School of Aeronautics (Neemrana) | School of Aeronautics

APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION & AFFILIATED TO RAJASTHAN TECHNICAL UNIVERSITY, KOTA
& BIKANER TECHNICAL UNIVERSITY, BIKANER, RUN & MANAGED BY L N VERMA MEMORIAL SOCIETY

APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
RUN AND MANAGED BY LAXMI NARAIN VERMA MEMORIAL SOCIETY, REGISTERED,
DELHI ADMINISTRATION, UNDER SOCIETIES REGISTRATION ACT XXI OF 1860.

Question Paper For Internal Assessment Examination (Theory) - Credit 4 / 34 / SET 1

Instructions for Students/FacultyMid Term I (Total 80 Marks, 2 HRS. Syllabus from Unit-1)

- Part A: Total number of questions to be given are ten (5 from CO1 and 5 from CO2), each carrying 2 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words For both Question & Answer)**, no objective type or fill in the blanks. Total 20 marks.
- Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 5 marks. Total 20 marks.
- Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2). They are numerical answer type / fully elaborative type (**Not More Than 70 Words for Question)** *, each carrying 10 marks. Total 40 marks.

Mid Term II (Total 120 Marks, 2.5 HRS., Syllabus from Unit-2)

- Part A: Total number of questions to be given are ten (5 from CO3 and 5 from CO4), each carrying 4 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words For both Question & Answer)**, no objective type or fill in the blanks. Total 40 marks.
- Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer four (2 from CO3 and 2 from CO4). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 7 marks. Total 28 marks.
- Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer four (2 from CO3 and 2 from CO4). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)** *, each carrying 13 marks. Total 52 marks.

Mid Term III (Total 120 Marks, 2.5 HRS., Syllabus from Unit-3)

- Part A: Total number of questions to be given are ten (5 from CO5 and 5 from CO6), each carrying 4 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words For both Question & Answer)**, no objective type or fill in the blanks. Total 40 marks.
- Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student must answer four (2 from CO5 and 2 from CO6). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 7 marks. Total 28 marks.
- Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student must answer four (2 from CO5 and 2 from CO6). They are numerical answer type / fully elaborative type (**Not More Than 70 Words for Question)** *, each carrying 13 marks. Total 52 marks.

* LIST OF ELABORATIVE THEORY QUESTION SUBJECTS: NO SUBJECT UNDER CREDIT FOUR

Instructions For Faculties:

There should be total 6 Course Outcomes (COs) for each subject.

- Mid Term Question Papers are to be submitted as per Course Outcomes (COs) which should be divided equally in Part A, Part B and Part C according to Mid Term Examination and Credit Point.
- In Mid Term-1, the questions are to be given from CO1 and CO2. In Mid Term-2, the questions are to be given from CO3 and CO4. Similarly, in Mid Term-3, the questions are to be given from CO5 and CO6.

School of Aeronautics (Neemrana)
APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION & AFFILIATED TO RAJASTHAN TECHNICAL UNIVERSITY, KOTA
& BIKANER TECHNICAL UNIVERSITY, BIKANER, RUN & MANAGED BY L N VERMA MEMORIAL SOCIETY

School of Aeronautics
APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
RUN AND MANAGED BY LAXMI NARAIN VERMA MEMORIAL SOCIETY, REGISTERED,
DELHI ADMINISTRATION, UNDER SOCIETIES REGISTRATION ACT XXI OF 1860.

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

INSTRUCTION FOR STUDENTS

- 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 AND STUDENTS DETAILS

Type of Exam	Mid Term 1	**Date of Submission**	21/06/2021
Name of Faculty	GOURAV SARDANA	**Date of Examination**	30/06/2021
Course	B.Tech (Aeronautical Engineering)	**Semester**	SEMESTER : 4
Batch	Eighteenth (18)	**Subject**	4 AN4 - 05 Aircraft Structures-I (Cr 4)

COURSE OUTCOMES FOR REFERENCE TO FRAME QUESTION PAPER
(Faculties are required to mention relevant Course Outcome number against the respective question in QP)

Course Outcome	COURSE OUTCOME Upon completion of the course, Students will be able to CO1: Describe the classification and working principles of different types of flight vehicles and its components. CO2: Illustrate the basic principles of aerodynamics, characteristics of airfoils and NACA numbering system for airfoil.
Email I'd gouravsardana@soaneemrana.org	**Phone No.** 925-566-9668
Student Name	**Student Reg No.**

Part A

All the questions are compulsory to attend.

1. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.		1
Question : 1	Define major structure of aircraft .	
1	Introduction	R. S. K. T. H. G. Magson,' Aircraft Structures'hurmi,' Aircraft Structures
Question : 2	Define the condition of body in equilibrium..	
1	Introduction	T. H. G. Magson,' Aircraft Structures'
Question : 3	Define Features of aircraft structures	

Corporate Office : H 974, Palam Extension, Part 1, Sector 7, Dwarka, New Delhi 110077
Ph. 011-25084354, 9811315363, 9314009020, E-Mail: info@soaneemrana.org, ccashoka@gmail.com
Website: www.soaneemrana.org, www.soaneemrana.org, www.soadelhi.com

School of Aeronautics (Neemrana)
APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION & AFFILIATED TO RAJASTHAN TECHNICAL UNIVERSITY, KOTA
& BIKANER TECHNICAL UNIVERSITY, BIKANER, RUN & MANAGED BY L N VERMA MEMORIAL SOCIETY

School of Aeronautics
APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
RUN AND MANAGED BY LAXMI NARAIN VERMA MEMORIAL SOCIETY, REGISTERED,
DELHI ADMINISTRATION, UNDER SOCIETIES REGISTRATION ACT XXI OF 1860.

2	Introduction	T. H. G. Magson,' Aircraft Structures'	
Question : 4	Define Static Equilibrium .		
3	Deformations due to loading	Engineering Mechanics by R.k Bansal	
Question : 5	Define Truss .		
5	: Statically Determinate Structures	Engineering Mechanics by R.k Bansal	
2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			2
Question : 6	Define a frame in structural analysis..		
7	Statically Determinate Structures	Engineering Mechanics by R.k Bansal	
Question : 7	Explain the types of planner analysis		
7	Statically Determinate Structures	Engineering Mechanics by R.k Bansal	
Question : 8	Define the Principle of superposition.		
13	Deferential Equation	Engineering Mechanics by R.k Bansal	
Question : 9	Define the Macaulay's method.		
11	Deferential Equation	Engineering Mechanics by R.k Bansal	
Question : 10	Define method of joint		
10	Deferential Equation	Engineering Mechanics by R.k Bansal	

Part B

FOR MIDTERM 1 - Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).
FOR MIDTERM 2 - Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).
FOR MIDTERM 3 - Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

3. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			1
Question : 1	Define nomenclature & layout of aircraft.		
2	Introduction	T. H. G. Magson,' Aircraft Structures'	

Corporate Office : H 974, Palam Extension, Part 1, Sector 7, Dwarka, New Delhi 110077
Ph. 011-25084354, 9811315363, 9314009020, E-Mail: info@soaneemrana.org, ccashoka@gmail.com
Website: www.soaneemrana.org, www.soaneemrana.org, www.soadelhi.com

School of Aeronautics (Neemrana)

APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION & AFFILIATED TO RAJASTHAN TECHNICAL UNIVERSITY, KOTA
& BIKANER TECHNICAL UNIVERSITY, BIKANER, RUN & MANAGED BY L N VERMA MEMORIAL SOCIETY

School of Aeronautics

APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
RUN AND MANAGED BY LAXMI NARAIN VERMA MEMORIAL SOCIETY, REGISTERED,
DELHI ADMINISTRATION, UNDER SOCIETIES REGISTRATION ACT XXI OF 1860.

Question : 2	Define Concept of static stability.		
3	Introduction	T. H. G. Magson,' Aircraft Structures'	
Question : 3	Explain the double integration method		
6	Deformations due to loading:	Strength of Material ,Sadhu singh	
4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.		2	
Question : 4	Define the Conjugate beam method		
11	Deformations due to loading:	Strength of Material ,Sadhu singh	
Question : 5	Drive the differential equation of the deflection curve.		
14	Differential Equation	Strength of Material ,Sadhu singh	
Question : 6	Drive the expression for point load on a simply supported beam by Macaulay 's Mehod.		
15	Differential Equation	Strength of Material ,Sadhu singh	
Question : 7 (Old Pattern)			

Part C

FOR MIDTERM 1 - Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).
FOR MIDTERM 2 - Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).
FOR MIDTERM 3 - Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).
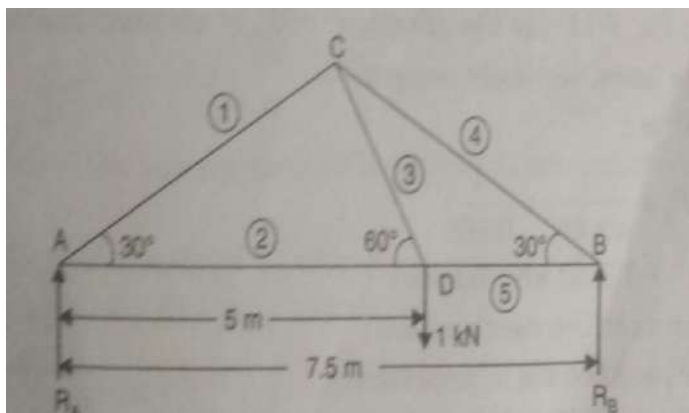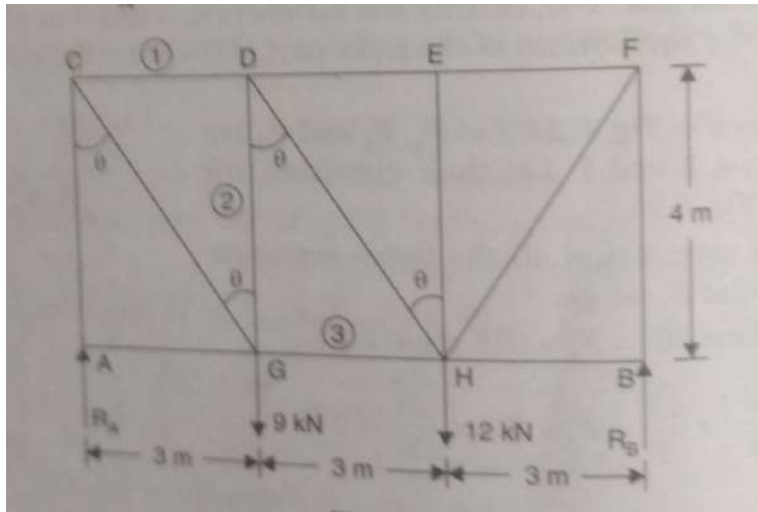
5. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.		1	
Question : 1	A truss of span 7.5 m carries a point load of 1KN at joint D .find the reaction and forces in the members of truss.		
10	Deformations due to loading	Engineering Mechanics by R.K Bansal	
Question : 2	A truss of span 9m is loaded find the reaction and forces in members marked 1,2 nd3 .		
12	Deformations due to loading	Engineering Mechanics by R.K Bansal	
Question : 3	Define the monocoque and semi- monocoque structures with digram		

Corporate Office : H 974, Palam Extension, Part 1, Sector 7, Dwarka, New Delhi 110077
Ph. 011-25084354, 9811315363, 9314009020, E-Mail: info@soaneemrana.org, ccashoka@gmail.com
Website: www.soaneemrana.org, www.soaneemrana.org, www.soadelhi.com

6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.		2

Question : 4	Drive expression for simply supported beam subjected to a pure couple by Macaulay' s Method.	
11	Differential equation	Strength of Material b sadhu Singh
Question : 5	Drive an expression for Mohr's Moment area method.	
12	Differential equation	Strength of Material b sadhu Singh
Question : 6	A horizontal girder of steel having uniform section is 14m long and is simply supported at its ends. its carries concentrated loads of 120KN and 80KN at two points 3m & 4.5 m from two ends. I 16×104 cm4 andE for steel is 210GPa . Calculate the deflection of girdr at points under load	
15	Differential equation	Strength of Material b sadhu Singh

Upload Scanned Document In Case of Numerical or Diagram For Any of The Above Questions. *(Mention question number with relevant fig / numerical / equations. Max 150 KB)*	https://form.123formbuilder.com/upload_dld.php?fileid=880db89cf591790812c266162bac4bba
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.	

Q.2

Q.1