

School of Aeronautics (Neemrana)

I-04, RIICO Industrial Area, Neemrana, Dist. Alwar, Rajasthan

Approved by Director General of Civil Aviation, Govt. of India, All India Council for Technical Education
Ministry of HRD, Govt of India & Affiliated to Rajasthan Technical University, Kota & BTU, Bikaner Rajasthan

Question Paper For Internal Assessment Examination (Theory) - Credit 2 / 81

Instructions for Students / Faculty

Mid Term I (Total 40 Marks, 1.5 HRS., Syllabus from Unit-1)

- Part A: Total number of questions to be given are four (2 from CO1 and 2 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 8 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 Only**), each carrying 4 marks. Total 16 marks.
- Part C: Total number of questions to be given are four (2 from CO1 and 2 from CO2), out of which student has to answer two (1 from CO1 and 1 from CO2). They are numerical answer type / fully elaborative type* (**Not More Than 70 Words for Question Only**), each carrying 8 marks. Total 16 marks.

Mid Term II (Total 60 Marks, 2 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 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 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 Only**), each carrying 4 marks. Total 16 marks.
- Part C: Total number of questions to be given are four (2 from CO3 and 2 from CO4), out of which student has to answer any two (1 from CO3 and 1 from CO4). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question Only**) *, each carrying 12 marks. Total 24 marks.

Mid Term III (Total 60 Marks, 2 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 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 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 Only**), each carrying 4 marks. Total 16 marks.
- Part C: Total number of questions to be given are four (2 from CO5 and 2 from CO6), out of which student has to answer any two (1 from CO5 and 1 from CO6). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question Only**) *, each carrying 12 marks. Total 24 marks.

* LIST OF ELABORATIVE THEORY QUESTION SUBJECTS: 1 FY1 - 04 Communication Skills (Cr 2), 1 FY1 - 05 Human Values (Cr 2), 2 FY1 - 04 Communication Skills (Cr 2), 2 FY1 - 05 Human Values (Cr 2), 3 AN1 - 02 Technical Communication (Cr 2), 4 MH1 - 02 Technical Communications (Cr 2), 4 MH1 - 03 Economics and Financial Accounting (Cr 2), 5 AN5 - 12 Aircraft Maintenance Practices (Cr 2), 6 AN3 - 01 Mechanics of Composite Materials (Cr 2), 6 AN5 - 12 Aircraft Rules and Regulation (Cr 2), 6 MH3 - 01 Automobile Engineering (Cr 2).

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, AND MAY LEAVE THE EXAM HALL ON EXPIRY OF ATLEAST OF 1 Hr FROM THE STARTING TIME OF EXAMINATION.**

Question Paper & Student Details

Type of Exam	Mid Term 2	Date of Submission	30/01/2021
Name of Faculty	Ms. Shivi Varshney	Date of Examination	05/02/2021
Course	B.Tech (Aeronautical Engineering)	Semester	SEMESTER : 1
Batch	Twentieth (20)	Subject	1 FY3 - 08 Basic Electrical Engineering (Cr 2)

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	1FY3-08 Basic Electrical Engineering (Cr 2)	
	<p>COURSE OBJECTIVE:</p> <ol style="list-style-type: none"> To understand the concepts of Electrical circuit elements of DC circuits & its functioning. To organize the AC Circuits and its different connections in the practical applications. To acquire knowledge of Transformers and its functioning. To acquire required knowledge about different types of Electrical Machines in various engineering disciplines. To understand the Significance of Power Converters and the semiconductors. To gain knowledge about the types of Electrical Installations procedures. <p>Course Outcomes (COs)</p> <p>After completion of this course, the students should able to</p> <p>CO 1. Explain the Electrical circuit elements of DC circuits & its functioning.</p> <p>CO 2. Exemplify the operation of AC Circuits and its different connections in the practical applications.</p> <p>CO 3. Demonstrate about the Transformers and its application in society.</p> <p>CO 4. Summarize the working and construction of different types of Electrical Machines in various engineering disciplines.</p> <p>CO 5. Attribute the different types of Power Converters and the semiconductors used in the engineering field.</p> <p>CO 6. Explain the Electrical Installations procedures practiced in an aircraft.</p>	

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Student Name		Student Reg No.	
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Part A

INSTRUCTIONS FOR 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.	3
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Question : 1	Define transformer?		
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Lesson Plan No. - 9	Topic - Transformer	Source - BEE by Ashirwad	CO No. -
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Question : 2	Explain Voltage regulation of a transformer?		
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Lesson Plan No. - 10	Topic - Voltage regulation	Source - BEE by Ashirwad	CO No. -
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Question : 3	Explain Resonance?		
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Lesson Plan No. - 11	Topic - Resonance	Source - BEE by Ashirwad	CO No. -
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Question : 4	Define Ideal transformer?		
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Lesson Plan No. - 11	Topic - Transformer	Source - BEE by Ashirwad	CO No. -
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Question : 5	Explain Rating of transformer?		
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Lesson Plan No. - 11	Topic - Rating of transformer	Source - BEE by Ashirwad	CO No. -
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2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.	4
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Question : 6	Define Commutator?		
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Lesson Plan No. - 12	Topic - AC machine	Source - BEE by Ashirwad	CO No. -
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Question : 7	Explain the field winding?		
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Lesson Plan No. - 12	Topic - AC machine	Source - BEE by Ashirwad	CO No. -
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Question : 8	Explain rotating magnetic field?		
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Lesson Plan No. - 13	Topic - Rotating magnetic field	Source - BEE by Ashirwad	CO No. -
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Question : 9	Describe the various application of AC machine?		
Lesson Plan No. - 16	Topic - AC machine	Source - BEE by Ashirwad	CO No. -
Question : 10	List the advantages of the three phase system over single phase system?		
Lesson Plan No. - 16	Topic - Three phase system	Source - BEE by Ashirwad	CO No. -
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 has to 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 has to 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.			3
Question : 1	State Faraday's Law of electromagnetic induction?		
Lesson Plan No. - 9	Topic - Faraday's Law	Source - BEE by ashirwad	CO No. -
Question : 2	The Secondary current of 2300/230V transformer is 35A. Determine the turn ratio, primary current and the KVA rating of the transformer?		
Lesson Plan No. - 10	Topic - Transformer	Source - BEE by ashirwad	CO No. -
Question : 3	Explain in details the construction, working principle and emf equation of a single phase transformer?		
Lesson Plan No. - 11	Topic - Transformer	Source - BEE by ashirwad	CO No. -
4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			4
Question : 4	Describe the relation between phase and line values of voltage and current in a delta connected system?		
Lesson Plan No. - 14	Topic - AC Circuits	Source - BEE by ashirwad	CO No. -
Question : 5	Explain the principle of operation of i) DC generator ii) DC motor?		
Lesson Plan No. - 15	Topic - DC generator	Source - BEE by ashirwad	CO No. -
Question : 6	List the difference between a generator and a motor?		
Lesson Plan No. - 16	Topic - Generator	Source - BEE by ashirwad	CO No. -
Part C			
FOR MIDTERM 1 - Part C: Total number of questions to be given are four (2 from CO1 and 2 from CO2), out of which student has to answer two (1 from CO1 and 1 from CO2). FOR MIDTERM 2 - Part C: Total number of questions to be given are four (2 from CO3 and 2 from CO4), out of which student has to answer any two (1 from CO3 and 1 from CO4). FOR MIDTERM 3 - Part C: Total number of questions to be given are four (2 from CO5 and 2 from CO6), out of which student has to answer any two (1 from CO5 and 1 from CO6).			
5. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			3
Question : 1	A 4 pole generator, having wave wound armature winding has 51 slots, each slot containing 20 conductor. What will be the generated voltage in machine when driven at 1500 rpm and flux per pole is 7.0 mwb.		

Lesson Plan No. - 13	Topic - Generator	Source - BEE by ashirwad	CO No. -
Question : 2	A 25 KVA transformer has turn ratio 1/10. The primary is connected to 3000V, 50Hz supply. Calculate i) Primary and secondary current ii) voltage in secondary winding.		
Lesson Plan No. - 11	Topic - Transformer	Source - BEE by ashirwad	CO No. -
6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			4
Question : 3	A 4 pole generator with wave wound armature has 51 slots each having 48 conductors. The flux per pole is 7.5 mwb. At what speed must be armature be driven to give an induced emf of 400V?		
Lesson Plan No. - 14	Topic - Electrical machine	Source - BEE by ashirwad	CO No. -
Question : 4	Find the running speed of a 4 pole induction motor working on 50Hz supply having 4% slip?		
Lesson Plan No. - 15	Topic - Slip	Source - BEE by ashirwad	CO No. -
Upload Scanned Document In Case of Numerical or Diagram For Any of The Above Questions. <i>(Mention question number with relevant fig / numerical / equations. Max 150 KB)</i>			
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.			
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