15	9	9	21	116	47.36842105	82.5	38	Requires more focus on Quants, Verbal and Programming - Specially Programming
12	Aruljayapriya A	BCA	7	9	2	18	24	16	5	10	12	17	9	111	49.47368421	57.5	41	Requires more focus on Quants, Verbal and Programming - Specially Programming
13	S.Gayathri	MSc Mathematics	0	0	0	0	25	15	0	14	10	15	27	106	54.73684211	37.5	39	Requires more focus on Quants, Verbal and Programming - Specially Quants
14	M.Jayasri	BSC Mathematics	16	12	1	29	9	18	0	2	4	17	25	104	48.42105263	85	24	Requires more focus on Verbal and Programming - Specially Programming
15	Yogalakshmi.S	BCA	18	24	4	46	26	11	5	0	15	15	0	103	57.89473684	72.5	19	Requires more focus on Quants, Verbal and Programming - Specially Programming
16	M.Padma Priya	MSc Mathematics	0	0	0	0	29	17	0	0	8	20	29	103	61.05263158	42.5	28	Requires more focus on Quants, Verbal and Programming - Specially Programming
17	S.Preethi	BCA	16	19	5	40	27	0	5	0	12	15	0	99	53.68421053	40	32	Requires more focus on Quants, Verbal and Programming - Specially Programming
18	K.Madhu meetha	B.Sc, Information Technology	16	25	7	48	6	18	5	0	0	0	0	94	37.89473684	85	24	Requires more focus on Verbal and Programming - Specially Programming
19	A.V.R.AKSHAYA	MATHEMATICS	13	13	10	36	0	0	0	0	10	23	22	91	36.84210526	32.5	43	Requires more focus on Quants Verbal and Programming - Specially Quants
20	GUNAPRIYA.K	Bsc PHYSICS	18	19	0	37	30	18	5	0	0	0	0	90	56.84210526	90	0	Requires more focus on Verbal and Programming - Specially Programming
21	K.Thilaka	BSC Mathematics	11	10	6	27	6	2	2	5	4	22	21	89	41.05263158	32.5	37	Requires more focus on Quants, Verbal and Programming - Specially Quants
22	D.Diyya	Bsc.Physics	16	17	5	38	30	18	3	0	0	0	0	89	52.63157895	85	5	Requires more focus on Verbal and Programming - Specially Programming
23	R.sangavi	BCA	13	26	5	44	27	12	5	0	0	0	0	88	61.05263158	62.5	5	Requires more focus on Quants, Verbal and Programming - Specially Programming
24	Abirami M	III BCA A	7	10	0	17	30	18	0	4	8	0	10	87	52.63157895	62.5	12	Requires more focus on Quants, Verbal and Programming - Specially Programming
25	Maheswari S	MSc Computer Science	0	0	0	0	29	9	5	0	17	27	0	87	35.78947368	22.5	44	Requires more focus on Quants, Verbal and Programming - Specially Quants
26	Vaishali.M	BCA	15	25	6	46	24	11	5	0	0	0	0	86	56.84210526	65	6	Requires more focus on Quants, Verbal and Programming - Specially Programming
27	C.Kalaisevi	Computer Science	10	17	3	30	4	8	5	12	0	10	11	80	38.94736842	45	25	Requires more focus on Quants, Verbal and Programming - Specially Programming
28	Narmatha.V	BCA	14	25	0	39	25	11	5	0	0	0	0	80	57.89473684	62.5	0	Requires more focus on Quants, Verbal and Programming - Specially Programming
29	PoojaSree V	MSc Computer Science	0	0	0	0	26	17	5	0	0	7	5	80	37.89473684	42.5	27	Requires more focus on Quants, Verbal and Programming - Specially Programming
30	Bhuvaneshwari S	BCA	12	15	2	29	4	5	3	7.5	11.5	9	9	78	32.63157895	42.5	30	Requires more focus on Quants, Verbal and Programming - Specially Programming