

School of Aeronautics (Neemrana)

Question Paper For Back / Re-back Internal Assessment Examination (Theory) - Old Scheme i.e 2012 Syllabus

Instructions For Students / Faculty

Back / Re-back Internal Examination (Total 60 Marks, 2 Hrs, Syllabus From Beginning of The Session)

Total number of questions to be given are 10, each carrying 10 marks and it is compulsory to attend 2 questions from Part A and 4 questions from Part B. There is a choice of two questions out of four in part A and 4 questions out of 6 in Part B. Part A will be theoretical or derivation type (**Not More Than 70 Words For Question**). Part B will be fully numerically oriented questions (**Not More Than 70 Words For Question**), except for the list of subjects given below. No objective type or fill in the blanks shall be given, but subpart of question can be given for both Part A & B.

* **LIST OF ELABORATIVE THEORY QUESTION SUBJECTS:** Aircraft Materials, Aircraft System, Aircraft Rules & Regulation-I, Mechanics of Composite Materials, Aircraft Design, Aircraft Rules & Regulation-II, Avionics-I, Helicopter Theory, Maintenance of Airframe and System Design, Avionics-II, Airlines and Airport Management, Maintenance of Power Plant & Systems

FACULTY MEMBERS, PLEASE ENSURE EXCEPT ABOVE LISTED SUBJECTS, NO THEORETICAL ELABORATIVE QUESTION SHOULD BE GIVEN IN PART 'B' OF QUESTION PAPER

STUDENT IS ALLOWED TO ENTER LATE NOT MORE THAN 15 MIN AFTER STARTING OF EXAM, AND MAY LEAVE THE EXAM HALL ON EXPIRY OF ATLEAST OF 1 Hr FROM THE STARTING TIME OF EXAMINATION

Question Paper & Student Details

Name of Faculty*	<input type="text" value="Maris Brightson C L"/>	Date of Submission of QP	<input type="text" value="30/11/2020"/>
Subject*	<input type="text" value="6AN6.2- Computational Fluid Dynamics (Old)"/>	Date of Examination*	<input type="text" value="05/12/2020"/>
Email Id of Faculty:*	<input type="text" value="marisbrightson@soaneemrana.org"/>	Course*	<input type="text" value="B.Tech (Aeronautical Engineering)"/>
Phone Number of Faculty*	<input type="text" value="805 667 7643"/>	Semester*	<input type="text" value="Semester : 6"/>

Student Name	<input type="text"/>	Student Reg No.	<input type="text"/>
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Part A

Question : 1*

Derive Continuity equation in the non-conservative form.

Lesson Plan*

Topic*

Source*

Question : 2*

Derive the energy equation for a viscous flow in the partial differential non-conservation form.

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

John D Anderson Jr., Cor

Question : 3*

Write down elliptic, parabolic and hyperbolic partial differential equations as applicable to CFD.

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

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Question : 4*

State and explain the difference between explicit and implicit methods with suitable examples

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

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Part B

Question : 1*

What is discretization? Discuss different types of discretization techniques used in CFD?

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

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Question : 2*

Explain the description of the Prandtl boundary layer equation and its solution methodology.

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

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Question : 3*

Discuss the Lax method in brief also explains stability conditions based on CFL conditions.

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

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Question : 4*

Explain the shock-capturing technique in brief.

Lesson Plan*

NA

Topic*

Computational Fluid Dynamics

Source*

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Question : 5

- (1) Difference between structure and unstructured grid.
- (2) Define preconditioning techniques with a suitable example.

Lesson Plan

NA

Topic

Computational Fluid Dynamics

Source

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Question : 6

Derive Navier-Stokes equation in non-conservation form.

Lesson Plan

NA

Topic

Computational Fluid Dynamics

Source

John D Anderson Jr., Cor

Upload Scanned Document In Case of Numerical or Diagram for any of the above question

Mention question number with relevant fig / numerical / equations.
Max 150 KB

Choose files or drag here

I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.

