



+1/1/60+

MA 106 Endsem Exam : Part A  
Indian Institute of Technology Bombay  
Date: 19th April 2023

Timing: 9.30 to 10.30 AM

Spring 2023, II

Max Mark: 20

Name:

Div/Tutorial:

Roll Number:

Please read the following instruction before answering the question.

- The (Optical Mark Recognition) OMR sheet will be collected back at 10.30 AM.
- There is 19 questions in Part A. Every question contains a single correct answer.
- Use pencil/pen to fill the correct choices in the OMR sheet. **Answer provided in the OMR sheet will only be evaluated.**

**Question 1** Only a perfect response will be scored 1 point - otherwise, null score. Test/4

☐ A Wrong ☒ B Correct ☐ C Wrong ☐ D Wrong

**Question 2** Only a perfect response will be scored 1 point - otherwise, null score. Test/2

☐ A Wrong ☐ B Wrong ☒ C Correct ☐ D Wrong

**Question 3** Only a perfect response will be scored 1 point - otherwise, null score. Test/1

☐ A Wrong ☐ B Wrong ☒ C Correct ☐ D Wrong

**Question 4** Only a perfect response will be scored 1 point - otherwise, null score. Test/3

☐ A Wrong ☐ B Wrong ☒ C Correct ☐ D Wrong

**Question 5** This question is related to Limit/4. The correct answer is Option A.

☒ A Option A ☐ B Option D ☐ C Option C ☐ D Option B

**Question 6** This question is related to Limit/3. The correct answer is Option D.

☐ A Option C ☐ B Option B ☒ C Option D ☐ D Option A

**Question 7** This question is related to Limit/2. The correct answer is Option B.

☒ A Option B ☐ B Option C ☐ C Option A ☐ D Option D

**Question 8** This question is related to Sequence/2. The correct answer is Option B.

☒ A Option B ☐ B Option D ☐ C Option C ☐ D Option D



**Question 9** This question is related to Sequence/4. What is the limit of the sequence  $\left\{\frac{1}{n}\right\}$

- ☒ 0      ☐ Not Defined      ☐ 1      ☐  $\infty$

**Question 10** This question is related to Sequence/3. The correct answer is Option A.

- ☒ Option A      ☐ Option C      ☐ Option D      ☐ Option B

**Question 11** This question is related to Series/7. What is the sum of  $\sum \frac{1}{n^4}$

- ☒  $\frac{\pi^4}{90}$       ☐  $\frac{\pi^4}{15}$       ☐  $\frac{\pi^2}{6}$       ☐  $\frac{\pi^2}{90}$

**Question 12** This question is related to Series/6. What is the sum of  $\sum \frac{1}{n^2}$

- ☐  $\frac{\pi^2}{3}$       ☐  $\frac{\pi^2}{2}$       ☒  $\frac{\pi^2}{6}$       ☐  $\frac{\pi}{4}$

**Question 13** This question is related to Series/2. The correct answer is Option D.

- ☐ Option C      ☐ Option A      ☒ Option D      ☐ Option B

**Question 14** This question is related to Series/1. The correct answer is Option B.

- ☐ Option D      ☐ Option C      ☐ Option A      ☒ Option B

**Question 15** This question is related to Series/3. The correct answer is Option C.

- ☒ Option C      ☐ Option B      ☐ Option D      ☐ Option A



# MA 106 Part A Optical Mark Recognition (OMR) Sheet

Encode Rollnumber									Division
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Name: .....

Rollnumber: .....

Div./Tut.: .....

Encode your correct choices.

Q1.	<input type="text" value="A"/>	<input checked="" type="checkbox"/>	<input type="text" value="C"/>	<input type="text" value="D"/>	Q9.	<input checked="" type="checkbox"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q2.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>	Q10.	<input checked="" type="checkbox"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q3.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>	Q11.	<input checked="" type="checkbox"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q4.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>	Q12.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>
Q5.	<input checked="" type="checkbox"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>	Q13.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>
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☐ A Wrong ☐ B Wrong ☒ C Correct ☐ D Wrong

**Question 2** Only a perfect response will be scored 1 point - otherwise, null score. Test/2

☐ A Wrong ☒ B Correct ☐ C Wrong ☐ D Wrong

**Question 3** Only a perfect response will be scored 1 point - otherwise, null score. Test/4

☐ A Wrong ☒ B Correct ☐ C Wrong ☐ D Wrong

**Question 4** Only a perfect response will be scored 1 point - otherwise, null score. Test/3

☐ A Wrong ☐ B Wrong ☐ C Wrong ☒ D Correct

**Question 5** This question related to Limit/1. The correct answer is Option A.

☐ A Option B ☐ B Option D ☐ C Option C ☒ D Option A

**Question 6** This question is related to Limit/2. The correct answer is Option B.

☐ A Option D ☐ B Option A ☒ C Option B ☐ D Option C

**Question 7** This question is related to Limit/4. The correct answer is Option A.

☐ A Option C ☐ B Option B ☒ C Option A ☐ D Option D

**Question 8** This question is related to Sequence/1. The correct answer is Option A.

☐ A Option C ☐ B Option B ☐ C Option D ☒ D Option A



**Question 9** This question is related to Sequence/4. What is the limit of the sequence  $\left\{\frac{1}{n}\right\}$

☐ Not Defined    ☐  $\infty$     ☐ 1    ☒ 0

**Question 10** This question is related to Sequence/3. The correct answer is Option A.

☐ Option B    ☐ Option C    ☐ Option D    ☒ Option A

**Question 11** This question is related to Series/5. The correct answer is Option D.

☐ Option C    ☒ Option D    ☐ Option A    ☐ Option B

**Question 12** This question is related to Series/4. The correct answer is Option C.

☐ Option A    ☐ Option B    ☒ Option C    ☐ Option D

**Question 13** This question is related to Series/6. What is the sum of  $\sum \frac{1}{n^2}$

☐  $\frac{\pi^2}{3}$     ☐  $\frac{\pi^2}{2}$     ☐  $\frac{\pi}{4}$     ☒  $\frac{\pi^2}{6}$

**Question 14** This question is related to Series/7. What is the sum of  $\sum \frac{1}{n^4}$

☐  $\frac{\pi^2}{6}$     ☐  $\frac{\pi^4}{15}$     ☒  $\frac{\pi^4}{90}$     ☐  $\frac{\pi^2}{90}$

**Question 15** This question is related to Series/1. The correct answer is Option B.

☐ Option D    ☐ Option A    ☒ Option B    ☐ Option C



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Q7.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>	Q15.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input checked="" type="checkbox"/>	<input type="text" value="D"/>
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**Question 1** Only a perfect response will be scored 1 point - otherwise, null score. Test/2

☐ A Wrong ☐ B Wrong ☐ C Wrong ☒ D Correct

**Question 2** Only a perfect response will be scored 1 point - otherwise, null score. Test/3

☒ A Correct ☐ B Wrong ☐ C Wrong ☐ D Wrong

**Question 3** Only a perfect response will be scored 1 point - otherwise, null score. Test/1

☐ A Wrong ☒ B Correct ☐ C Wrong ☐ D Wrong

**Question 4** Only a perfect response will be scored 1 point - otherwise, null score. Test/4

☒ A Correct ☐ B Wrong ☐ C Wrong ☐ D Wrong

**Question 5** This question is related to Limit/3. The correct answer is Option D.

☐ A Option A ☐ B Option C ☐ C Option B ☒ D Option D

**Question 6** This question related to Limit/1. The correct answer is Option A.

☒ A Option A ☐ B Option B ☐ C Option C ☐ D Option D

**Question 7** This question is related to Limit/4. The correct answer is Option A.

☐ A Option C ☒ B Option A ☐ C Option B ☐ D Option D

**Question 8** This question is related to Sequence/1. The correct answer is Option A.

☒ A Option A ☐ B Option C ☐ C Option D ☐ D Option B



**Question 9** This question is related to Sequence/2. The correct answer is Option B.

☒ Option B      ☐ Option C      ☐ Option D      ☐ Option D

**Question 10** This question is related to Sequence/4. What is the limit of the sequence  $\left\{\frac{1}{n}\right\}$

☐  $\infty$       ☐ Not Defined      ☐ 1      ☒ 0

**Question 11** This question is related to Series/4. The correct answer is Option C.

☐ Option B      ☐ Option D      ☒ Option C      ☐ Option A

**Question 12** This question is related to Series/2. The correct answer is Option D.

☐ Option A      ☒ Option D      ☐ Option C      ☐ Option B

**Question 13** This question is related to Series/3. The correct answer is Option C.

☐ Option D      ☐ Option B      ☒ Option C      ☐ Option A

**Question 14** This question is related to Series/5. The correct answer is Option D.

☒ Option D      ☐ Option B      ☐ Option C      ☐ Option A

**Question 15** This question is related to Series/1. The correct answer is Option B.

☐ Option D      ☐ Option C      ☐ Option A      ☒ Option B





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Div./Tut.: .....

Encode your correct choices.

Q1.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q2.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q3.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q4.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q5.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q6.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q7.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q8.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q9.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q10.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q11.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q12.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q13.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q14.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>
Q15.	<input type="text" value="A"/>	<input type="text" value="B"/>	<input type="text" value="C"/>	<input type="text" value="D"/>



+4/1/51+

MA 106 Endsem Exam : Part A  
Indian Institute of Technology Bombay  
Date: 19th April 2023

Timing: 9.30 to 10.30 AM

Spring 2023, II

Max Mark: 20

Name:

Div/Tutorial:

Roll Number:

Please read the following instruction before answering the question.

- The (Optical Mark Recognition) OMR sheet will be collected back at 10.30 AM.
- There is 19 questions in Part A. Every question contains a single correct answer.
- Use pencil/pen to fill the correct choices in the OMR sheet. **Answer provided in the OMR sheet will only be evaluated.**

**Question 1** Only a perfect response will be scored 1 point - otherwise, null score. Test/1

☐ A Wrong ☒ B Correct ☐ C Wrong ☐ D Wrong

**Question 2** Only a perfect response will be scored 1 point - otherwise, null score. Test/3

☒ A Correct ☐ B Wrong ☐ C Wrong ☐ D Wrong

**Question 3** Only a perfect response will be scored 1 point - otherwise, null score. Test/2

☒ A Correct ☐ B Wrong ☐ C Wrong ☐ D Wrong

**Question 4** Only a perfect response will be scored 1 point - otherwise, null score. Test/4

☐ A Wrong ☒ B Correct ☐ C Wrong ☐ D Wrong

**Question 5** This question is related to Limit/2. The correct answer is Option B.

☐ A Option D ☐ B Option A ☐ C Option C ☒ D Option B

**Question 6** This question is related to Limit/3. The correct answer is Option D.

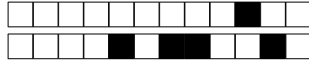
☐ A Option B ☐ B Option C ☐ C Option A ☒ D Option D

**Question 7** This question related to Limit/1. The correct answer is Option A.

☐ A Option D ☒ B Option A ☐ C Option B ☐ D Option C

**Question 8** This question is related to Sequence/3. The correct answer is Option A.

☐ A Option D ☒ B Option A ☐ C Option C ☐ D Option B



**Question 9** This question is related to Sequence/1. The correct answer is Option A.

☐ Option B    ☒ Option A    ☐ Option C    ☐ Option D

**Question 10** This question is related to Sequence/2. The correct answer is Option B.

☒ Option B    ☐ Option D    ☐ Option D    ☐ Option C

**Question 11** This question is related to Series/7. What is the sum of  $\sum \frac{1}{n^4}$

☐  $\frac{\pi^4}{15}$     ☐  $\frac{\pi^2}{6}$     ☒  $\frac{\pi^4}{90}$     ☐  $\frac{\pi^2}{90}$

**Question 12** This question is related to Series/6. What is the sum of  $\sum \frac{1}{n^2}$

☒  $\frac{\pi^2}{6}$     ☐  $\frac{\pi^2}{2}$     ☐  $\frac{\pi}{4}$     ☐  $\frac{\pi^2}{3}$

**Question 13** This question is related to Series/4. The correct answer is Option C.

☐ Option B    ☐ Option D    ☐ Option A    ☒ Option C

**Question 14** This question is related to Series/2. The correct answer is Option D.

☒ Option D    ☐ Option B    ☐ Option A    ☐ Option C

**Question 15** This question is related to Series/3. The correct answer is Option C.

☐ Option D    ☒ Option C    ☐ Option A    ☐ Option B



## MA 106 Part A Optical Mark Recognition (OMR) Sheet

Encode Rollnumber									Division
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>
<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="2"/>
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<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	
<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	
<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text" value="6"/>	
<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	<input type="text" value="7"/>	
<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	<input type="text" value="8"/>	
<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="9"/>	
<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	<input type="text" value="B"/>	
<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	<input type="text" value="D"/>	

Name: .....

.....

Rollnumber: .....

Div./Tut.: .....

Encode your correct choices.

- Q1.  ☒
- Q2. ☒
- Q3. ☒
- Q4.  ☒
- Q5.    ☒
- Q6.    ☒
- Q7.  ☒
- Q8.  ☒

- Q9.  ☒
- Q10. ☒
- Q11.   ☒
- Q12. ☒
- Q13.    ☒
- Q14. ☒
- Q15.  ☒