

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 / 18 / SET 1

Instructions For Students / Faculty Mid 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 1	Date of Submission	05/08/2020
Name of Faculty	Mr. R.N. Jha	Date of Examination	10/08/2020
Course	B.Tech (Mechatronics Engineering)	Semester	SEMESTER : 7
Batch	Third (3)	Subject	7 AN6 - 60.1 Aircraft Avionic 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	Upon completion of this course, Students will be able to CO 2: Summarize the various aircraft instruments and its application. CO 3: Interpret the construction and working principle of various airborne equipments. CO 4: Illustrate about the performance of basic Inspections procedures in equipments working.		
Email I'd	ramnareshjha@soaneemrana.org	Phone No.	769-093-4100
Student Name		Student Reg No.	

Part A			
Question : 1	Define transducer.		
1	Transducer elements	Instrumentation , measurement and analysis (BC Nakra and KK chaudhary) chapter no-1 page no-6	2
Question : 2	Describe the inductance type transducer for measuring relative displacement.		
2	Relative motion measuring devices	Relative motion measuring devices	3
Question : 3	Explain the working of mechanical type RPM indicator		

3	Measurement of rotating shaft RPM Measurement	Aircraft instruments (EHJ pallett	3
Question : 4	Write a short note on Bourdon tube.		
4	Elastic pressure sensing elements	Aircraft instruments (EHJ pallett	2
Question : 5	Describe the construction and operation of tank unit capacitor of fuel quantity indicating system.		
5	Fuel gauging system	Aircraft instruments (EHJ pallett	3
Question : 6			
Question : 7			
Question : 8			
Question : 9			
Question : 10			
Part B			
Question : 1	Eplain dynamic performance charecterstics of instruments.		
1	Dynamic performance characteristics	Transducer and instrumentation (DVS Murthy) Chapter no-1 page no-18-22	3
Question : 2	Describe the construction and operation of absolute motion transducer.		
2	Measurement of motion	Instrumentaion , measurement and analysis (BC Nakra and KK chaudhary)	3
Question : 3	Explain the construction and operation of mechaniclly operated pressure gauge .		
4	Measurement of pressure	Aircraft Instruments (EHJ Pallett)	3
Question : 4	Explain the construction and operation of temperature sensor based on resistance variation.		
6	Measurement of temperature	Aircraft Instruments (EHJ Pallett)	3
Question : 5	Explain why fuel quantity should be indicated by weight in aircraft.		
5	Measurement of fuel quantity by weight	Aircraft Instruments (EHJ Pallett)	4
Question : 6	Explain the construction and opeation of vapoure pressure thermometer.		
6	Measurement of temperature	Aircraft Instruments (C A William)	3
Question : 7			
Part C			
Question : 1	Explain generlised configuration of measuring instruments.		
1	Elements of measuring instruments.	Instrumentaion , measurement and analysis (BC Nakra and KK chaudhary)	2
Question : 2	Decribe the construction magnetic compass.		

7	Magnetic compass.	Aircraft Instruments (EHJ Pallett)	3
Question : 3	Explain the construction and working principle of air speed indicator.		
9	Air speed indicator.	Aircraft Instruments (EHJ Pallett)	3
Question : 4	Explain the operation of remote reading pressure indicating system using AC inductor type transmitter and ratiometer type indicator.		
10	Remote reading pressure indicating system	Aircraft Instruments (EHJ Pallett)	3
Question : 5			
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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