

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="Dr Bipin Kumar Dwivedi"/>	Date of Submission of QP	<input type="text" value="27/11/2020"/>
Subject*	<input type="text" value="6AN4 - Aircraft Structure II (Old)"/>	Date of Examination*	<input type="text" value="07/12/2020"/>
Email Id of Faculty:*	<input type="text" value="bipinkumardwivedi@soaneemrana.org"/>	Course*	<input type="text" value="B.Tech (Aeronautical Engineering)"/>
Phone Number of Faculty*	<input type="text" value="931 400 9035"/>	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*

Explain the following
(a) Moment of inertia about X-axis (b) Moment of inertia about Y-axis
(c) Differentiate between symmetrical and unsymmetrical section of beam.

Lesson Plan*	<input type="text" value="3"/>	Topic*	<input type="text" value="unsymmtrical bending"/>	Source*	<input type="text" value="AIRCRAFT STRUCTURES"/>
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Question : 2*

Explain the following
(a) Skew load (b) Open and closed section of beam.
(c) Differentiate between bending stress and shear stress in a beam.

Lesson Plan*

7

Topic*

Skew load

Source*

AIRCRAFT STRUCTURES

Question : 3*

Derive the expression to locate the shear center in a semi-circular thin walled section.

Lesson Plan*

15

Topic*

Shear flow in open section

Source*

AIRCRAFT STRUCTURES

Question : 4*

Explain about the Gust load envelope on V-n diagram.

Lesson Plan*

40

Topic*

Gust load

Source*

AIRCRAFT STRUCTURES

Part B

Question : 1*

Calculate the principal moment of inertia of the given unsymmetrical section in the fig-1.

Lesson Plan*

5

Topic*

unsymmtrical bending

Source*

AIRCRAFT STRUCTURES

Question : 2*

Find the shear flow in BE section of the multicell tube structure
Given in fig-3. Take $G=25 \times 10^5 \text{ N/cm}^2$ and thickness $t=0.1 \text{ cm}$.

Lesson Plan*

22

Topic*

Shear flow in closed section

Source*

AIRCRAFT STRUCTURES

Question : 3*

Determine the maximum tensile stress point on the given symmetrical section with skew load in fig-2.

Lesson Plan*

9

Topic*

unsymmtrical bending

Source*

AIRCRAFT STRUCTURES

Question : 4*

Determine the maximum compressive stress point on the given symmetrical section with skew load in fig-2.

Lesson Plan*

10

Topic*

unsymmtrical bending

Source*

AIRCRAFT STRUCTURES

Question : 5

Determine the twisting angle per unit length of the multicell tube structure Given in fig-3. Take $G=25 \times 10^5 \text{ N/cm}^2$ and thickness $t=0.1 \text{ cm}$.

Lesson Plan

25

Topic

Shear flow in closed section

Source

AIRCRAFT STRUCTURES

Question : 6

Determine the position of neutral axis of the given unsymmetrical section in the fig-1.

Lesson Plan

15

Topic

unsymmtrical bending

Source

AIRCRAFT STRUCTURES

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

archive-1.zip (90 KB)



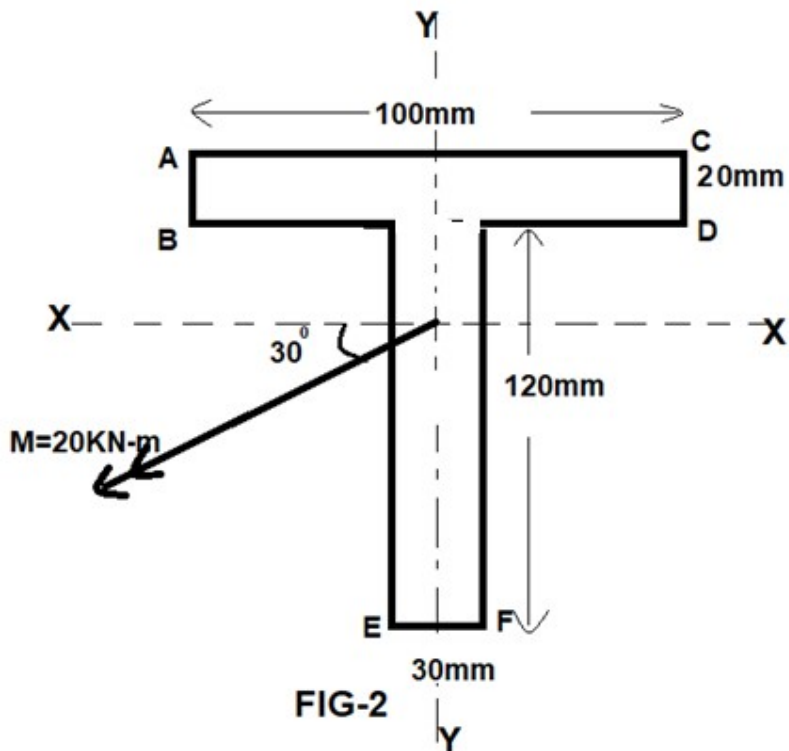
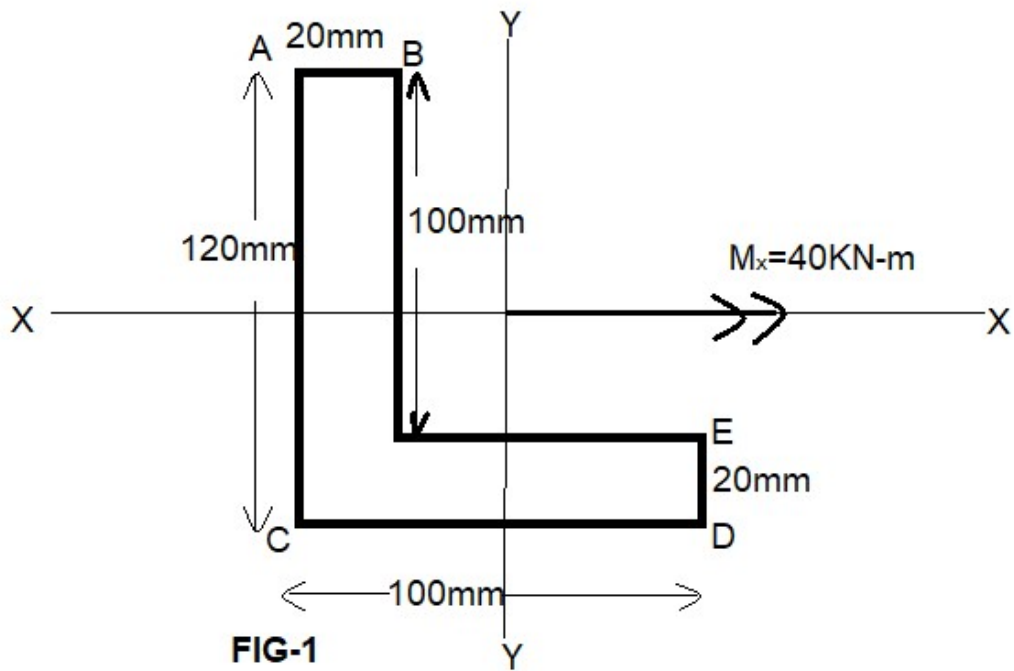
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.



A handwritten signature in black ink, appearing to be 'S. S. S.', is written above a horizontal line. The signature is enclosed in a rectangular box.

AIRCRAFT STRUCTURE-II (6AN4)

BACK PAPER EXAM



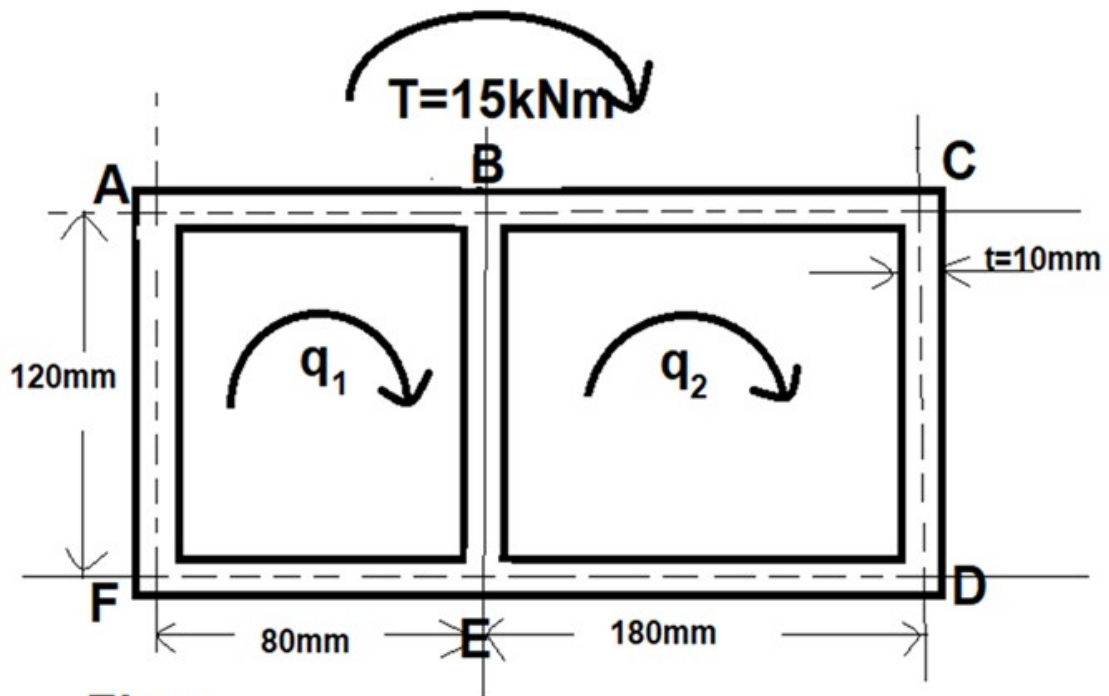


Fig-3