

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 15 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** [attention] Only a perfect response will be scored 1 point - otherwise, null score.  
Test/1

☐ A Wrong ☐ B Wrong ☐ C Wrong ☒ Correct

**Question 2** [attention2] Only a perfect response will be scored 1 point - otherwise, null score.  
Test/2

☐ A Wrong ☐ B Wrong ☐ C Wrong ☒ Correct

**Question 3** [attention3] Only a perfect response will be scored 1 point - otherwise, null score.  
Test/3

☐ A Wrong ☐ B Wrong ☐ C Wrong ☒ Correct

**Question 4** [attention4] Only a perfect response will be scored 1 point - otherwise, null score.  
Test/4

☐ A Wrong ☐ B Wrong ☐ C Wrong ☒ Correct

**Question 5** [q1] This question related to Limit/1. The correct answer is Option A.

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

**Question 6** [q2] This question is related to Limit/2. The correct answer is Option B.

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

**Question 7** [q3] This question is related to Limit/3. The correct answer is Option D.

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

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**Question 8** [q4] This question is related to Limit/4. The correct answer is Option A.

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

**Question 9** [seq1] This question is related to Sequence/1. The correct answer is Option A.

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

**Question 10** [seq2] This question is related to Sequence/2. The correct answer is Option B.

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

**Question 11** [seq3] This question is related to Sequence/3. The correct answer is Option A.

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

**Question 12** [seq4] This question is related to Sequence/4. What is the limit of the sequence  $\left\{\frac{1}{n}\right\}$

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

**Question 13** [ser1] This question is related to Series/1. The correct answer is Option B.

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

**Question 14** [ser2] This question is related to Series/2. The correct answer is Option D.

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

**Question 15** [ser3] This question is related to Series/3. The correct answer is Option C.

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

**Question 16** [ser4] This question is related to Series/4. The correct answer is Option C.

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

**Question 17** [ser5] This question is related to Series/5. The correct answer is Option D.

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

**Question 18** [ser6] This question is related to Series/6. What is the sum of  $\sum \frac{1}{n^2}$

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

**Question 19** [ser7] This question is related to Series/7. What is the sum of  $\sum \frac{1}{n^4}$

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

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

Encode Rollnumber									Division
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Name: .....

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Rollnumber: .....

Div./Tut.: .....

Encode your correct choices.

Q1. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q11. <input type="checkbox"/> <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D
Q2. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q12. <input type="checkbox"/> <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D
Q3. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q13. <input type="checkbox"/> A <input type="checkbox"/> <input type="checkbox"/> C <input type="checkbox"/> D
Q4. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q14. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>
Q5. <input type="checkbox"/> <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	Q15. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> <input type="checkbox"/> D
Q6. <input type="checkbox"/> A <input type="checkbox"/> <input type="checkbox"/> C <input type="checkbox"/> D	Q16. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> <input type="checkbox"/> D
Q7. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q17. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>
Q8. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q18. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>
Q9. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>	Q19. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>
Q10. <input type="checkbox"/> A <input type="checkbox"/> <input type="checkbox"/> C <input type="checkbox"/> D	