

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 / 130

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 3	Date of Submission	21/07/2021
Name of Faculty	Mr. Manbir Singh	Date of Examination	26/07/2021
Course	B.Tech (Mechatronics Engineering)	Semester	SEMESTER : 6
Batch	Fourth (4)	Subject	6 MH3 - 01 Automobile 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	Students will able to 5. Explain working principle of various parts of automobile electrical system and norms of Vehicle Maintenance a) Student should understand various electrical systems of automobile. b) Student should understand garage practice. Course 6 Able to develop strong base for understanding of future development in automobile industry. a) Student should understand basics of Vehicle performance parameters b) Student should understand various electrical base vehicles c) Student should understand the basic of hybrid vehicles. Course
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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. 5

Question : 1 Explain the function of brake.

Lesson Plan No. - 18	Topic - Brakes.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 2 Explain the difference between brake and break.

Lesson Plan No. - 19	Topic - Brakes.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 3 Define the automotive electrical systems.

Lesson Plan No. - 20	Topic - Automotive electrical system.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 4 Define the auto electricians.

Lesson Plan No. - 20	Topic - Automotive electrical system.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 5 Define the components of starter motor.

Lesson Plan No. - 21	Topic - Starter motor construction.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE. 6

Question : 6 Define the condenser.

Lesson Plan No. - 23	Topic - Automotive air conditioning.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 7 Explain the evaporator.

Lesson Plan No. - 24	Topic - Automotive air conditioning.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 8 Define the types of refrigerants are there.

Lesson Plan No. - 25	Topic - Refrigerants.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 9 Define the vehicle safety system.

Lesson Plan No. - 26	Topic - Automotive safety.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 10 Define the 3 safety features in a car.

Lesson Plan No. - 27	Topic - Automotive safety.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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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.

5

Question : 1 Discuss and explain the Mechanical brakes with neat sketch.

Lesson Plan No. - 18	Topic - Brakes	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 2 Discuss and explain the hydraulic brakes with neat sketch.

Lesson Plan No. - 19	Topic - Brakes	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 3 Describe and explain the System components and requirement of ignition systems.

Lesson Plan No. - 22	Topic - Ignition system.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.

6

Question : 4 Discuss and explain GPS global positioning system work.

Lesson Plan No. - 27	Topic - Automotive safety.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 5 Discuss and explain working principle of Electrolux refrigeration system.

Lesson Plan No. - 25	Topic - Refrigerants.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 6 Discuss and explain compressor and its working principle.

Lesson Plan No. - 24	Topic - Automotive air conditioning.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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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.

5

Question : 1 Describe and explain the electrical systems are used in automotive applications.


Lesson Plan No. - 20	Topic - Automotive electrical system.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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Question : 2 Describe and explain the types of battery charging system.

Lesson Plan No. - 21	Topic - Starter motor construction.	Source - Automobile engineering by R.K. Rajput.	CO No. -
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6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.

6

Question : 3	Describe and explain the benefits of Air bags and Belts.		
Lesson Plan No. - 26	Topic - Automotive safety.	Source - Automobile engineering by R.K. Rajput.	CO No. -
Question : 4	Describe and explain the Fault diagnostic of refrigerants.		
Lesson Plan No. - 25	Topic - Refrigerants.	Source - Automobile engineering by R.K. Rajput.	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>			
<p>I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.</p>			
<p>Corporate Office: H 974, Palam Extension, Part 1, Sector 7, Dwarka, New Delhi 110077</p>			

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