

K-450

Total Pages : 3

Roll No.

MT-607

Viscous Fluid Dynamics-II

MA/MSc Mathematics (MAMT/MSCMT)

4th Semester Examination, 2023 (Dec.)

Time : 2 Hours]

[Max. Marks : 35

Note : This paper is of Thirty Five (35) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nine and Half ($9\frac{1}{2}$) marks each. Learners are required to answer any Two (02) questions only.

($2 \times 9\frac{1}{2} = 19$)

K-450 / MT-607

[P.T.O.

1. Obtain the expression for the flow between two parallel Porous plates.
2. Discuss the temperature distribution between two concentric rotating cylinders.
3. Write Stoke's equation for slow motion. Discuss stresses on the surface of the sphere in stake's flow past a sphere.
4. Derive the boundary layer equation by Asymptotic Approach.
5. Obtain Blasius Series Solution for large η .

SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Four (04) marks each. Learners are required to answer any Four (04) questions only. (4×4=16)

1. Discuss the temperature distribution in a pipe.
2. Discuss stoke's stream function.
3. Write a note on Characteristic parameters of Boundary Layer parameters.

4. Obtain Crocco's first integral for $P_r = 1$.
 5. What is the temperature Distribution in fluid motion?
 6. Discuss the application of boundary layer theory.
 7. What is meant by porous boundaries?
 8. Discuss Oseen's equation.
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