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 3 / 47 /

Instructions For Students / FacultyMid Term I (Total 60 Marks, 2 HRS. Syllabus From Beginning Of Session)
• Part A: Total number of questions to be given are five, 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 15 marks.
• Part B: Total number of questions to be given are six, out of which student has to answer any four. 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 four, out of which student has to answer any three. They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 7 marks. Total 21 marks.
Mid Term II & III (Total 90 Marks, 2.5 HRS. Syllabus From Beginning Of Session)
• Part A: Total number of questions to be given are ten, 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 seven, out of which student has to answer any five. They are long answer type (**Not More Than 50 Words For Question)**, each carrying 6 marks. Total 30 marks.
• Part C: Total number of questions to be given are five, out of which student has to answer any four. They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 10 marks. Total 40 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 (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)

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

Question Paper & Student Details

Mid Term	Mid Term 3	**Date of Submission**	22/09/2020
Name of Faculty	Mr. Sukumar	**Date of Examination**	01/10/2020
Course	B.Tech (Aeronautical Engineering)	**Semester**	SEMESTER : 5
Batch	Combined Batches 15, 16, 17, SF 1	**Subject**	5 AN4 - 05 Aircraft System (Cr 3)7 AN5 - 12 Maintenance of Airframe and System (Cr 3)

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	5AN4 - 05 Aircraft System (credit-3) COURSE OUTCOME Upon completion of the course, Students will be able to CO1: Interpret the construction and working principle of conventional aircraft control systems. CO2: Illustrate the performance characteristics of various aircraft engine control systems. CO3: Explain the functions of various types of aircraft communication and navigation systems. CO4: Compare the features of various hydraulic & pneumatic systems of an aircraft. CO5: Demonstrate the operation of aircraft landing gear system. CO6: Analyze the performance of various types of Fuel Systems used on an aircraft. CO7: Identify the various auxiliary systems and its operation in an aircraft. CO8: Describe the general maintenance practices carried out on an aircraft.

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Student Name		**Student Reg No.**	

Part A			
Question : 1	Compare Turnbuckle and Fairlead.		
3	Conventional system of flight control	A/C Systems by ION MOIR.	1

Question : 2	Define LORAN.		
8	Introduction to communication system	A/C Systems by ION MOIR.	3
Question : 3	Discuss the application of Power Transfer Unit (PTU) in Hydraulic system of an aircraft.		
11	Hydraulic system	A/C Systems by ION MOIR.	4
Question : 4	List down the different valves used in the Pneumatic system.		
14	Pneumatic system	A/C Systems by ION MOIR.	4
Question : 5	Name the Types and Construction of Aircraft Brakes.		
18	Brake system	A/C Systems by ION MOIR.	5
Question : 6	List the properties of aviation fuel.		
20	Fuel system	A/C Systems by ION MOIR.	6
Question : 7	Define the Environmental Control System (ECS) in aircraft.		
26	Define the Environmental Control System (ECS) in aircraft.	A/C Systems by ION MOIR.	7
Question : 8	Define Bootstrap system.		
29	Anti Icing system	A/C Systems by ION MOIR.	7
Question : 9	Define OUTRIGGER.		
33	General Maintenance Practices	A/C Systems by ION MOIR.	8
Question : 10	Define the selection procedure of Lubrication to an aircraft.		
37	General Maintenance Practices	A/C Systems by ION MOIR.	8
Part B			
Question : 1	Summarize Pneumatic Power System Maintenance in an aircraft.		
16	Pneumatic system	A/C Systems by ION MOIR.	4
Question : 2	Discuss about the Shock Strut Operation with a sketch.		
19	Landing gear system	A/C Systems by ION MOIR.	5
Question : 3	Explain about the Fuel Ignition System in an aircraft.		
23	Fuel system	A/C Systems by ION MOIR.	6
Question : 4	Demonstrate about the Chemical Oxygen Systems in an aircraft.		
27	Auxiliary system	A/C Systems by ION MOIR.	7
Question : 5	List down the seat ejection sequences in an aircraft.		
28	Seat Ejection system	A/C Systems by ION MOIR.	7
Question : 6	Discuss about the Control Surface Rigging in an aircraft.		
31	General Maintenance Practices	A/C Systems by ION MOIR.	8
Question : 7	Summarize about the Hydraulic contamination control program.		
34	General Maintenance Practices	A/C Systems by ION MOIR.	8
Part C			

Question : 1	Discuss about the inspection of ELT.		
9	Navigation system	A/C Systems by ION MOIR.	3
Question : 2	Explain in detail about the Shimmy Dampers and its types.		
19	Landing gear system	A/C Systems by ION MOIR.	5
Question : 3	Compare the Gravity feed system and pump feed system with a neat sketch.		
23	Fuel system	A/C Systems by ION MOIR.	6
Question : 4	Explain about the Thermal Electric Anti-Icing system of an aircraft.		
29	Anti Icing system	A/C Systems by ION MOIR.	7
Question : 5	Demonstrate the process of Fueling while aircraft mounted auxiliary power units (APU) are in operation.		
40	Refueling	A/C Systems by ION MOIR.	8
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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