



Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 82 / SET 1

NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA

Instructions for Students / Faculty

Mid Term I (Total 60 Marks, 2 HRS. Syllabus from Unit-1)

- Part A: Total number of questions to be given are six (3 from CO1 and 3 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 12 marks.
- Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student has to answer four (2 from CO1 and 2 from CO2). They are long answer type (**Not More Than 50 Words for Question**), each carrying 4 marks. Total 16 marks.
- Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student has to 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 8 marks. Total 32 marks.

Mid Term II (Total 90 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 3 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 30 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 6 marks. Total 24 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 any 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 9 marks. Total 36 marks.

Mid Term III (Total 90 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 3 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 30 marks
- 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). They are long answer type (**Not More Than 50 Words for Question**), each carrying 6 marks. Total 24 marks.
- 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). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question**)*, each carrying 9 marks. Total 36 marks.

* **LIST OF ELABORATIVE THEORY QUESTION SUBJECTS:** 3 MH4 - 07 Manufacturing Process, 4 AN4 - 06 Aircraft Materials and Processes (Cr 3), 5 AN4 - 05 Aircraft System (Cr 3), 6 AN4 - 05 Avionics-I (Cr 3), 6 MH4 - 03 Applied Hydraulics & Pneumatics (Cr 3), 6 MH5 - 11 Principles of Management (Cr 3), 6 MH5 - 13 Aircraft Electronics System (Cr 3), 7 AN5 - 12 Maintenance of Airframe and System (Cr 3), 7 AN5 - 13 Helicopter Theory (Cr 3), 7 AG6 - 60.1 Human Engineering and Safety (Cr 3), 7 ST - 01 Avionics II (Special Theory Subject) (Cr 3), 7 MH5 - 11 Design of Mechatronics Systems (Cr 3), 7 MH5 - 12 Robotics and Machine Vision System (Cr 3), 7 MH6 - 13 Medical Electronics (Cr 3), 7 AN6 - 60.1 Aircraft Avionic System (Cr 3), 8 AN5 - 12 Maintenance of Power Plant and System



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NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA(Cr 3), 8 AN5 - 13 Unmanned Aerial Vehicles & Systems (UAV) (Cr 3), 8 MH5 - 13 Product Development & Launching
(Cr 3), 8 EC6 - 60.2 Robotics and control (Cr 3)**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.
- **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,**

QUESTION PAPER & STUDENTS DETAILS

Type of Exam	Mid Term 1	Date of Submission	17/03/2021
Name of Faculty	Mr. Rajendra Prasad	Date of Examination	22/03/2021
Course	B.Tech (Mechatronics Engineering)	Semester	SEMESTER : 6
Batch	Fourth (4)	Subject	6 MH5 - 13 Aircraft Electronics System (Cr 3)-

COURSE OUTCOMES FOR REFERENCE TO FRAME QUESTION PAPERS

(Faculties are required to mention Course Outcome Number against each part of the question paper)

Course Outcome	1. To understand about the electrical systems of aircraft. 2. To study about generators, motors, inverters used in aircraft.		
Email I'd	rajendrprasad@soaneemrana.org	Phone No.	941-389-1827
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.

CO 1

Question : 1 Explain the armature reaction



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1	Power generation.	Aircraft electrical systems, E H j palette,chapter 1,Pg 30.	
Question : 2	Describe residual magnetism		
1	Power generation.	Aircraft electrical systems, E H j palette,chapter 1,Pg 30.	
Question : 3	Difference between earthing and grounding		
2	Power distribution.	Aircraft electrical systems, EHJPallet,chapter 3.Pg 63-65.	
Question : 4			
Question : 5			
2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 2
Question : 6	Difference between static and rotary Inverters		
3	Inverters	Aircraft electrical systems, EHJ Pallet,chapter 5,pg 76-98.	
Question : 7	Name of the device used for circuit protection in aircraft		
4	Circuit protection .	Aircraft electrical systems, EHJ Palette,Chapter 7,Pg 111-122.	
Question : 8	Purpose of integral lights in aircraft		
6	Lights	Aircraft electrical systems, EHJ Palette,chapter 10,Pg 145-154.	
Question : 9			
Question : 10			

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).



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NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA**3. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.**

CO 1

Question : 1

Explain the construction details of aircraft AC generator

1

AC power generation.

Aircraft electrical systems ,EHJ
Palette,chapter 1,Pg 1-30.**Question : 2**

Explain the looming system in aircraft and types of looms

2

Power distribution.

Aircraft electrical systems,EHJ
Palette,chapter 3,Pg 63-65.**Question : 3**

Describe the operation and construction of aircraft rotary inverters

3

Inverters

Aircraft electrical systems EHJ
Palette,chapter5,Pg 76-98.**4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.**

CO 2

Question : 4

Describe the battery Installation system in aircraft

4

Battery installation.

Aircraft electrical systems,EHJ
Palette,chapter7,Pg 111-122.**Question : 5**

Explain the operation of ground power unit in aircraft

4

Ground power

Aircraft electrical
systems,chapter 4,pg 69-75.**Question : 6**

Describe about navigation lights in aircraft

6

Lights

Aircraft electrical systems,E HJ
palette,chapter 10,pg 145-15.**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.**

CO 1

Question : 1

Explain the construction details of aircraft DC generator



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1	DC generation	Aircraft electrical ,systems,EHJ Pallette,chapter 2, pg 32-52.	
Question : 2	With the aid of circuit diagram describe the fundamental principle of the carbon pile method of voltage regulation		
2	Voltage regulator	Aircraft Electrical systems,EHJ Pallette,chapter 3,Pg 51-68.	
Question : 3	Describe the operation and construction of transformer rectifier unit in aircraft		
3	Transformer rectifier unit	Aircraft Electrical systems,EHJ Pallette,chapter 3,Pg 51-68.	
6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 2
Question : 4	Describe the reverse current Cut -Out operation with circuit diagram		
4	Lights	Aircraft electrical systems,EHJPallette,chapter 10,pg 145-154.	
Question : 5	Explain the external lighting system in aircraft		
6	Lights	Aircraft electrical systems,EHJPallette,chapter 10,pg 145-154.	
Question : 6	Explain the Internal lighting systems in aircraft		
6	Lights	Aircraft electrical, systems ,EHJ pallette,chapter 10, pg 145-154.	
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)			
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.			

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